



### Abstracts

- 22nd AinShams International Medical Students' Congress (AIMSC).
- Malaysian Medical Student Summit (MMSS).
- Student Research Unit Zazazig University (SRUZU).
- Young European Scientist Meeting (YES Meeting).
- Bangladesh International Medical Students' Scientific Congress (BIMSSCON).





**International Journal of Medical Students**  
The *International Journal of Medical Students* (IJMS), is a peer-reviewed open-access Journal, created to share the scientific production and experiences of medical students worldwide.



**Blink SXie1**  
Sand Art. Scene from "Vibrant Life"  
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YES (Young European Scientist) Meeting, an annual students conference held in the Faculty of Medicine of Porto University, in Portugal.

## YES (Young European Scientist) Meeting, an annual students conference held in the Faculty of Medicine of Porto University, in Portugal.



Figure 1. Photo from the YES Meeting, 2016.

Founded by a group of medical students and directed towards students, YES Meeting is driven by three major goals: to promote junior research on the biomedical field, to provide students with an experience sharing platform and to narrow the gap between world renowned researchers and the next generation of scientists. On its 11th edition, held from the 15th to the 18th of September 2016, more than 450 participants from 23 different nationalities had the opportunity to engage in an outstanding scientific program, present their own work, choose from over 40 challenging workshops and discover the city, through an exciting social program.

The 11th YES Meeting was honored by the presence of two Nobel Prize laureates in Medicine or Physiology, Professor Harald zur Hausen and Professor Werner Arber, and by the presence of Professor Jeffrey Friedman, 2008 Lasker Award recipient. The scientific lineup also featured other world renowned experts, in a total of 9 scientific sessions including Interventional Cardiology, Organoids, Fetal & Pediatric Surgery and Neurosciences, lectured by 15 scientists, namely Professor Juan Tovar, Editor of the European Journal of Pediatric Surgery; Professor Domenico Di Ceglie from the University College London, who gave his insight on Atypical



Figure 2. Photo from the YES Meeting, 2016.

YES (Young European Scientist) Meeting, an annual students conference held in the Faculty of Medicine of Porto University, in Portugal.

Gender Identity Development and Dr. Monica Rosenberg, from Yale University, who shared her expertise on methods of predicting attention and behavior. The Ministry of Science, Technology and Higher Education honoured the participants with a keynote session focus on the role of young scientists in an ever changing reality of technological and scientific breakthroughs.

On the 15th of September, the participants were able to experience the Global Health Day, the 11th YES Meeting Pre-Course, organized in a partnership with the World Health Organization (WHO). In this breakthrough event, the participants had the opportunity to explore a reality which is not yet very disclosed in Medicine courses and that are essential in the academic formation of young doctors. The Global Health Day featured 2 scientific sessions, a round table under the theme "Media approach to Medicine and New Global Health Challenges" and 3 workshops. Among other notable speakers, the 11th YES Meeting Pre-Course counted with the presence of Professor Fernando Nobre, founder of Assistência Médica Internacional, Dr. Jorge Sampaio, Former President of the Portuguese Republic, Dr. Christopher Dye, from WHO, and Dr. Beat Stoll, from the Institute of Global Health.

Biomedical students were invited to share their own inves-

tigation work on the fields of Oncology & Molecular Biology, Physiology & Immunology, Neurosciences, Surgery, Internal Medicine and Public Health & Medical Informatics.

The 11th YES Meeting was proud to receive a record breaking submission of abstracts to be presented during the congress. 42 research papers were presented in oral presentations, divided into Plenary Sessions (the best works from each area) and Parallel Oral Sessions. Our Poster Presentations included over 130 research works. This was an opportunity for the students to receive constructive feedback from notable physicians and win international recognition as well as one of the 15 monetary prizes. All of the works presented during the congress are compiled in the 11th YES Meeting Abstract Book, hereby presented with the support of the International Journal of Medical Students.

The 11th YES Meeting Organizing Committee would like to thank all the participants for making it the most successful edition of the YES Meeting yet. The commitment to promote junior research on the biomedical field and to provide students with a platform to share their experiences will continue to be our major motivation for the 12th edition of our congress, that will take place from the 14th to the 17th of September 2017.



Figure 3. Photo from the YES Meeting, 2016.

## 2nd Bangladesh International Medical Students Scientific Congress (BIMSSCON) 2016

Muaz Sadique

At very onset I express my gratitude to Almighty Allah for enabling us to hold this congress. Organizing such mammoth program is no mean task and I humbly acknowledge with gratitude the many untiring hands & their sleepless nights that went into making this congress into a meeting worth of your offer dance.

We must appreciate that our young medical students who are working day & night with very limited resources & supports staffs throughout the country. As a result 2nd Bangladesh International Medical Students Scientific Congress (BIMSSCON) 2016' will bigger than before. According to theme 'Emergencies in Medicine: Bridging the Gap'. We are overwhelmed with the enthusiastic response and spontaneous involvement of medical students in this congress. This abstract book proves that Bangladeshi medical students are no less than the others in carrying out researches and scientific publications. Our organization and congress have been providing a platform to upheld their professional skills and inspire them further to prepare themselves for future challenge. The abstracts include original research, literature and systemic reviews, case reports and case se-

ries on a vast array of topics. Research is the key to the development of medical science and for achieving an effective and wholesome healthcare system. Since its first edition, BIMSSCON has served as the sole platform for medical and dental students for presenting their research work in Bangladesh. Through competitive oral and poster presentations, they are getting the opportunity to showcase their findings to the medical and dental student community of home and abroad. This Abstract Book is a testament to their hard work.

This book has been so designed that readers will get the whole essence of BIMSSCON and IFMSA-Bangladesh at a glance. Articles from our respected mentors have been added for further enrichment. Special thanks to Dr. Tasdik Hasan Dip, Dr. Yameen Hamid, Dr. Imtiaz Hafiz, Palash Golder, Nowrin Aman, Alina Firoze, Nusrat Jahan Keya, Sayeda Najmun Nahar, Syeda Fatema Alam, Aminul Kibriya, Sajib Zaman, Sudipto Sarker, Humayra Anjum, Mussanna Nabi Chowdhury, Naveed Rahman Aunkon and Farhana Nusrat without whom this prestigious publication wouldn't be this successful.



Figure 1. Photo from the BIMSSCON, 2016.

## Abstracts

### Oral Presentations

- 01 **Mitochondria as a Target for Future Diabetes Treatments.**  
Franziska Thimm, Marten Szibor.

Diabetes mellitus is rapidly becoming the world's most dangerous serial killer. Type 1 diabetes (T1D) is a currently incurable autoimmune disease marked by progressive, and eventually exhaustive, destruction of the insulin-producing pancreatic beta cells. Type 2 diabetes (T2D) describes the combination of insulin resistance in peripheral tissue, insufficient insulin secretion from the pancreatic beta cells, and excessive glucagon secretion from the pancreatic alpha cells. T1D as well as severe cases of T2D are treated with insulin replacement, which can merely be considered as life support for the acute phases of the disease. Islet replacement of insulin-producing pancreatic beta cells represents a potential treatment method for both insulin-depleted diabetes (T1D) and insulin-resistant diabetes (T2D) and may shift diabetes management from life saving measures to a cure. One of the key challenges in islet transplants is the generation of reactive oxygen species (ROS) and the associated oxidative stress, which restricts graft longevity. A major leak of ROS takes place during oxidative phosphorylation at mitochondrial electron transport chain (ETC). Additionally, hyperglycemia-induced superoxide (O<sub>2</sub><sup>-</sup>) production has been linked to the development and progression of diabetic complications, both macrovascular and microvascular. Decreasing ROS in diabetic patients may prevent the incidence of long term diabetes complications. This review provides an overview of the role of mitochondria in diabetes, introducing them as a possible target for future treatment of diabetes.

**Keywords:** Reactive Oxygen Species, Mitochondrial DNA, Diabetes Mellitus, Electron Transport, Oxidative Phosphorylation.

- 02 **Molecular Epidemiology and Clinical Features of Hepatitis C virus (HCV) in the Sindh, Pakistan.**  
Shameem Bhatti, Sobia Manzoor.

**Introduction:** Highly variable genome of HCV in different geographical regions of world has made imperative to conduct local population studies. HCV affects more than 200 million people worldwide and is a leading cause of liver diseases such as hepatocellular carcinoma. Various reports on HCV prevalence have been published from different regions of Pakistan, but there is dramatically increased ratio give us alarming sign from interior Sindh of Pakistan and now rural area of Sindh, Gambat District khaipur has become a serious health issue. This comprehensive study was carried out to estimate the increased frequency of hepatitis C virus infection and its related risk factors in rural area. **Methods:** Total 31560 people were tested for HCV out of which 4314 HCV infected patients were collected from Gambat Institute of Medical Science College (GIMS), Sindh, Pakistan from year 2010 to 2015. Detailed patient's history was asked to complete a questionnaire of clinical and epidemiological data for each patient. All patients were tested for anti-HCV antibodies by ICT, ELISA, PCR and genotypes. **Results:** The observed risk factors with significant associated with HCV transmission were reused injections, sexual contacts and lack of awareness in general public. Multiple queries found rising about viral infections with family history. The frequency of HCV antibodies was higher in males (14.98%) than in female (11.74%). This study showed that HCV is most frequently reported diseased in hospital. As compared to other genotypes; genotypes 3a is most prevalent genotype with less than 70% response to interferon therapy. A duration of HCV therapy (24 or 48 weeks) had more efficacy in genotype 2 or 3 compared with genotype 1 or 4. HCV infected men in their early age group while female acquired more infections in their middle age group. **Conclusion:** This

study showed a high prevalence of HCV and established a high carrier state of clinically silent HCV infection in Gambat City Sindh, Pakistan. It was observed that therapeutic injection, needle stuck and medical procedure were factors most strongly associated with HCV infection.

**Keywords:** Hepatitis C virus, Genotype, Immunochromatographic Tests, intravenous, Hepatitis B virus.

- 03 **Nutrition for People Living with HIV/AIDS in Africa**  
Sulaiman Yunus.

**Introduction:** The HIV/AIDS epidemic is having a devastating impact on health, nutrition, food security and overall socioeconomic development in countries that have been most seriously affected by the disease. There is thus an urgent need for renewed focus on nutrition as a fundamental part of a comprehensive package of care for people living with HIV/AIDS. The epidemic is occurring mostly in populations where malnutrition is already endemic. As an urgent priority, therefore, greater political, financial and technical support is needed to improve dietary quality to recommended levels. In addition, focused evidence-based nutrition interventions should be part of all national AIDS control and treatment programmes. Action and investment to improve nutrition needs to be based on sound scientific evidence, and programmatic and clinical experience with the prevention, treatment and management of HIV/AIDS and related infections. Today in Africa, women in power have considered it important to synergize and address issues affecting women and girls. There are about 23.5 million people living with HIV in sub-Saharan Africa. Less than 30% of young women have a clear understanding of what HIV is all about due to socio-cultural factors that increase vulnerability of women to HIV and Aids. The subordination of African women creates vulnerability to HIV infection through economic dependency, lack of assets, and lack of protection against abuse and exploitation. Most women in African societies are subjected to discrimination right from their youth and denied access to education and gainful employment. Women end up being engaged in subsistence farming or low paying jobs. Economic pressures lead women to engage in vices like sex work and transactional sex. In urban settings, cohabitation and temporary sexual relationships are common because women need support for items like house rent and feeding. Of the 287,000 maternal deaths, 162,000 occurred in African region in 2010. We have 1 female condom for every 10 women in Africa. African women constitute 58% of all people living with HIV. There is increasing concern that Sub-Saharan Africa is the region where more women are infected by HIV than men. 60 per cent of people living with HIV infections in Africa are women. Women do not have the full enjoyment of their freedom despite the importance of womanhood in societies through the acronym WOMAN - Workers, Organizers, Managers, Advisers, Nation-builders. **Methods:** 1- The effects of HIV/AIDS on energy metabolism, 2- Nutrition considerations in the use of antiretroviral drugs in resource-limited settings, 3- The role of nutrition interventions in the prevention of HIV infection and progression of HIV/AIDS, 4- Micronutrients and HIV-1 disease progression among adults and children, 5- Pregnant and lactating HIV-infected women. **Conclusion:** Adequate nutrition, which is best achieved through consumption of a balanced healthy diet, is vital for health and survival for all individuals regardless of HIV/AIDS status.

- 04 **An Exploratory Study on Assessment of Participation of Older Persons in Family Decision Making Process including Health Care Seeking.**  
Rhedeiya Nury Nodi, Khwsbotonnesa, Rabiul Islam.

**Introduction:** The demographic transition theory reveals that the global population keeps ageing rapidly. Between the years of 2000 to 2050, the proportion of the world's population over the age of 60

will double from about 11 percent to 22 percent & the context of our country is far more adverse. This recent study was conducted with the general objective of assessing the older person's participation in decision making process regarding family related affairs in Dhaka city. **Methods:** The present study was both qualitative and quantitative in nature. The study has been conducted in South and North City Corporation of Dhaka City. 60 older persons (60 years or above) have been selected through purposive sampling and data were collected by key informant interview by a structured pretested questionnaire. **Results:** The result shows that 33.3% of the older persons have the decision making authority within the family. 35% older persons always asked for their opinion in family related affairs, 20% of older persons are never asked for their opinion. 55% older persons opinion are taken for marriage and in 18% cases their opinion were taken about social function arrangements. Only 5% of them were asked for opinion about their treatment options. 35% older persons think that they are the head of the family, 33.3% think that they have no role in the family, 18.3% think that they are the advisor of the family, 13.3% think they guide the family. The results of in depth interview shows that according to the respondents the financial state of an older person is the contributory factor for the respect shown to him/her by their family members. In case of health care seeking options they have no choices other than depending on their children & some of them have serious dissatisfaction with the current treatment/medicines they are receiving from the facilities/physicians. **Conclusion:** This study revealed a clear picture of the poor socio-cultural and health status of older persons and prevalence of abuse and neglects of elderly rights both in urban & rural Bangladesh more in females. Geriatric health is a less financed & very low priority topic in Bangladesh. Due to everyday negligence & unstable services to this very fast growing population, several socio-physical-mental problems can be developed which is a great threat for the development status of a country & especially for a developing country like Bangladesh.

**Keywords:** Older person, Decision Making, Urban area, psychosocial policy.

- 05 **Prevalence of Undetected Refractive Errors Among School Children Aged 5- 10yr.**  
Shamaila Hassnain, Sumbal Inam, Aleena Butt, Mariam Raza.

**Objectives:** To determine the undetected refractive errors and its association with different habits among school children aged 5yr-10yr in public and private schools. **Methods:** A cross-sectional study was conducted to determine a total of 200 students of class 1 to class 5, excluding those who were already wearing the glasses. Interviews using a structured questionnaire and visual acuity using standard Snellen's chart were done. Children with visual acuity less than 6/9 were marked as positive for refractive error. **Results:** The results revealed that 72 out of 200 students (36%) had refractive errors, public (37.5%) private (62.5%). The study students had a mean age of 7 ±1.7years with 47% being females and 53% males. 116 students included in the study belonged to age group 5-7 years (58%) and 84 belonged to age group 8-10 years (42%). Statistically significant association (p <0.05) was found among private schools between myopia and watching television closely, overindulgence in video and computer games, studying by keeping the book at arm's length and studying in dim light. **Conclusion:** Myopia was the most common refractive error occurring among students examined. A strong correlation was found between myopia and watching TV closely, studying in dim light and over indulgence in playing video and computer games. It is recommended that eye care services should be integrated in the schools and annual eye examination of all students should be done to timely detect the presence of refractive errors.

**Keywords:** Prevalence, Refractive error, Children.

- 06 **Morbidity Pattern of Children in a Rural Area.**  
Emiko Sultana, Barhun Kanti Biswas.

**Introduction:** Communicable diseases are annually responsible for the death of nearly three million children. Child mortality is a significant problem, especially in rural areas where water and air po-

llution is immense. **Objectives:** The aim of the study was to collect data from children aged less than eighteen. The objective was to assess their prime health problems and decipher the management for their recovery. The incidence of bacterial infection in children of the Faridpur district area was thought to be elevated. **Methods:** A cross-sectional descriptive study was organized and a purposive sampling technique was employed to obtain the information. The study was done in the Department of Pediatrics in Faridpur Medical College Hospital in the month of November, 2015. Thirty children were approached and a questionnaire was filled out. The inquiries were about the respondents' age, chief complaints before hospital admission, treatment, medication given, and duration of stay in the hospital. The data collected was analyzed with the help of the SPSS software. Materials used were a pre-tested questionnaire, which was used as the instrument of data collection for the proposed study. Sphygmomanometers, stethoscopes, thermometers and wrist watches were used to record the blood pressure, temperature and pulse. **Results:** One fourth of the patients were female while the rest were male. About eighty percent of the patients were admitted to the hospital with the complaint of a fever. Majority of the patients were admitted due to diseases that involved the nervous system or the respiratory system. Meningitis was the most common infection, affecting ten of the children who were admitted. More than sixty percent of the patients were undergoing treatment which included an antibacterial drug. The mean duration of hospital stay was one week. **Conclusion:** The incidence of a fever commonly signifies that the underlying pathology is due to some form of infection. Thus, most patients with a fever were treated using an antibacterial drug which combated the bacterial infection. The study was conducted in the winter season, which may have been responsible for the high number of respiratory system disease cases.

**Keywords:** Children, Fever, Treatment, Infection

- 07 **Socio-Demographic and Morbidity Pattern of Geriatric Population in a River Erosion Area of Bangladesh.**  
Emiko Sultana, Tonmoy Shekhor Biswas, Rajib Biswas, Rafiqul Islam.

**Introduction:** A survey in 2002 showed that amongst the approximate 605 million individuals above sixty in the world, about 400 million are now living in low-income countries. The number of elderly persons is expected to rise to a number reaching 1.2 billion worldwide with about 840 million of them living in the low income countries by the year 2025. In general, certain chronic diseases are more frequently seen amongst the geriatric population. These include cardiovascular diseases, cancer, accidents, diabetes, locomotor-system-related diseases, respiratory illnesses, and problems involving the genitourinary system. **Objectives:** The aim was to collect data from the individuals aged above sixty. The objective was to assess their socio demographic and morbidity pattern and identify their prime health problems. Chronic diseases are more prevalent in the geriatric population. Those living around areas prone to river erosion have been seen to be more likely to suffer through large amounts of economic loss and consequently more stress. **Methods:** A cross sectional descriptive study was used and a purposive sampling technique was employed to obtain the information. Students went door to door and searched for individuals aged sixty or above and filled out the questionnaire. This was done in a face to face interview method. The area selected for the study was the Charvadrashan Upazila of Faridpur district, which was known to be vulnerable to river erosion. The inquiries were about the respondents' current health status at present and in the past, and any supporting aid or medication used. The data collected was analyzed with the help of the SPSS software. Materials used were a pre-tested questionnaire, which was used as the instrument of data collection for the proposed study. Sphygmomanometers, stethoscopes, and wrist watches were used to record the blood pressure and pulse. **Results:** The study showed that out of 666 respondents 391 (58.7%) were male and 275 (41.3%) were female. Most of the respondents are unemployed (331). Amongst them, 119 respondents are housewives, 105 are agricultural workers, 47 are businessmen, 36 day laborers, 17 service holders, 9 teachers and 2 worked in other fields. 462 (69.4%) respondents have lost their asset or house

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in river erosion. The disease most prevalent amongst the population was osteoarthritis, affecting almost half of the respondents, affecting the musculoskeletal system. Hypertension was also found in a large number of respondents. Most of the respondents, however, did not use supporting aid (68.8%) and a large fraction did not use any medication (36.9%). **Conclusion:** Many of the respondents worked as agricultural workers and day laborers, professions which require a lot of muscular work and long hours of endurance, which may have been the predisposing factor of the musculoskeletal illnesses. A portion of the respondents worked as businessmen, a profession which is endowed with high levels of mental pressure and stress, possibly having an effect upon their blood pressure, resulting in cardiovascular diseases. Individuals who have experienced a loss of asset in river erosion were seen to be particularly prone to hypertension, possibly due to the anxiety of repeated potential of environmental damage.

**Keywords:** Geriatric, Chronic diseases, River erosion, Stress.

- 08 **The Importance of Balint Group's Presence in Medicine's Curriculum for Doctor-Patient Relationship Understanding.**  
Ana Paula Brandão Silva, Yael Porto Silva, Louise d'Abadia Morais, Luísa Ribeiro Koch, Ebony Lima dos Santos, Rafael Rocha Luzini, Sandra Costa Prudente.

**Introduction:** Michael Balint was a Hungarian general practitioner and psychoanalyst who gave a new meaning to the medical appointment, redefining the pillars of the doctor-patient relationship. In his book, "The Doctor, His Patient and Disease", are described general practitioners groups which shared and reflected the experiences lived with patients, seeking to improve medical psychotherapy and enhance the posture in front of adversities which comprehend the doctor-patient relationship. **Objectives:** To report the impact of Balint's theory in medical training, and to describe the organization and formation of Balint's contribution groups in medical school, thereby providing a humanistic and holistic appreciation of interpersonal relations in medical practice. **Methods:** In Balint groups in a medical school, academics are divided into two subgroups: the verbalization group and the observer group. The first group comprises at least six academics and is responsible for the debate and active interpretation of the case proposed by a member, mediated by the professor-leader. Participants should report the clinical cases without resorting to any notes, in free words association, bringing to the group the needed details amount in order to clarify the situation, context, and the illness, the transference manifested by the patient, family members' involvement and other professional specialists' participation when eventually consulted. They should also bring to the group their feelings, reactions and reflections regarding this care, the countertransference as if they were in a supervision group. Done the report, the group members establish questions and statements; propose questions, request clarifications, present cutouts of similar situations experienced by them and discussions. The second group consists of the rest of the academics, who must perform a careful and critical listening to the clinical case and, if there is permission from the professor-leader, at the end of the discussion they can assess the first group's development. **Results:** The reported situation is wide, provoked, depth, and participants expose the situation doctor-patient-disease as a field of analysis; researching what would happen in that particular situation from the perspective of medical activity, considering that the patient has a unique demand, to whom the appropriate and constructive service implies an attitude of acceptance, attention, interest, dedication and research. **Conclusion:** Balint group in medical training, based on the analysis of the transfer [of the patient from the case presented] and counter transference [the observation group]; in understanding the type of conduct that should be adopted for the exercise centered on the patient and the effect of daily conduct, it becomes more efficient. The medical professional who combines therapy empathic connections and listening attentively can assimilate the determinants of health and understand the biopsychosocial aspects involved physician-patient relationship, promoting a quality health service.

**Keywords:** Balint. Medical education. Doctor-patient relationship

- 09 **Practice of Physical Exercises by Medical Students of Pontifical Catholic University of Goiás and its Relation with the Teaching.**  
Ribeiro Koch, Ebony Lima dos Santos, Rafael Rocha Luzini, Sandra Costa Prudente.

**Introduction:** Graduation in medicine imposes various academic obligations and responsibilities that require commitment and dedication full time. This routine can become deleterious on the physical activity levels of the students. Literary evidence highlights the deleterious effects of inactivity of medical students. Whereas knowledge of these students does not make them immune to such damage, it's timely and relevant conduct an analysis of this problem among medical students of the Pontifical Catholic University of Goiás (PUC Goiás), an institution that has never been the subject of studies of this nature. Considering this situation, medical students at PUC Goiás, under the guidance of a Professor at the Department of Medicine - PUC Goiás, initiated a research called "The Practice of Physical Exercises in the routine of the Medical students of Pontifical of the Catholic University of Goiás: Implications for Health". Through the Scientific Initiation CNPq program (National Council for Scientific and Technological Development - "National Counsel of Technological and Scientific Development"), each student held its own thematic focus within the research project, which is still ongoing, and they could conduct their own research. In this abstract we will highlight the role of teaching methodology and if it is whether or not related to the physical exercise through evidence found in the literature. **Objectives:** The project aims to determine the impacts of the student routine of medical students at PUC Goiás, and its effects in practice - or lack thereof - of physical activities. In case of denial as to the regularity of exercise, consider what health effects are observed in these students. The elaboration of an integrative review on the Positive and Negative Reflections of Problem Based Learning (PBL) in the student routine of medical academics presents itself as a potential support for a consistent interpretation of the data obtained from the research project. **Methods:** The construction of the Integrative Review took place in six major steps: 1) Development of guiding question; 2) Search or sampling in the literature; 3) data collection; 4) Critical analysis of the included studies; 5) Discussion of the results; 6) Presentation of the Integrative Review. Data collection was carried out by consulting the following databases: LILACS, PubMed and Scielo. The first two provided theoretical basis to write on the subject. The third provided the articles for analysis, the research was held on 10.19.2015 at 1:48pm. The following descriptors were used: problem based learning and medical students. Finally, the filters applied: Portuguese; English; Collections Brazil. Thus, 15 articles were found, whose dates range from 2008 to 2014. **Results:** No evidence was found that related the role of PBL on the way of life of medical students as well as their influence on the availability and motivation to practice extracurricular activities, one of which, the practice of physical exercises. Overall, current studies focus its focus on the impacts of this methodology only on learning, on the effects on the curriculum, on the curricular student performance and on the impressions of students on learning with PBL. **Conclusion:** There is a lack of knowledge when it tells the PBL impacts at multiple levels, and not only in relation to student performance. One should understand the medical student in a holistically way, the study routine is heavy and consumes time that could be free. Considering the PBL as a methodology that basically depends on the autonomy and dedication of the student, it is possible to think of possible influences on the availability of time and motivation for physical exercises. There was therefore a lack of studies in this area within the given period, and a need to encourage research in this field.

**Keywords:** Medical Students. Physical Exercises. Problem Based Learning.

- 10 **Knowledge, Attitudes & Perceived Barriers among Medical Students towards Participation In Clinical Research.**  
Abdelrahman Ibrahim Abushouk, Abdel rahman Nazmy Hatata, Ibrahim Mahmoud Omran, Mohammed Mahmoud Youniss, Abdul lah Gad Meawad, Khale Fayez Elmansy, Nahla Fawzy Abu Elezz.

**Introduction:** In recent years, a paradigm shift has been noticed from experience based to evidence-based practice in medicine and education. The early introduction of research focused programs into me-

dical schools, as well as the encouragement of student participation in research fosters favorable attitudes towards academically focused careers among medical students. **Objectives:** In this study we attempted to assess clinical research related knowledge and attitudes and perceived barriers among medical students at Ain Shams University. **Methods:** A cross sectional descriptive study was employed in which a representative sample of 70 medical students was taken from each academic grade. Anonymous self-administered questionnaire, built based on literature review, was used for data collection to assess the students' knowledge, attitudes and perceived barriers towards participation in clinical research. The attitude and knowledge scores were correlated with other variables e.g. gender, year of study and schooling background. **Results:** A total of 420 answers were received. The majority of students showed positive attitudes towards clinical research with higher attitudes among the 4th, 5th & 6th academic grades. The study showed relatively low knowledge scores with the highest scores among the students of the 4th and 6th academic grades. Many barriers were highlighted as lack of proper mentoring, lack of time, lack of lab facilities to conduct research. **Conclusion:** The study showed relatively high attitudes among medical students towards clinical research, but coupled with a low knowledge score. This could be related to various perceived barriers to undergraduate research. These barriers need to be addressed and also integration of research into the undergraduate curriculum is needed to ensure an improvement in the quality and quantity of undergraduate medical research.

11 **Cell Phone and their impact on Male fertility (Systematic Review).**  
Vahedeh Mohammadi Meskin, Fatemeh Kharaie.

**Objectives:** There are raising concerns about the possible hazards of radio - frequency (RF) electromagnetic waves emitted by the Cell phones on human health. Nowadays infertility is one of the medical problems in the world. Male infertility is a common disorder associated with Y - chromosome and approximately 1 / 1000 men are infertile because of failure in spermatogenesis. Studies have shown that men with the highest use of mobile phones (more than 4 hours per day) had a lower sperm count than usual ones. **Methods:** In this study PUBMED and SCOPUS were using the website and studies were reviewed and accepted fully. **Results:** RF energy produced by the electric field, causes testicular temperature goes up too safe. Even have a higher degree of security than can damage sperm. Mobile usage more than 4 hours per day can cause infertility. ROS one of the main reasons for infertility in men that causes oxidative stress due to exposure testicular organs to mobile. **Conclusion:** It seems that mobile phone exposure affects sperm motility and viability, but researchers about its impact on the concentration of semen (sperm count per unit of semen) have reached the correct result and credible and to the wider needs study. better perceive about the impact of environmental factors on sperm quality would be effective in treatment for subjects who one looking for fertility.

**Keywords:** Infertility, Cell phone, Radioactive waves.

12 **Potentiation of  $\alpha\beta$  T-cell Activation by Ascorbic Acid.**  
Ahmed A. Nugud, Abd Alaziz Galadari, Leena Al-Kayyali, El-Rasheed Hassan, Shumoos A. Nugud, Asma Doudin, Shaiasta Manzour, Ahmed T. Elserafy.

**Introduction:** Ascorbic acid is an antioxidant known to stimulate the immune system. However, no strong evidence showed how it activates the adaptive immune system especially T-lymphocytes. **Objectives:** This research aims to explore the effect of ascorbic acid on adaptive immune system. **Methods:** T-lymphocytes harvested from spleen, lymph nodes, and thymus of young female mice were cultured with RPMI 1640 media supplemented with 10% FCS, L-glutamine, HEPS, P/S and gentamycin. Cells were treated with ascorbic acid concentrations of 25 $\mu$ M, 100 $\mu$ M, and 500 $\mu$ M, and activated by lipopolysaccharide. T-cell activation was investigated via MTT assay and real time polymerase chain reaction (RT-PCR). **Results:** Flow cytometric analysis showed a small induction of CD8 positive lymphocytes. MTT assay analysis at 620 showed a superior effect of ascorbic acid at doses 25 $\mu$ M and 500 $\mu$ M in spleen cells. RT-PCR analysis showed

40% increase in interferon gamma levels at 25 $\mu$ M. And a 3.5 folds increase of TNF- $\alpha$  in Ascorbic Acid treated cells. **Conclusion:** Ascorbic Acid demonstrated a weak immune-stimulatory effect when it was given in the physiological range reflected by the amount of cell viability on MTT assay and cell cycle analysis.

**Keywords:** Ascorbic Acid, T-cell Activation, immunomodulation

13 **Examining Universal Health Coverage through Specific Indicators to Monitor Progress: A Global to Local Standpoint.**  
Risphah Joleen Walumbe.

**Introduction:** The importance of Universal Health Coverage (UHC) as a tool to combat poverty has been made clear and tackling inequity has been outlined as the underlying message of UHC. For those seeking healthcare, a rise in the number of people pushed into poverty and for those already living below the poverty line pushing them further below, healthcare financing systems play a critical role in ensuring this is avoided. Of the people able to access care worldwide 150 million are faced with catastrophic health expenses and a further 100 million are pushed into poverty as estimated in a 2013 report. The question has now moved from why should we strive for UHC to how can it be achieved. **Methods:** Literature review. **Results:** Progress towards Universal Health Coverage (UHC) has been notable over the past thirteen years and tracking of this progress has been made possible because of the core indicators. Indicators are selected by putting various factors into consideration including prior measuring tools readily available in all countries and that these indicators should include the full spectrum of service from promotion to palliation. With regards to financial protection, it is viewed that although not complete, Out-Of-Pocket-Spending (OOPS) on healthcare is a good indicator of coverage such that high OOPS has been proven to reduce health seeking behavior. Looking at OOPS through disaggregated data, a study of 51 countries reveals that the poorest of communities are paying for healthcare. Factors to consider aside from socioeconomic status include, gender, geographical location and education level. As a recently concluded demographic health survey revealed in Kenya, 82% of women and 79% of men do not have health insurance. Health insurance is more common in men and women above the age of 25, in those with higher levels of education, those who reside in urban areas and the wealthier in the population. Among many challenges cited in financing healthcare in Kenya, it was noted that high levels of poverty (approximately 46% of the population) and high levels of OOPS in the context of a weak risk pooling system played a major role. OOPS rates have minimally declined globally from 35.6% in 2002 to 32.1% in 2013. Regionally, Middle East and North Africa are at 33.8% OOP while Sub-Saharan Africa has a 36.1% as of 2013. A major challenge forecasted moving forward in monitoring and achieving UHC include noncommunicable diseases (NCDs). Assessing the Global Disease Burden (GDB) in 2012, 55% is attributable to NCDs having risen from 46% in the year 2000 and of these, 28 million of the 38 million deaths caused by NCDs annually are in low and middle income countries. **Conclusion:** should be based on the two underlying currents of Universal Health Coverage. That is, financial protection and essential health services. Investments must be made to scale up quality data collection that drives decision-making. Healthcare financing also plays a pivotal role in achieving Universal Health Coverage. This will aid in the accurate assessment of progress towards Universal Health Coverage. Examining Universal Health Coverage through specific indicators to monitor progress: A Global to Local standpoint.

**Keywords:** Universal Health Coverage, Out of Pocket Spending, Global Burden of Disease, Non-Communicable Diseases.

14 **Role of TGF- $\beta$  and HIF-1 $\alpha$  Signaling in T-cell Activation.**  
Abd Al Wahab A., Shaye A., Jarrahi A., Doudin A., Nugud S., Cyprain F.

**Introduction:** Hypoxia-inducible factor 1-alpha (HIF-1-alpha) is a factor considered as the master transcriptional regulator of cellular and developmental response to hypoxia. The deregulation and

overexpression of HIF1A by hypoxia is implicated in cancer biology. Transforming growth factor beta (TGF- $\beta$ ) is a secreted protein that controls proliferation, cellular differentiation and other functions in most cells. It is a type of cytokine which plays a role in immunity and cancer. The purpose of our experiment is to study the effect of these molecules in T-cell activation. **Methods:** T-lymphocytes harvested from spleens, lymph nodes and thymus of 6-8 weeks old, healthy, female mice. T-lymphocytes cultured in 96-well plates with RPMI 1640 media supplemented with 10% FCS, L-glutamine, HEPS, P/S and gentamycin. The T-lymphocytes were incubated at 37 $^{\circ}$ C for 48 hours after treatment by TGF along with activation by CD3 and CD28. Cells were incubated in normoxic and hypoxic situations. T-cell activation was investigated via flow cytometry by looking at early activation molecules such as CD44, CD62L, CD25 and Fas molecule. **Results:** Flow cytometric analysis showed down regulation of CD44 in activated CD4 positive T cells cultured in hypoxic condition, similar results were seen with CD62L. TGF- $\beta$  and hypoxia had no effect on Fas molecule in activated T cells though it was activated by T-cell receptor (TCR) mediated activation. CD25 was down regulated in both CD4 and CD8 positive lymphocytes. A synergistic effect of Hypoxia and TGF- $\beta$  in down-regulating CD69 expression on CD8 T lymphocytes. **Conclusion:** Hypoxia and TGF- $\beta$  showed a synergistic effect decreasing the T cell activity, but the individual effect of each one of these factors showed a potential induction on T cell activity. This might have a great impact in learning more about the cancer microenvironment which might lead to more targeted therapy of solid tumors.

15 **Role of Trait Emotional Intelligence in Academic Performance of School Children.**  
Luqman Munawar Khan.

**Introduction:** Emotional intelligence is the ability to use emotional information to guide thinking & behavior. Trait Emotional Intelligence refers to an individual's self-perception of their emotional abilities. Previous studies have shown a positive relation of trait emotional intelligence with academic performance thus suggesting that improvement in Emotional Intelligence of students through curricular reforms may play an important part in development of well rounded personality. Unfortunately studies showing association of Trait Emotional Intelligence with academic performance are scarce in local literature therefore the current study was planned. **Objectives:** To determine the relationship between Trait Emotional Intelligence & Academic performance in school children between 8-12 years of age. **Methods:** After ethical approval from Foundation University Ethical Review Committee and permission from school authorities 1050 public school children between 8-12 years of age who were attending the school for the past one year were included in the study. Sampling Method which was used was convenience sampling. Trait Emotional Intelligence Questionnaire Child Short Form comprising of 36 short statements was explained and distributed. Trait Emotional Intelligence score (%) was divided into 3 categories below 30%(below average),30-70%(average),above 70%(above average).The previous year annual exam grades (%) of the students were compared with their Trait Emotional Intelligence score after categorizing into 60-70%(C),70-80%(B),80-90%(A),above 90%(A+). **Results:** Out of 1050 students, 790 students completed the questionnaires. Students exam scores and Trait Emotional Intelligence scores were entered in SPSS(version 21.0). Descriptive statistics were calculated. Chi-square test was used to compare academic performance with the Trait Emotional Intelligence score which was statistically significant (p-value 0.025). There was a weak correlation (r=0.175) between both academic performance and Trait Emotional Intelligence score. 270,310,135 & 75 students fell in A+, A, B & C grades respectively. In Trait Emotional Intelligence scores 0,440,350 students fell in below average, average & above average category respectively. **Conclusion:** Study showed a positive relationship between Trait Emotional Intelligence & Academic Performance. Conclusive results could be obtained if the study is done at a larger scale in multiple setups & over different time periods.

16 **Oral or Intravenous Antibiotic as The Initial Treatment for Urinary Tract Infection (UTI) in Children.**

Arina Dina Husda Prameswara, Eka Laksmi Hidayati

**Introduction:** Urinary tract infection is one of the most common pediatric infections that may carry special significance morbidity. The recommendation of standard management is hospitalization for intravenous antimicrobials. However hospitalization may increase the risk of nosocomial infection, cost of therapy, and uncomfortableness. The availability of oral antimicrobial, that have the same potential with IV antimicrobial, may be considered to be given as initial therapy in child with UTI. **Objectives:** This report has objective to obtain the evidence regarding the efficacy between oral and intravenous antimicrobial as the initial treatment in children with UTI to eliminate the bacteria in the urine. **Methods:** The literature searching was done from 5 databases on November 2015 from Pubmed, Cochrane, EBSCOHost, Proquest and Google Scholar. The study designs are limited to Metaanalysis and RCT. Two articles, with total of 808 subjects, are chosen based on inclusion criteria, then critically appraisal was done used criteria from Center of EBM, Oxford University. **Results:** Hoberman et al (using 306 subjects) found that there was no significance difference (p=0.28) of the efficacy using oral antibiotic than intravenous with CER 0,088; EER 0,057; RRR 0,335; ARR 0,033 [(-0,03)-0,09] and NNT 33. Montini et al (using 502 subjects) also found there was no significance difference (p>0,05) between the administration of antibiotic as the initial treatment for UTI in children, with the score CER 0,0004; EER 0,005; RRR -0,25; ARR 0,001[(-0,009)-0,0011]; and NNT 1000. **Conclusion:** In conclusion, oral antibiotic has the same efficacy with intravenous antibiotic, as the initial treatment of UTI in children, to eradicate the bacteria in the urine.

**Keywords:** Urinary Tract Infection, Children, Antibiotics, Intravenous.

17 **Mental health status among medical students: A priority research area.**  
M. Tasdik Hasan, Naima Afroz, Anindita Ghosh

**Introduction:** Medical education across the globe is perceived as being inherently stressful and as a result poor mental health or depression can occur. Therefore it becomes imperative to study the overall mental health status and particularly prevalence of depression among medical students as these constitute neglected, less financed, under diagnosed & under treated public health problems in Bangladesh. **Objectives:** The study was undertaken with the general objective to assess the overall mental health status of medical students in Bangladesh. Specific objectives were to assess the magnitude of depression, suicidal tendency, sleeping pattern and to relate the relevant socio demographic characteristics with different parameters of mental health status. **Methods:** This Cross sectional study was done in two medical colleges of Dhaka where one was government and one private medical college in between July 2013 to December 2013 involving 227 medical students from 1st to 5th year. By convenient sampling technique data were collected by a pre tested structured interviewer-administered questionnaire and analysis was done by SPSS 18.0 version. The questionnaire was formed by using the standard and validated PHQ-9 to assess MH status and ICD-10 criteria of depression to identify different types of depression among the respondents. **Results:** Among 221 students included in the study, poor mental health status and depression was found in 33.5% and 38.9% of subjects where in 3.6%, 14.5%, 20.8% medical students were with severe, moderate and mild degree of depression respectively. 44.8% respondents had adequate sleep in a normal day where rest are either insomniac or hypersomniac. 17.6% medical students had suicidal tendency or attempted suicide at least for once. There was statistically significant association between poor mental health status with age group of less than 22 years and initial academic study year (1st to 3rd of MBBS). **Conclusion:** The results revealed a clear picture of poor mental health status, prevalence of depression in junior medical students marginally more in males & associated with academic year of the study. So, medical students should be given care and support in order to promote resilience and personal fulfillment, and for enhancement of professionalism and patient care.

**Keywords:** medical student, mental health, depression, suicidal tendency, medical education.

- 18 **Exploration of Psycho-social Institutional Initiatives and Interventions in reducing Post Disaster Mental Health and Post Traumatic Stress Disorders (PTSD) in a Cyclone Affected Area of Coastal Bangladesh.**  
M. Tasdik Hasa, Gourab Adhikary, Sultan Mahmood, Nowshin Papri, Abul Kalam Azad & Mahbuba Nasreen.

**Introduction:** The Government of Bangladesh has identified the coastal zone as 'vulnerable to adverse ecological processes' and German watch 2014, CRI declared Bangladesh as the 5th ranked country in climate risk. Every year Bangladesh is attacked by cyclone creates huge impact on physical & mental well being but this psychological or mental health issues related to disaster is still a hidden & neglected topic in Bangladesh. **Objectives:** The main purpose of this study was to explore the psycho-social institutional initiatives and interventions in reducing post disaster mental health and post traumatic stress disorders (PTSD) in a Cyclone Affected village of Coastal Bangladesh. **Methods:** The study was an exploratory study where we have conducted a social mapping, KI with different stakeholders & IDI with affected people for identification of location of health care infrastructure, NGOs, local volunteers related to health care delivery, informal health care providers & resources related to mental health care. 10 local stakeholders were involved in KI & we took 10 in depth interviews of affected people by a prepared guideline. The interviews were recorded in the digital recorder and then were transcribed. Composed interviews were coded by using atlas.ti software and then a matrix was prepared to analyze data. **Results:** This study revealed that natural disaster like cyclone has many psychological impacts on population. People can be suffered by post traumatic stress disorder, anxiety, panic, acute stress reaction, sad feelings & even suicidal thoughts due to cyclone. Children and female are more vulnerable to that event. Lack of awareness is one of the main reasons to overlook the mental health problem related to cyclone. The government & NGOs as well have no specific plan of action to address these issues. Another issue is the existing professionals are not been utilized properly due to lack of knowledge, lack of awareness. There is a visible gap in thinking about finding of an alternative way to give the people proper psycho social service/support by necessary initiatives & interventions. **Conclusion:** Cyclone affected coastal people, especially women & children are more vulnerable towards mental health issues & often been out casted due to several sociocultural reasons. To make a good environment to implement mental health program for the population a strong mental health policy is needed which will be a separate and full unit in national health policy under the health ministry.

**Keywords:** Psycho-social interventions, PTSDs, Coastal area,

- 19 **The Antiviral Effect of Isoamyl Gallate to the Replication of Dengue Virus In Vitro.**  
Muhammad Akbar, Muhammad Rayhan, Asri Salima Ridwan.

**Introduction:** The prevalence of Dengue Hemorrhagic Fever (DHF) still high in the world, especially in Indonesia. In Indonesia, there were 45,85 / 100.000 citizens of dengue virus (DENV) infection with the mortality rate of 0,77%. Until now, no specific and effective therapies to cure DENV infection. Previous study showed that isoamyl gallate has effect of antiviral and antifungal activities. The effect of isoamyl gallate to DENV was needed to evaluate. **Objectives:** The purpose of the research was to evaluate the effect of isoamyl gallate to DENV in vitro. This research is important because it will help medical field in finding specific and effective treatment for DHF as disease that has high prevalence in the world, especially in tropical countries such as Indonesia. **Methods:** The study was experimental study using huh7it-1 cell. In vitro The toxicity of the isoamyl gallate was examined by MTT assay. The infectivity of DENV was examined by focus assay. The DENV was treated with various concentration of isoamyl gallate (80, 40, 20, 10, 5, and 2.5 µg/ml). The infectivity and cytotoxicity data were analyzed by independent T test. **Results:**

DENV was significantly decreased after treated with isoamyl gallate compared to those treated with DMSO as control (p=0.004). Result from the focus assay showed that the average infectivity after treated with isoamyl gallate at concentration of 80 µg/mL was 0%. Using the linear function acquired from plotting average infectivity against isoamyl gallate concentration, we found that the value of IC50 was <2.5 µg/mL. From the MTT, we found that isoamyl gallate also had a low cytotoxicity. The cell viability decreased to 72.6% when treated with isoamyl gallate at concentration of 80 µg/mL. The CC50 value of Isoamyl gallate was 146.7515 µg/mL. Based on the IC and CC value, the selectivity index was 58.7. This show that isoamyl gallate has the high potency to be used as an antiviral. **Conclusion:** With high value of CC50 and low value of IC50, we concluded that isoamyl gallate has potency as DENV antiviral. Further study was needed to evaluate isoamyl gallate as DENV antiviral in vivo.

**Keywords:** Dengue Hemorrhagi Fever, Dengue Virus, Antiviral, Isoamyl Gallate

- 20 **The Fate of Mutant Myocilin in Primary Open Angle Glaucoma: A Literature Review**  
Poundra Adhisatya Pratama, Rafli Nur Febri, Putri Pamulani

**Introduction:** Glaucoma affected about 66.8 million people worldwide. Primary open angle glaucoma (POAG) contributed to 70% cases of glaucoma. Of 70 types of genetic mutation involvement in POAG, mutant myocilin as a product of MYOC gene mutation found in 2-4% cases of Primary Open Angle Glaucoma. An exact pathogenesis of how mutant myocilin induced POAG is important for further intervention and treatment, meanwhile it remains unknown. This literature review aimed to describe the pathogenesis of POAG related to mutant myocilin. **Methods:** This was a literature review using electronic database of MEDLINE published in the English language between January 2011 and December 2015. The related articles were found from electronic databases for literature presented in vitro experimental studies by keyword search using terms "myocilin" and "glaucoma". **Results:** There were found 3 studies for this literature review : Qiu Y et al (2014) explained the cellular processing of myocilin which has been mutated, Suntharalingam et al (2012) and Stothert AR et al (2014) explained the effect of inhibiting the chaperones glucose-related-protein 94 (Grp94) to wild type and mutant myocilin clearance. **Conclusion:** Reviewed literatures revealed that turnover of mutant myocilin involved autophagy pathway, rather than ubiquitin-proteasome and lysosomal pathways which was involved in turnover of non-mutant Myocilin. Grp94 was found as a product of Unfolded Protein Response to mutant Myocilin. Grp94 bound mutant myocilin and directed its degradation to Endoplasmic Reticulum-Associated Degradation (ERAD). ERAD pathway degraded mutant myocilin inefficiently, resulted in accumulation of mutant myocilin. The accumulation of mutant myocilin in Trabecular Meshwork (TM) cells led to ER stress-induced cell death. TM cell death interfered the outflow of aqueous humour therefore increased intra-ocular pressure. Knowledge of the mutant myocilin involvement in POAG can help further investigation strategies for myocilin-related glaucoma. In summary, the bound between Grp94 and mutant myocilin induced the death of TM cell and led to the development of POAG..

**Keywords:** POAG, mutant myocilin, GRP94

- 21 **How Medicine Academics See The Pbl Method For Medical Training?**  
Azevedo, C.b.s., Lopes, A.c., Prudente, L.a.

**Introduction:** The Problem Based Learning method (PBL) provides the medicine student more independence in the formation of knowledge. The student ceases to be a mere spectator and becomes active in academic activities. In addition, humanized view of this method graduate doctors to know how to have a good doctor-patient relationship, since the human being can be analyzed in a biopsychosocial way. Thus, this study aims to understand the positive aspects of the PBL method for medical students at the Catholic University of Goiás (PUC) and the University of Rio Verde (UNIRV), thus realizing how

modern medicine has improved the technical teaching and learning, always seeking to meet the needs of the patient, ethically and humanely with respect for the differences. **Methods:** We conducted a literature review on the subject, using PubMed and SciELO as search engines. In addition, a questionnaire was applied to medical students from the third period of the course, with questions about the PBL method, since they lived for a year in such a reality, which was previously not present in their lives. It is noteworthy that there was confidentiality of personal information of research participants, and all participants signed an Informed and Clear Consent ("Consentimento Livre e Esclarecido" - TCLE) before entering the questionnaire. Finally, the data were analyzed using Epi Info, a very sophisticated program for data analysis. **Results and Conclusion:** After analysis of the data has been identified that over 50% of the students of the two universities agree that are positive points of the PBL method: early introduction of practice, since the first period of the course; Best university infrastructure due to the active method; Problematic theory; Better use of subjects taught, as practical help in learning; enhanced Doctor-Patient relationship with the work of communication; Dynamic teaching-learning that values the independence of academic. These results prove that the PBL method is crucial for a more humane and critical medical education in the face of the current needs from reality. Thus, scholars have not only education but also research and extension in their undergraduate degree.

**Keywords:** Medical Education, PBL method, biopsychosocial mode.

- 22 **Active Methodologies And Its Role In The Formation Of A Holistic Vision On The Health-Disease Process**  
Louise D'abadia Morais; Yael Porto Silva; Ana Paula Brandão Silva; Luísa Ribeiro Koch; Ébony Lima Dos Santos; Rafael Rocha Luzini.

**Introduction:** The curriculum of the Catholic University of Goiás (PUC-Goiás) Medicine course has a subject called Theoretical and Practical Integrated Case (CETPI), based on Paulo Freire's methodology, which uses the Arch of Charles Maguerez. Students collect several case reports on their practical activities in the Santa Casa de Misericórdia de Goiás (Teaching Hospital), Basic Health Care Units and Integrated Health Centres - CAIS. It was selected a case of greater interest. After reading and analyzing the chosen case, the identification is a main theme and it's topics. Then, weekly meetings take place in subgroups with 5-7 students and a teacher, to discuss the topics of the theme or topics of the week when, according to research carried out by each student, the group socializes their literature reviews and analysis based on scientific evidence. After this period of studies on the topics analyzed, subgroups are gathered in order to compose a single group, holding a general discussion on the knowledge gained about the studied subject. Then, students must propose an action that must be implemented in order to minimize the damage to society triggered by that problem studied. The activity should contribute in some way to the prevention and health promotion, and has the intent to transform the reality experienced by affected individuals. **Objective:** Understand how CETPI discipline contributes to the formation and autonomy of medicine academics as well as to build a holistic view of the health-disease, which involves not only intrinsic factors from the individual, but mainly social, economic and cultural factors. **Methods:** During the first meeting, students are divided into subgroups with 5-7 people and are designed 1-2 teachers per subgroup to act as mediators of the discussion that will take place in the coming meetings. The main theme is chosen by vote at the first meeting from the reading of case problem and the subsequent identification of guiding principles to each case by subgroup. Afterwards, there is a vote on the topics, which shall relate to the main theme without fail, in order to assist the understanding on the biological and psychosocial levels. Subsequent meetings are intended to discuss the topics and exchange knowledge gained by reading articles individually. In every meeting, after thorough discussion in subgroups, these are collected and students undertake a general discussion with a single large group. After each meeting, the students perform a self-

assessment on their participation. At the end of the discussion of the topics, at the last meeting, each subgroup must submit a proposal for action aimed at the community, from where the main theme was taken. The action is then assessed by teachers. **Results:** The introduction of CETPI in the curriculum at PUC Goiás, at all times of the medical school, contributed to the strengthening of a critical attitude of students by encouraging the active search for knowledge, as proposed by the PBL method (Problem Based Learning), adopted by the university, and the new curriculum of the medical school. The formulation of the main theme and its topics promotes a thorough discussion grounded in the previous reading of the chosen subject, which develops in students the ability to select relevant information and sources of information not only for discussion within the CETPI but can also be applied in Community activities carried out during the course of Medicine. The action proposed at the end of the meetings should be directed to the community from which it was removed the case-problem, in order to promote health, positively influencing the target population. Students are involved in all stages of action, from planning to execution, which strengthens the student's relationship with the community and contributes to a more humanized and scientifically based training. **Conclusion:** CETPI presents characteristics related to current investigative methodology in medical education and acts not only in promoting critical discussion of issues found in the community in which students are entered, but also the insertion of the student community through feedback action and encouraging active search for knowledge based on scientific evidence. Promoting a humane education and encouraging the development of a holistic view from the student about the reality in which it is located are closely related to what is recommended for this course at PUC Goiás.

## Abstracts of Malaysian Medical Student Summit (MMSS)

- 01 Factors Influencing The Delivery Of Thrombolysis To Patients With Acute Ischemic Stroke.**  
Lim Pei Shan; Prof. Helen Rodgers; Dr. Darren Flynn  
Newcastle University Medicine Malaysia

**Background:** Acute ischemic stroke afflicts approximately 110,000 people annually in England and it is a major cause of morbidity and mortality. Alteplase, a thrombolytic drug, is licensed in Europe for the treatment of ischemic stroke within 4.5 hours of symptom onset. There are significant benefits highlighted in March 6, 2004 issue of the Lancet that confirms the clinical effectiveness of alteplase among stroke patients in terms of reduced length of hospital stay and institutionalisation despite an increased risk of intracerebral haemorrhage. However, thrombolysis rates still vary across all stroke units in the UK. Hence, this study is to identify the factors, which influence the delivery of thrombolysis in terms of patients' clinical features and health-seeking behaviours in order reduce unwarranted variation and identify target areas for improvement in stroke care. **Aims:** To compare the clinical features and health-seeking behaviours of ischemic stroke patients who do and do not receive thrombolysis. To explore the outcomes of stroke patients who do and do not receive thrombolysis. **Methods:** Data analysis of 2371 stroke patients admitted to Northumbria Healthcare NHS Trust between 1.1.2013 till 15.06.2015 were obtained from the Sentinel Stroke Audit Programme (SSNAP). SSNAP is a national clinical audit, which collected data from 80,000 stroke patients since January 2013. **Results:** Of the 2371 stroke patients, those who received thrombolysis were younger age group (74.5±8.5) vs (77±10) years, (P=0.008). Thrombolysed group had a lower pre-stroke disability measured using "Modified Rankin score" (86.7% vs 79.1%). Thrombolysis was delivered to patients with a moderate stroke severity compared to mild strokes based on the NIHSS stroke scale. Thrombolysed patients had a shorter stroke-onset-to-thrombolysis time (3.67 vs 4.08) hours, (P=0.05) compared to non-thrombolysed patients. However, patients' gender, comorbidities (heart failure, hypertension, diabetes) were not significant factors for the delivery of thrombolysis. **Conclusion:** Patients with moderate stroke severity, lower pre-stroke dependency, shorter stroke-onset-to-thrombolysis and a younger age group were more likely to receive thrombolysis for acute ischemic stroke. Patients who received thrombolysis had a better outcome in terms of level of disability and length of hospital stay.

- 02 Effect of Music on Cognitive Performance of Young Adults**  
Chu Hui Xin, Leong Kok Foo, Afiqah Athirah, Harkiran Kaur, Chew Way Jin, Noranita binti Ekhwan  
MMMC (Manipal)

**Introduction:** The effect of music on various aspects is debatable. This study was thus conducted to investigate the effect of background rock lyrical music on cognitive performance. **Methods:** A randomised controlled trial was conducted on 42 students (21 in intervention group, 21 in control group), aged 21-25 years old, in MMMC, Muar Campus, Malaysia. Cognitive performance was assessed by Wonderlic Personnel Test (WPT). Data was processed by using Microsoft Excel 97-2003 and analysed using Epi Info. Chi square test, unpaired t-test and Mann Whitney U test were used. A p-value < 0.05 was considered statistically significant. **Results:** Intervention group attempted significantly fewer questions in WPT (mean=16.1), compared to the control group (mean=19.3) (p < 0.05). The mean number of correctly answered WPT questions is 11.5 ± 3.3 in the intervention group, and 14.3 ± 3.3 in the control group (p < 0.05). **Conclusion:** Rock lyrical music significantly decreased cognitive performance among young adults. Thus, it is advisable to not listen to rock lyrical music while performing complex cognitive tasks.

- 03 Cd34 Antibodies Combined With Sirolimus Eluting Stent Is A New Approach To Treat Coronary Artery Disease.**  
Bryan Tan E Xin  
I.M. Sechenov First Moscow State Medical University

**Background:** Drug eluting stents are widely used in Percutaneous Coronary Intervention (PCI) for Coronary Artery Disease. They are superior to bare metal stents in terms of cardiovascular outcome but can be complicated by stent thrombosis. American scientists showed that CD34 antibodies that captures circulating CD34+ endothelial progenitor cells have a pro healing effect on coronary arteries which will prevent stent thrombosis. Therefore, I hypothesised that the combination of CD34 antibodies with Sirolimus in a stent for PCI will possibly prevent stent thrombosis, limit restenosis and decrease major adverse cardiac events to a greater extent compared to drug eluting stents. **Methods:** Two groups of patients with de novo coronary artery stenosis randomised to implantation of 'Sirolimus eluting stents combined with CD34 antibodies' or Paclitaxel eluting stents. The endpoints were the degree of neointimal hyperplasia and occurrence of major adverse cardiac events. **Results:** Intravascular Ultrasound revealed a numerically lower neointimal hyperplasia volume for 'Sirolimus eluting stents combined with CD34 antibodies' in comparison to Paclitaxel eluting stents. The occurrence of major adverse cardiac events was 8.9% for Sirolimus eluting stents with CD34 antibodies and 10.2% for Paclitaxel eluting stents in a 1-year followup. No stent thrombosis was reported in either group. **Conclusion:** In conclusion, 'Sirolimus eluting stents combined with CD34 antibodies' were shown to lower neointimal hyperplasia and major adverse cardiac events to a slightly higher extent compared to Paclitaxel eluting stents. The combination of CD34 antibodies with Sirolimus in stents seem to be a promising way to reduce complications and improve survival in patients with Coronary Artery Disease who undergo Percutaneous Coronary Intervention. Future clinical trials will be needed to confirm the superiority and efficacy of this novel approach.

- 04 Impostor Phenomenon Among Medical Students In A Malaysian Private Medical School**  
Muhammad Yassin Bin Ikbaal, Nor Azzam Bin Ismail, Nurhazirah 'Aqilah Binti Salim Musa, Fateen Nadhira Binti Ismail, Gaajeen Perumal, Jacinta Toimin  
MMMC (Manipal)

**Background:** Some medical students often doubt their ability to become good doctors in the future. Impostor phenomenon is described as an "internal experience of intellectual fraudulence" among high achievers. This study sought to determine the prevalence of impostor phenomenon among medical students and how impostorism is correlated with other psychological distresses namely anxiety, depression and low self-esteem. **Methods:** This is a cross sectional study. Demographical questionnaires with Clance Impostor Phenomenon Scale (CIPS) to measure impostorism and other scales to measure depression, anxiety and self-esteem were distributed to all 4th year medical students in Melaka Manipal Medical College, Muar campus. A score of 62 was set as the cut off value to classify someone to be "imposters" using CIPS. **Results:** 256 students completed the questionnaire. 44% female and 48% male students scored as 'impostors' with no significant difference between the two gender. Positive correlations were noted between impostor phenomenon with depression (rho=0.42), anxiety (rho=0.41) and low self-esteem (rho=0.56). Impostors significantly have stronger intention of quitting medical school (p < 0.001) and felt that they were not ready to cope with challenges during housemanship (p < 0.05). **Conclusion:** Almost half of the medical students are impostors. They suffer greatly from psychological distress and are not confident to face the challenges during their housemanship. They also have stronger intention of quitting this course. It is necessary for medical colleges especially the lecturers to acknowledge this feelings and help the students to cope with it to ensure smooth transition from medical school to housemanship.

- 05 Relationship Between Parental Bonding And Psychological Distress Among Medical Students**  
Nurhazirah 'Aqilah Binti Salim Musa, Nor Azzam Bin Ismail, Muhammad Yassin Bin Ikbaal, Fateen Nadhira Binti Ismail,

Gaajeen Perumal, Jacinta Toimin  
MMMC (Manipal)

**Background:** Relationship between a child and the parents do have strong association with various psychological distress. However it is also important to see if the perceived parental bonding have any influence on psychopathology of adults mainly the medical students. This study aims to find out if there is any relation between parental bonding and the psychological distress among medical students and to determine if there is any difference in the perceived parental bonding between various races in Malaysia. **Methods:** This is a cross sectional study. Questionnaire with demographical questions, Parental Bonding Instrument and scales to measure depression, anxiety and self-esteem were given to all 4th year medical students in Melaka-Manipal Medical College, Muar campus. The perceived parental bonding was then classified as low or high care and low or high protection using a standard cut off point for both father and mother. **Results:** 256 students completed the questionnaire. For paternal parental bonding, Affectionless control (High protection, low care) and Affectionate constraint (High protection, high care) were significantly associated with depression, anxiety and low self-esteem (p<0.05) as compared to Optimal bonding (low protection, high care). For maternal parental bonding, Affectionless control group was significantly associated with the various distress (p<0.05) when compared to Optimal bonding. Indian mothers were more likely to be perceived as Affectionless control when compared to Malay mothers (p<0.05). **Conclusion:** There are significant association between perceived parental bonding and the various psychological distress among medical students. It is therefore important for parents to give optimal care and support for their child to prevent their child from suffering from those distress in the future.

- 06 Relationship Of Stress And Life Satisfaction Among Medical Students**  
Tan Xin Hui, Umar bin Mohd Ramzan  
MMMC (Manipal)

**Background:** It has been reported that the stress level among medical students was higher compared to the students from different courses and also from the general population. This fact makes us wonder if medical students are actually happy and how the increased stress affects their happiness. In this regard, happiness or subjective well-being can be measured in terms of life satisfaction which measures how people evaluate their life as a whole rather than their current feelings. Since there is relatively little research done in Malaysia to investigate the relationship of perceived stress and life satisfaction among medical undergraduates, the present study was conducted to identify the association between stress and life satisfaction and also to correlate other factors that affect life satisfaction among medical students. **Methods:** A cross-sectional study was conducted on 265 medical students of Melaka-Manipal Medical College at Muar Campus. Self-administered questionnaires which consist of socio-demographic details, Quality of Life Enjoyment and Satisfaction Scale (14 items) and Perceived Stress Scale (4 items) were distributed to participants via universal sampling. Data were analysed using Epi Info version 7 and SPSS version 19 software. **Results:** 246 medical students participated in this study (a response rate of 92.8%). There was a significant negative correlation between stress and life satisfaction (r = -0.366, p < 0.001). Regression analysis on stress and life satisfaction also showed a significant result. **Conclusion:** The findings of the present study indicate that there is a need to develop intervention programs aimed at improving coping skills of the medical students in response to stress so that they enjoy greater satisfaction in life. This will lead to better academic performance, more efficient learning and reduce stress-related health problems.

- 07 Should Physician Assisted Suicide Be Accepted In The Practice Of Medicine? A Literature Review.**  
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**Objective:** With life expectancy increasing due to advancements in modern medicine, the prevalence of chronic illnesses have also increased, hence some have argued for the need for Physician Assisted Suicide (PAS) to release these patients from their sufferings. This literature

review aims to investigate the intricacies of PAS by considering both arguments for and against PAS. All arguments will be analysed unbiasedly to formulate a better understanding of PAS. **Method:** A literature search was conducted using the online databases (PubMed and Philpapers) for the selection of articles relevant to the aim of this review. To optimise the quality of findings, a pre-determined set of inclusion and exclusion criteria were applied. **Results:** A total of 21 papers were included in the final analysis. The type of papers chosen ranged from ethical arguments, court cases, audits and systematic review. **Discussion:** A total of 4 common themes were identified and extracted from the papers and were discussed and critically analysed. The 4 common themes found were (1) respect for autonomy, (2) protecting the vulnerable, (3) right to die, and (4) the role of the doctor in PAS. Concepts surrounding mental capacity, national legislations, safeguards, and the slippery slope argument were also considered in the discussion. Statistics on PAS were obtained from audits conducted in the various countries which have legalised PAS. **Conclusion:** PAS is a real, multifaceted and complicated bioethical issue in this modern day and age. With both sides of the argument considered, it is difficult to determine which camp has the better argument as both have raised valid points which must be considered seriously. In conclusion, the findings suggests that PAS has a place in modern medicine however it is impossible at this point of time to determine to what extent the influence of PAS should go.

- 08 Awareness Of Organ Donation Amongst College Students In Melaka, Malaysia, A Cross Sectional Study**  
Seetha Jeganathan, Yashantha C.R. Jayakumar, Shailesh Anand Baskaran  
MMMC (Manipal)

**Background:** Malaysia is pioneering a pragmatic approach in trying to close the numerical gap between organ donors and recipients. Our study was conducted to assess the attitudes and knowledge of students in Melaka, Malaysia towards organ donation, their willingness to become organ donors and socio-demographic associations to willingness. **Methods:** The study conducted was an analytical cross-sectional study. Our questionnaire was based on the Give and Let Live Survey from the United Kingdom, with some modifications to tailor it to Malaysian students. The data we collected from the 4 different streams of students included several different variables such as Qualitative - nominal (age, gender, ethnicity, religion, Course); Quantitative (Knowledge scores, motivation score, attitude scores) and Dichotomous (Blood donation history). We assessed the evidence and its strength via the use of independent t-test, ANOVA and chi square. **Results:** There was a significant relation between people who had donated blood before and those that were willing to register as organ donors (p value=0.006). It also showed that those who had previously donated blood were less likely to believe in common misconceptions about organ donation (p value=0.00). Similarly the scatter graph between Knowledge and Attitude showed that those with better knowledge about organ donation were more willing to register as organ donors, with a positive correlation curve. **Conclusions:** To have an improved response towards Organ donation from students in Malaysia, it is necessary to amplify our efforts in educating and invalidating myths among the students and the public in general. With this, we also hope to boost the number of those willing to donate blood and ultimately to aid Malaysia in ending the donor recipient numerical discrepancy.

- 09 Profile Of Acute Generalized Exanthematous Pustulosis (Agep) Among Patients In Hospital Sultanah Aminah Johor Bahru (Hsajb)**  
Der Yi Shan, Joel Lai Nai Liang, Evelyn Yu Sing Ee, Yap Xiao Ling, Choon Siew Eng  
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**Introduction:** Acute generalized exanthematous pustulosis (AGEP) is a rare, acute cutaneous reaction characterized by the development of non-follicular, sterile pustules on an edematous and erythematous background. Hallmarked by fever and leukocytosis, AGEP is commonly known to be drug-induced. The cutaneous manifestations typically appear within a few hours to days of drug exposure and upon drug withdrawal, resolve within one to two weeks. To date, no studies have documented the demographic characteristics of AGEP



in Malaysia. Objective: To determine the demographic characteristics of patients with AGEP, the drug(s) implicated, mode of presentation and clinical course. **Methodology:** A retrospective review of all AGEP cases seen in Hospital Sultanah Aminah Johor Bahru (HSAJB) between 2001-2015. **Results:** In total, 21 patients with AGEP were identified- 16 females and 5 males (76% Malays, 9.5% Chinese, 9.5% Indians, and 5% Iban). The median age of patients was 40(IQR:26). The main culprit drug was amoxicillin(10 cases); followed by cloxacillin(3 cases), phenytoin(2 cases); carbamazepine, sulphasalazine, allopurinol, cephalixin, ceftriaxone, celecoxib, Habbatus Sauda [herbal product] (1 case respectively). The median onset time from drug exposure was 3 days(IQR:5.5). 48% of patients had documented fever, 52% pustular rash, 10% mucosal involvement, 5% purpura and 5% blisters. Leucocytosis was observed in 29% of patients and eosinophilia in 33%. Only 14% underwent confirmatory biopsy. Due to insufficient data, only 5 patients (24%) had a definite diagnosis of AGEP based on the Euroscar criteria, 6(29%) probable and the remaining 10(47%) possible. While most patients required admission(67%), almost all achieved complete recovery(86%). No complications were documented in any patients. **Conclusion:** AGEP was found to predominantly affect Malay females, with the median age of presentation being 40. The most common culprit drug was amoxicillin. The modes of presentation included fever, rash, pustules, mucosal lesions, purpura and blisters. Complete recovery was achieved in the majority of patients, without complications.

- 10 **Congestive Heart Failure With And Without Acute Coronary Syndrome: Clinical Correlates And Outcomes**  
Xin Yi Ler  
University Malaya

**Background & Objective:** Congestive heart failure complicated by acute coronary syndrome predicts unfavorable outcome. The objective was to compare the clinical correlates, medications and outcomes in those with and without acute coronary syndrome. **Methodology:** The study was conducted in a prospective manner involving all congestive heart failure patients admitting to University Malaya Medical Centre (UMMC) from 1st December 2015 to 31st March 2016. A questionnaire was formulated for the purpose of gathering clinical information from the patients through direct interview. Additional information was retrieved from 'i-pesakit', an online medical record of UMMC. Subsequently, respondents were followed up 1 month after primary admission via phone calls. **Results:** Of all the 320 patients admitted, 111 (34.69%) patients had acute coronary syndrome. Patients who presented with acute coronary syndrome were more likely to have history of ischaemic heart disease, dyslipidemia and arrhythmia (p<0.05 for all comparisons). Angiotensin Converting Enzyme inhibitors, antiplatelet and statin were also used more often in these group of patients. (p=0.010, p=0.000 and p=0.003 respectively). Compared with patients who did not present with acute coronary syndrome, patients who presented with acute coronary syndrome were at increased risk of hospital readmission (28.83% versus 13.88%, p=0.001). However, patients with acute coronary syndrome has shorter duration of hospital stay compared to non- acute coronary syndrome patients (4.44 days versus 6.45 days, p=0.016). **Conclusion:** Congestive heart failure patients presented with acute coronary syndrome differ from non-acute coronary syndrome patients in their baseline characteristics and short-term clinical outcomes. Future research is essential in understanding the possible risks, therapy strategies and long term outcomes to improve the prognosis of this high-risk group.

- 11 **A Study On The Demography, Aetiology, Precipitating Factor Of Acute Decompensation Of Congestive Heart Failure, Their Interrelationship And Association With Patients' Short-Term Outcome**  
Pheng Hian Tan  
University Malaya

**Introduction:** No studies have been conducted in ASEAN to study the short-term outcome of patients with acute decompensation of congestive heart failure (CHF). Short-term outcome is defined by the duration of hospital admission and the presence of rehospitalisation or death within 30 days from the primary admission. Understanding the relationship between demography, aetiology and precipitating

factors of decompensation with patients' outcome enables clinician to make accurate outcome prediction based on objective clinical finding and to adopt careful approach in managing high-risk patients. **Methods:** All 355 admissions with diagnosis of CHF in University of Malaya Medical Centre (UMMC), during a 4-month period were enrolled into this cohort study. Relevant information was retrieved from UMMC's online medical record and direct interview. Patients were followed up 30 days after discharge via phone. Associations were analysed with chi-square and relative risks were calculated. **Results:** CHF is more common among males, age group of 60-69 and Indians. Ischemic heart disease (IHD) is the main aetiology whereas non-compliance to fluid restriction, acute coronary syndrome (ACS) and infection are the major precipitating factors. Females and subjects with non-compliance to fluid restriction, ACS and infection have a higher risk of prolonged admission. The risk of readmission is higher in subjects with ACS and uncontrolled hypertension whereas the risk of death in the short term is higher in subjects with arrhythmia, worsening renal function and with more than 2 precipitating factors. Subjects aged above 75 and with underlying valvular heart disease have a higher risk of death in the short-term. **Conclusion:** Demography, aetiology and precipitating factors of acute decompensation of CHF have significant impact on patients' short-term outcome.

- 12 **Diagnosing Cardiomegaly Using Post-Mortem (PMCT) ; Sensitivity and Specificity of 3 Methods Based on Radiological Reading In The Case Of Sudden Death at National Institute of Forensic Medicine Hospital Kuala Lumpur (HKL), Malaysia**  
Prinisha Kanabathy, Dr.Siew Sheue Feng, Dr.Mohamad Helmee Bin Mohamad Noor, Mr.Lai Pooh Soon, Ghavinash Kanabathy  
I.M Sechenov Moscow Medical Academy

**Title:** Diagnosing Cardiomegaly Using Post-Mortem (PMCT) ; Sensitivity and Specificity of 3 Methods Based on Radiological Reading In The Case Of Sudden Death at National Institute of Forensic Medicine Hospital Kuala Lumpur (HKL), Malaysia **Introduction :** Cardiomegaly, a term used to describe any condition that results in an enlarged heart. Degree of cardiomegaly normally detected through cardiothoracic ratio(CTR). CTR method was commonly used on plain X-ray anterior-posterior(AP CXR) view and value of greater than 0.5 would determine cardiomegaly. CTR also could be calculated through Post-mortem Computed Tomography (PMCT),in particular helical CT (HCT). It is a bloodless method to determine cardiomegaly of a deceased body. HCT is believed to be more sensitive compared to the common X-ray (AP CXR) method. PMCT has an advantage due to its ability to image organs in situ and to perform multi-planar and three-dimensional reconstructions. The objective of this study was to determine the specificity and sensitivity of each method using PMCT cardiac image, as a tool to detect cardiomegaly. The test is then compared to the actual heart weight measured during autopsy (goal standard). **Methods and Materials:** This retrospectively study was conducted at National Institute of Forensic Medicine Hospital Kuala Lumpur (HKL), Malaysia. The study population consist of 127 (114 male, 13 female) human cadaver whom underwent PMCT, and subsequently autopsy. Cases were selected in terms of natural death. PMCT was conducted using Toshiba Aquilion 64 Multi-Slice CT. Test A,B and C are different method to calculate CTR. This methods are derived from the value of greatest transverse cardiac diameter, long and short axis of the cardiac, anterior posterior length of the cardiac and the greatest transverse thoracic diameter of each deceased.0.5% of the body weight (BW) is calculated and compared with the heart weight (HW) during autopsy. Value of HW >0.5% of BW is considered as cardiomegaly. ROC curve was done to evaluate each test. **Results:** Mean age of deceased (male,42.2,female 47.15). Results was tabulated with 95% confidence intervals (CI) of each methods. Method A,sensitivity:75%/CI:0.63-0.84,specificity 30.9%/CI:0.20-0.45 and accuracy of 0.559. Method B, sensitivity 29%/CI:0.19-0.41,specificity,69%/CI:0.20-0.45 and accuracy of 0.465.Method C, sensitivity 33.3%/CI:0.43-0.75, specificity,71%/CI:0.8-0.61 and accuracy 0.496. **Conclusion:** Method A is most reliable as it has highest value of accuracy of 0.559 with sensitivity(75%), higher than specificity(30.9%) The sensitivity is high because too many subjects have been diagnosed with cardiomegaly. Thus, compared to other methods, Method A CTR value are significant to diagnose cardiomegaly of a deceased.

## Abstracts of Student Research Unit Zazazig University (SRUZU)

- 01 **Awareness of Child Abuse among Egyptian Medical Students: A Cross Sectional Study**  
Esraa Ghanem<sup>1</sup>, Ahmed Elgebaly<sup>1</sup>, Ahmed Mokhtar<sup>2</sup>, Sara Ibrahim<sup>3</sup>, Muhammed Elgazar<sup>1</sup>, Yara Hazem<sup>3</sup>,Hussien Tarek<sup>1</sup>  
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**Background:** Child abuse is defined as any behavior directed towards a child, from a parent, guardian, care giver, other family member, or other adult, that endangers or impairs a child's physical or emotional health and development. It is a social illness of major proportion. Hence, it is important for every member in our community to be aware about Child abuse. **Aims:** We aimed at evaluating the level of awareness and knowledge of Child abuse among Egyptian Medical Students. **Methods:** We conducted a cross-sectional study among Egyptian medical students. Level of knowledge and awareness about child abuse was assessed using a validated questionnaire. The questionnaire included demographic data of study population and information regarding the analyzed subject was created. **Results:** A total of 784 medical students completed the questionnaire. Of them, 374 were males and 410 were females. In terms of academic grade, 314 were in pre-clinical years and 470 were in clinical years. Thirty four percent of students had a personal experience with child abuse and 41% were exposed to information regarding Child abuse during medical course. With respect to knowledge and attitude towards child abuse, 60% of students did not know what "battered child syndrome" is and 59 % of student considered comparing a child with his/her smarter peers is a form of child abuse. Ninety three percent of students considered child abuse as a crime. The majority of students agreed that physical punishment, verbal abuse and humiliation, and sexual abuse are considered as child abuse. Seventy four percent of students considered that physicians have legal responsibilities for reporting child abuse. Student's knowledge and attitudes did not differ significantly according to their study year, gender, or site of residency. **Conclusion:** The majority of medical students encountered cases of child abuse. However, their knowledge about child maltreatment is insufficient. This study highlights the importance of medical students' education about child abuse.

- 02 **Curcumin and/or L-Carnitine Ameliorate Nephrotoxic effect of 5-Fluorouracil**  
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**Introduction:** Oxidative stress and apoptosis play role in the limitation of the clinical use of 5-fluorouracil (5-FU) as an anti-tumor drug. **Objective:** Our study was established to evaluate the protective potential of curcumin and/or L-carnitine against 5-FU-induced nephrotoxicity. **Method:** Thirty male albino mice were randomly divided into five groups; control group, 5-FU-treated group, curcumin-pretreated-5-FU-treated group, L-carnitine- pretreated-5-FU-treated group, and finally curcumin and L-carnitine-pretreated-5-FU-treated group. The acute toxicity was induced by single sub-lethal dose of 5-FU (75 mg/kg bw, ip). **Results:** 5-FU-treated animals showed a significant increase in serum level of renal injury products; urea, uric acid and creatinine. There was a significant increase in renal lipid peroxidation product; MDA, and significant decrease in the antioxidant, GSH, CAT and SOD as well as TAC. On histopathological examination, 5-fu induced degenerative changes in the kidney. Curcumin and/or L-carnitine tend to normalize the elevated serum renal injury biomarkers and improved the 5-FU-induced lipid peroxidation and reduction on antioxidant markers. In addition, the histopathological picture

showed a significant improvement. **Conclusion:** Therefore, it could be concluded that curcumin and/or L-carnitine could be used as dietary supplement against acute 5-FU-induced nephrotoxicity through their antioxidant and free radical scavenging activities.

- 03 **Prevalence of BRCA1 and BRCA2 mutations among Egyptian females: A Systematic Review**  
Rana Fouda, Nermin Badwi, Nada Moustafa, Yomna Rashad, Azza Moustafa, Maha Abdul Rahman  
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Student Research Unit, Zagazig University

**Background:** In 2014, Breast cancer (BC) was the most prevalent cancer among Egyptians females accounting for 59.5% of newly diagnosed cancer cases and 21.6% of cancer-related mortality BRCA1 and BRCA2 mutations are often associated with increased risk of BC. Many reports described the pattern and frequency of BRCA1/2 mutations in different populations. However, data about the pattern and prevalence of BRCA1/2 mutations in Egyptian population are scarce. Therefore, we conducted this systematic review to determine pattern and frequency of BRCA1/2 mutations in Egyptian females. **Methods:** An electronic database search of PubMed and Google scholar was conducted using relevant keywords. Records were screened for eligible studies and data were extracted. Quality assessment was conducted using Newcastle-Ottawa Quality assessment scale and data were synthesize narratively. **Results:** Five studies with a total of 470 subjects were included in the systematic review. The prevalence of BRCA1 and BRCA2 mutations in BC patients were 19.2% and 25%, respectively. The most prevalent mutations in BRCA1and BRCA2 were (185delAG; prevalence=8.6%) and (999del5; prevalence=20%), respectively. **Conclusion:** The frequency of BRCA1 and BRCA2 mutations among Egyptian females was high. More studies are needed to map the pattern and prevalence of BRCA1/2 mutations in Egyptian females to help in the identification of population at risk of BC.

- 04 **Occupational Exposure to needle sticks injuries among health care workers in Tanta University Teaching Hospital**  
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**Introduction:** Exposure to needle stick injuries expose health care workers (HCWs) to potentially long lasting and life threatening infections like HCV, HBV, and HIV. Such injuries may have severe emotional impact on HCWs and might affect the quality of provided health service. **Methods:** This was a cross sectional study in Tanta university teaching hospital. A self-administered questionnaire was distributed among HCWs using a cluster sampling technique. We investigated knowledge and attitudes of HCWs towards national infection control guidelines. **Results:** One hundred and seven HCWs filled the study questionnaire. Of them, 26 were physicians and 81 were nurses. They reported a prevalence rate of 87.9% exposure to needle stick injuries. Double handed recapping accounted for 50.5% of these injuries, with 35.5% of these injuries occurred during cannula loading. While 42.1% of participants revealed that they received training on proper needle disposal, only 38.1% of them were aware about national infection control guidelines. About 40.2% of participants who were exposed to needle stick injuries, reported these injuries distress them but do not affect their quality of life. About 61.7% of exposed HCWs reported they do not take any specific long term actions regarding their injuries. **Conclusion:** The exposure to needle stick injuries was high among HCWs in Tanta university teaching hospital. The main cause of these injuries was two handed recapping during cannula loading. Awareness about national infection control guidelines and adherence to their instructions was very low among participants.

**05 A Systematic Review of Tobacco Smoking in Egypt: Epidemiology, prevention, and treatment**

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**Background:** Tobacco smoking is the second major cause of mortality worldwide. According to the WHO reports, the prevalence of smoking is increasing in many developing countries including in Egypt. Because tobacco smoking is associated with serious diseases, developing countries have to control smoking and its risk factors to improve health. **Methods:** We followed the guidelines of MOOSE statement (Meta-analysis Of Observational Studies in Epidemiology) during the preparation of this systematic review. A computer literature search of PubMed and relevant Egyptian journals was conducted using the following keywords (smoking OR Tobacco OR nicotine use) AND (risk factors OR cessation OR quit OR control OR prevention OR treatment OR prevalence OR complications OR consequences) AND Egypt\*. Studies were classified into four groups (prevalence, risk factors, complications, and control) and their data were extracted and discussed as a narrative review. **Results:** The prevalence of tobacco smoking in Egypt ranged from 7.7% to 30% of the population. High odds ratios were reported for sibling, parent and peer smoking as risk factors for smoking. Exposure to western media and mixed schools were also reported with significance. Bladder and GIT cancers, COPD, erectile dysfunction are complications of smoking in Egyptian population. Different efforts are directed towards tobacco control. **Conclusions:** Despite high prevalence of smoking in Egypt, efforts to control tobacco smoking are available but inadequate. Recommendations include health education programs covering a wide range of population and proper training for healthcare workers to help their patients stop smoking. Health education programs should be standardized to reach wide range of Egyptian population.

**06 Safety and efficacy of metformin in obese pregnant women without diabetes mellitus: A pooled analysis of two randomized controlled trials**

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**Introduction:** Maternal obesity during pregnancy is associated with adverse consequence for both mother and baby. Many dietary and therapeutic approaches were developed to improve birth outcomes in obese women. Metformin was found to reduce maternal weight gain, birth weight Z score, and preeclampsia in obese pregnant females with gestational diabetes mellitus. However, few data are available about its safety and efficacy in obese pregnant women without diabetes mellitus (DM). **Methods:** We searched PubMed for randomized controlled trials (RCTs) addressing the efficacy of metformin in obese pregnant diabetes-free women. Records were screened for eligibility and data were extracted and analyzed using RevMan 5.3 for windows. Neonatal birth weight Z score was the key outcome. Secondary outcomes included maternal Weight gain, incidence of preeclampsia and neonatal adverse effects. **Results:** Data from two RCTs (n=843 participants) were pooled in a meta-analysis model. The studies were in a low risk of bias according to Cochrane quality assessment tool, giving more credit to the results of the pooled analysis. Compared to placebo, metformin showed significant reduction in maternal gestational weight gain (MD -1.35, 95% CI [-2.08 to -0.63]). The summary effect did not favor either of the two groups in terms of reduction of neonatal birth weight Z score (MD -0.09, 95% CI [-0.23 to 0.06]). Metformin was associated with 41% reduction of the risk of preeclampsia. However, this reduction was not statistically significant (RR 0.59, 95% CI [0.03 to 1.146]). None of the Neonatal adverse effects including stillbirth (RR 1.14, 95% CI [0.42 to 3.10]), and gestational diabetes (RR= 0.90, 95% CI [0.64 to 1.27]) differed significantly between the two groups. **Conclusion:** For obese pregnant women, metformin could reduce gestational weight gain with no significant

reduction of neonatal birth weight. In light of the current evidence, metformin should not be used to prevent poor pregnancy outcomes in obese non-diabetic women.

**07 Management of Recurrent Metastatic Sialoblastoma**

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**Introduction:** Sialoblastoma is a very rare tumor of the salivary glands that affects infants. It represents less than 5% of all salivary gland tumors that occur in childhood and is usually diagnosed in early life or shortly thereafter. The management of Sialoblastoma is challenging due to variability of the histopathological patterns and clinical course and absence of strong clinical evidence. Treatment options for this type of tumor are still debatable. **Case Presentation:** An 18-month-old female presented with a small mass measuring 5.5 x 3.5 x 4.4 cm in the cheek, which was later removed surgically. Histopathological report described the mass was a Sialoblastoma. The case was neglected until the child was 42-months-old and presented again with an 8 cm malignant Sialoblastoma. Surgical report declared the case was inoperable due to the tumor size and its invasiveness. The case received the chemotherapy treatment regime of Ifosfamide, Vincristine, Actinomycin D, and Doxorubicin (IVADO) that is typically used to treat Rhabdomyosarcoma. There was a significant regression in the tumor size after chemotherapy. After a 14-month follow-up, there was a recurrence in the tumor that was excised surgically. **Conclusion:** In this case, the IVADO chemotherapy regimen, used for Rhabdomyosarcoma, was effective against Sialoblastoma. Further studies may be needed to confirm the efficacy of this regime in treating similar cases.

**08 Prevalence and risk factors of irritable bowel syndrome among medical students of Zagazig University**

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**Background:** Irritable bowel syndrome (IBS) is a common disorder that affects the large intestine. IBS causes cramping, abdominal pain, bloating, gas, diarrhea, and constipation. It represents a challenge to public health, particularly among medical students. **Objective:** The aim of the study was to determine the prevalence and risk factors of IBS among medical students in Faculty of Medicine, Zagazig University. **Methods:** We did a cross sectional study using a self-administrated questionnaire. Eligible students from Zagazig University were targeted in university campus and via online e-mails. Rome III Criteria and the Standardized Hospital Anxiety and Depression Scale were used. **Results:** The overall prevalence of IBS was 32.2%. Female students had significantly higher prevalence of IBS than males (81% vs. 34%; P<0.001). Logistic regression analysis showed that chronic health problem is the first predictor for IBS (OR 5.71, 95%CI [3.31 to 9.84], P<0.0001). The second predictor was the presence of obesity (OR 3.84, 95%CI [1.31 to 11.26], P=0.014). Emotional stress during the last six months and depression were significantly associated with increased odds of IBS. **Conclusions:** The prevalence of IBS is high in medical students of Zagazig University. These results highlight the importance of student education about lifestyle modification and stress management.

**09 Morning versus evening administration of statins for patients with hyperlipidemia: A meta-analysis**

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**Introduction:** Statins are usually administered in the evening because cholesterol synthesis is maximized during the night. However, some investigators suggest the administration of statins in morning. Therefore, we performed a meta-analysis of randomized controlled trials (RCTs) that compared morning with evening administration of a statins in patients with hyperlipidemia. **Methods:** We followed the PRISMA statement guidelines during the preparation of this meta-analysis. A computer literature search for PubMed, EBSCO, Web of science, and Ovid Midline was carried out. We include clinical trials that compared morning versus evening administration of statins in patient with hyperlipidemia. Outcomes of low density lipoprotein cholesterol (LDL-C), high density lipoprotein cholesterol (HDL-C), total cholesterol (TC) and triglyceride (TG) were pooled as mean difference (MD) between two groups from baseline to the endpoint. Heterogeneity was measured by Chi-square and I-square tests. **Results:** Four RCTs (399 patients) were included in the final analysis. Morning administration of simvastatin 20 mg was superior to evening in terms of LDL-C (MD 8.703, 95% CI [2.591 to 14.815]) and TC (MD 11.559, 95% CI [2.144 to 20.974]). But there was no significant difference between the morning and the evening administration in terms of HDL-C (MD 0.670, 95% CI [-1.338 to 2.678]) or TG (MD 0.701, 95% CI [-21.782 to 23.185]). In terms of atorvastatin 40 mg, there was no significant difference between morning and evening administration in terms of LDL-C (MD 2.308, 95%CI [-2.059 to 6.676]) and TC (MD -1.68, 95%CI [-8.24 to 6.109]). But morning administration was superior to evening in term of TG (MD 3.286, 95%CI [2.258 to 4.314]) and the adverse occurred in term of HDL-C (MD -8.127, 95% CI [-11.697 to -4.558]). For all outcomes, no significant heterogeneity was found. **Conclusion:** Current evidence shows that there is not a clinically significant difference in efficacy between morning and evening administration of statins in patients with hyperlipidemia. Further large scale RCTs are required to confirm these findings.

**10 Effect of coenzyme Q10 supplementation on lipid profile of patients with coronary artery disease: A meta-analysis**

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**Introduction:** Coenzyme Q10 (CoQ10) is an antioxidant that enhances the activity of complex I and II in the Electron Transport Chain. Many clinical studies evaluated the efficacy of CoQ10 for patient with cardiovascular disease but the precise effects on the lipid profile of the patients with coronary artery disease (CAD) have not been well established. Therefore, we conducted a meta-analysis of published randomized controlled trials (RCTs) about the effects of CoQ10 on the lipid profile of the patients with coronary artery disease (CAD) to quantify its effects. **Methods:** We followed the PRISMA statement guidelines during the preparation of this meta-analysis. A computer literature search for PubMed, EBSCO, Web of science, Ovid Midline was carried out. We included RCTs comparing CoQ10 with placebo in terms of total cholesterol, HDL cholesterol, LDL cholesterol, and triglyceride levels. **Result:** Four RCTs comparing CoQ10 versus placebo, with a total sample size of (307) patients, met our eligibility criteria and were included in this meta-analysis. Coenzyme Q10 was not superior to placebo in terms of Total cholesterol (MD -0.03, 95%CI [-0.13 to 0.07]), HDL cholesterol (MD 0.02, 95%CI [-0.03 to 0.06]), LDL cholesterol (MD -0.04, 95%CI [-0.12 to 0.04]) and triglyceride (MD -0.03, 95%CI [-0.18 to 0.12]), pooled studies were homogenous (I<sup>2</sup> = 0% and P>0.1). **Conclusions:** Current evidence does not show any effect of CoQ10 on the lipid profile of patients with CAD. Further large scale RCTs are required to confirm these findings.

**11 Dexamethasone for prevention of postoperative atrial fibrillation after cardiac surgery: A systematic review and meta-analysis**

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**Introduction:** Postoperative atrial fibrillation (POAF) is the most common complication after cardiac surgery with a prevalence from 15% to 50% depending on the type of surgery, patient population, and perioperative exposure to prophylactic interventions. POAF is associated with higher risk of stroke and longer hospital stay. Dexamethasone (DEX) is a steroid that has been reported to reduce incidence of POAF after cardiac surgery but its role remains controversial. Therefore, we conducted a systematic review and meta-analysis of published randomized controlled trials (RCTs) to assess efficacy of DEX in prevention of POAF after cardiac surgery. **Methods:** We searched PubMed, EBSCO and Ovid Midline for RCTs assessing the efficacy of DEX against placebo in prevention of POAF after cardiac surgery. Records were screened for eligibility and data were extracted and synthesized using Review Manager version 5.3 for windows. Incidence of POAF and mortality in both groups were pooled as odds ratio (OR) with 95% confidence interval (CI) in a meta-analysis model. Statistical heterogeneity was assessed by visual inspection of the forest plot and measured by chi-square and I-square tests. **Results:** Five RCTs with a total of 2330 patients (DEX: n=1166; placebo: n=1164) were included in the final analysis. DEX was superior to placebo in the prevention of POAF (OR 0.66, 95% CI [0.47 to 0.93], P=0.02). Pooled studies were not homogenous (P=0.08, I<sup>2</sup> =52%). Heterogeneity was best resolved by sensitivity analysis excluding Osch et al. study (P=0.36, I<sup>2</sup> =7%). However, the overall effect remained favoring DEX group (OR 0.57, 95% CI [0.41 to 0.80], P= 0.001). In term of mortality, DEX did not reduce the risk of mortality compared to placebo group (OR 0.82, 95% CI [0.23 to 2.91], P=0.76). Pooled studies were homogenous (P=0.82; I<sup>2</sup> =0%). **Conclusion:** DEX administration in patients undergoing a cardiac surgery significantly reduces POAF but does not reduce the risk of mortality.

**12 Safety and efficacy of daclatasvir plus peginterferon alfa and ribavirin for patients with chronic hepatitis c genotype 4 infection**

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**Background:** Daclatasvir (DCV) is a new direct acting antiviral agent that targets NS5A. Many studies have evaluated safety and efficacy of DCV treatment for patients with Hepatitis C Virus genotype 1. Although more than 90% of HCV infections in Middle East and Africa are of genotype 4, few studies have assessed the efficacy of DCV for patients with HCV genotype 4. Therefore, we performed this systematic review to synthesize evidence from published Randomized Controlled Trials (RCTs) regarding the efficacy and tolerability of DCV in treating patients with HCV genotype 4. **Methods:** We followed PRISMA statement guidelines during the preparation of this systematic review and meta-analysis. A computer literature search of PubMed, SCOPUS, web of knowledge, and Cochrane CENTRAL has been conducted using relevant keywords. Citations were screened for RCTs comparing Daclatasvir plus peginterferon alfa/ribavirin versus placebo plus peginterferon alfa/ribavirin. Data were extracted and outcomes of sustained virologic response (SVR), rapid virologic response (RVR), extended rapid virologic response (eRVR), complete early virologic response (cEVR), and commonly reported adverse events (AEs) were pooled as risk ratio (RR) in a fixed effect model meta-analysis using Mantel-Haenzel method. Subgroup analysis, according to DCV dose, was conducted whenever possible. For all outcomes, effect estimates

of the two doses (20 mg vs. 60 mg) were compared by Chi-square test. Heterogeneity was measured by Chi-square and I-square tests. **Results:** Two RCTs (n=154 patients) were pooled in the final analysis. Daclatasvir/ peginterferon-alfa/ribavirin group was superior to placebo/ peginterferon-alfa/ribavirin group in terms of SVR after 12 weeks (RR 1.86, 95% CI 1.34 to 2.60), RVR (RR 6.61, 95% CI 3.09 to 14.16), eRVR (RR 5.30, 95% CI 2.63 to 10.67) and cEVR (RR 1.74, 95% CI 1.30 to 2.31). However, there was no significant difference in terms of SVR after 24 weeks (RR 1.65, 95% CI 0.93 to 2.92). In terms of safety, there was no difference between the two groups in terms of serious adverse events (RR 1.17, P=0.61), grade 2 AEs (RR 0.75, P=0.11), and fatigue (RR 0.94, P=0.38). There was no significant difference between the two doses of DCV (60 mg vs. 20 mg) in all safety and efficacy outcomes. **Conclusions:** Daclatasvir plus peginterferon-alfa/ribavirin is safe and superior to peginterferon-alfa/ribavirin in terms of SVR after 12 weeks (no difference after 24 weeks), RVR, eRVR and cEVR for patients with chronic HCV genotype 4.

- 13 **Should Ribavirin be added to Ledipasvir-Sofosbuvir for patients With HCV genotype 1 Infection?**  
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**Background:** Ledipasvir (LED) is a direct acting antiviral that inhibits NS5A. Sofosbuvir (SOF) is a nucleotide polymerase inhibitor that has been approved to treat chronic Hepatitis C Virus (HCV) infection in combination with other agents. Many studies have evaluated the safety and efficacy of Ledipasvir-Sofosbuvir combination for patients with chronic HCV infection. However, the effect of adding Ribavirin (RBV) to this combination has not been investigated because most studies were not powered to compare the two arms (LED/SOF vs. LED/SOF/RBV). Therefore, we performed this systematic review and meta-analysis to precisely compare the sustained virologic response (SVR) achieved by Ledipasvir-Sofosbuvir combination for chronic HCV genotype 1 Infection with and without Ribavirin. **Methods:** A computer literature search of PubMed, SCOPUS, web of knowledge, and Cochrane CENTRAL has been conducted using relevant keywords. Studies were screened for eligibility and data were extracted to an online data extraction form. SVR and commonly reported adverse events were pooled as risk ratio (RR) in a fixed effect model meta-analysis using Mantel-Haenzel method. Heterogeneity was assessed by visual inspection of the forest plots and measured by Chi-square and I-square tests. Statistical analysis was performed by Review Manager version 5.3 for windows. **Results:** Four randomized controlled trials (n=433 patients with genotype 1 HCV) were pooled in the final analysis. There overall RR of SVR did not favor either of the two groups (LED/SOF vs. LED/SOF/RBV) after 12 weeks (SVR 93.9% vs. 96.7%, RR=0.97, 95% CI [0.93 to 1.01], P=0.19) or after 24 weeks (SVR 94.8% vs. 97.2%, RR= 0.98, 95% CI [0.94 to 1.02], P=0.24). For safety analysis, the incidence of headache in LED/SOF group was 2.73 times less than LED/SOF/RBV group (RR= 2.73, 95% CI [1.74 to 4.27]). On the other hand, cough and dyspnea were more in LED/SOF group than LED/SOF/RBV group (RR= 0.48, 95% CI [0.24 to 0.94]; and RR= 0.14, 95% CI [0.05 to 0.40], respectively). And there was no significant difference between the two groups in terms of insomnia, fatigue, diarrhea, irritability, back pain, or dry skin. **Conclusions:** The addition of Ribavirin to Ledipasvir-Sofosbuvir may improve the SVR for patients with HCV genotype 1 infection after 12 weeks (93.9% vs. 96.7%) and after 24 weeks (94.8% vs. 97.2%). However, this difference was not significant within the present sample size (n=433). We recommend further studies with larger sample size.

## Abstracts of Young European Scientist Meeting (YES Meeting)

- 01 **Portuguese Health Care Providers' Knowledge, Attitudes And Acceptability Of HIV Pre-Exposure Prophylaxis**  
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**Aims:** The current study aimed at evaluating Health Care Providers' (HCP) knowledge, attitudes, practices and acceptability regarding-PrEP in Portugal. In particular, the study sought to gain understanding of the state-of-the-art regarding awareness of different HCP regarding PrEP, as well as examining their perspectives and experiences of providing PrEP advice and guidance. **Introduction:** Evidence shows that pre-exposure prophylaxis (PrEP) is efficient in deterring new cases sexually acquired HIV infection. Whilst its implementation is not yet widespread, it is likely to be introduced in Portugal in the near future. Successful implementation of PrEP requires involvement of HCP, yet little is known about their knowledge, attitudes and acceptability towards this novel preventive tool. **Methods:** An online survey of convenience-sampled Portuguese HCP was conducted in January 2016, to determine their knowledge, attitudes, practices and acceptability of PrEP. **Results:** A total of 96 respondents from across the country took part in the study, of whom the majority were females (60.3%), specialist physicians/junior doctors (39%/53%), working in the field of HIV for 1 to 5 years (42.3%). Over half (51%) considered having an average or high knowledge of PrEP, and this was more common amongst Infectious Diseases Specialists. Major concerns regarding PrEP implementation included a rise in STIs and increased antiretroviral resistance. Despite only 31.3% being asked about PrEP in the future, the majority (75%) considered that PrEP should be made available in Portugal. The main barrier to PrEP implementation was considered to be lack of knowledge and information to HCP. **Conclusion:** Portuguese HCP demonstrated variable degrees of knowledge around PrEP, yet most would support its introduction in the country. Concerns were raised about potential consequences of PrEP roll out, as well as implementation challenges that ought to be addressed before PrEP is introduced.

- 02 **Laboratorial And Clinical Correlation On Knee And Ankle Septic Arthritis Of A Paediatric Population**  
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**Aims:** The aim of this study is to relate different clinical and laboratory markers with a definitive diagnosis of septic arthritis in a paediatric population. **Introduction:** Septic arthritis is a medical emergency, early identification and treatment are essential. The lack of specific and objective criteria delays the diagnosis, with the risk of severe sequelae. **Methods:** We performed a retrospective analysis of medical records of patients aged below 18 years, admitted to the emergency department with a diagnosis of septic arthritis of the knee or ankle, over a period of 17 years. For each parameter were calculated: sensitivity (S), specificity (Sp) and positive and negative predictive values. The final diagnosis was defined by the presence of cultural and / or positive direct examination. **Results:** We included 103 cases, 63% were male, with an average age of 3.99 years. The most frequently affected joint is the knee (74%). Regarding the specificity and sensitivity were analysed: the presence of fever (S=70%, Sp=32.1%), inflammatory signals (S=100%), mobility limitation (S=88.2%, Sp=0%), leucocytosis (S=58.8%, Sp=44.6%) and PCR (S=100%, Sp =1.8%). When there are present four of the markers analysed to sensitivity was 52.9% and specificity 75.7%. **Conclusion:**

The diagnostic markers analysed showed high sensitivity, although low specificity. The presence of four markers simultaneously displays the values of higher coefficient in Sensitivity/Specificity, more suitable for the diagnosis of septic arthritis.

- 03 **The Correlation Between Behavioral And Psychosocial Symptoms With Cognitive Impairment Among Patients With Mild To Moderate Alzheimer's Disease**  
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*2 Professor*  
*3 Students*

**Aims:** To determine the existence of a difference between the scores acquired with the BPSD assessment scale, and the scale for global assessment of cognition in patients with mild to moderate Alzheimer's disease and the healthy control group. To determine whether there is a correlation between the total NPI score with the ACE-R score. To determine whether there is correlation between the total HAMD score with the ACE-R score. To determine whether there is a correlation between each individual NPI subscore with the total ACE-R score. **Introduction:** Alzheimer's disease is a slowly progressive degenerative disease of the brain, of unknown cause, which leads to intellectual decline, behavioral changes and eventually neurological disorders. Behavioral and psychological symptoms of dementia (BPSD) are non-cognitive symptoms commonly associated to Alzheimer's disease. **Methods:** The subjects have been divided into two groups: a control group consisting 30 healthy volunteers, and an experimental group of 30 Alzheimer's dementia patients. The Mini Mental Status Exam and the Addenbrooke Cognitive Examination were used to estimate the cognitive status. The Hamilton Rating Scale for Depression was used to estimate depression. The Neuropsychiatric inventory was used to estimate conduct disorders. **Results:** The study confirmed statistically significant difference in results of MMSE (p=0.00000000008), ACER (p=0.0000000001), HAMD (p= 0.00001), NPI (p= 0.000018). between groups of patients and healthy individuals. Furthermore, correlation was confirmed between subscores ACER with NPI. **Conclusion:** The control group and the AD patients group are significantly different in the cognitive evaluation and conduct disorder scores

- 04 **Frequency Of Using Eye Care Among Persons With Diabetes And Diabetic Retinopathy In DIY: A Rural-Urban Comparison**  
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**Aims:** to compare the use of eye care among diabetic patients in urban and rural area of DIY, Indonesia. **Introduction:** Diabetic Retinopathy is a microvascular complication of diabetes and the leading cause of blindness. Having annual eye examination routinely is a key to reduce the risk of blindness among persons with diabetes. However, poor compliance is common in many areas. **Methods:** This was a community-based cross sectional study, involving all adults with diabetes type 2. We obtained all socio-demographic characteristics, behavior towards general and eye care, and history of past illnesses through interview. Each patient underwent fundus examination. Chi square was used for statistical analysis. **Results:** 1092 participants with DM type II were participated and divided into 2 categories, 488 from urban and 605 from rural. There were 38.4% urban participants and 45.9% rural participants were known having retinopathy diabetic (RD). Of these, only 3.3% of urban patients and 2.6% of rural patients reported to have had regular eye check on monthly basis, 2.2% of urban patients and 2.2% of rural patients were on 3-6 monthly basis. Nearly all participants in urban (83.6%) and rural (86.9%) area had never had an eye examination. There were no significant di-

ferences regarding the use of eye care in urban and rural population ( $p=0.707$ ). Meanwhile, nearly all participants in urban (83.6%) and rural (86.9%) visit physician routinely to control their diabetes ( $p=0.284$ ). **Conclusion:** There are no significant differences between urban and rural person with diabetes regarding the use of eye care. Nearly all of population with diabetes in urban and rural area of DIY, Indonesia has never used eye care. Thus, barrier to eye care services needs to be identified.

#### 05 Dietary Supplementation Use In Professional Athletes

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**Aims:** The aim of this study was to determine the attitudes and habits of active athletes regarding dietary supplements as well as the reasons for their use. **Introduction:** Professional athletes, specific population sub-group, that undertake daily strenuous physical activity, have unique nutritional needs. Dietary supplements, in the form of commercially prepared concentrated vitamins, minerals and other substances with nutritional and physiological effect can be beneficial to athletes during restrictive or unbalanced diet. **Methods:** This study was conducted in February 2016 as a descriptive cross-sectional study. Male athletes, over 18 years of age from 5 professional sport clubs from Novi Sad participated in this study (volleyball, basketball, water polo and handball players). 80 athletes answered to 31 question from the questionnaire regarding general socio-demographic data, their attitudes, habits and reasons for using supplements. **Results:** The questionnaire showed that 82.6% out of 75 athletes use dietary supplements. Younger athletes with statistical significance ( $p=0.006$ ) have more positive attitude on the connection between the use of supplements and reducing pain than older athletes. In most cases they use sports drinks for rehydration (38.9%) and amino-acids (34.8%). Results of  $\chi^2$  test showed that older athletes are more likely to use sports supplements ( $p=0.046$ ) and proteins ( $p=0.002$ ). As the main reason for using supplements they stated immune system boost (23.5%), nutritional supplements benefits (19.1%), and the recommendations for the use by their trainers (38.6%) and doctors (25.3%). **Conclusion:** A high percentage of athletes that participated in this study regularly take supplements. Athletes received basic information about supplements mostly from trainers and doctors. Therefore it is necessary to educate athletes, trainers and doctors about both benefits and risks of using dietary supplements

#### 06 Investigating The Neurocognitive Regulation Of Anxiety States Using Suggestions And fMRI

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**Aims:** To Investigating the neurocognitive regulation of anxiety states using hypnotic suggestions and multimodal fMRI technique. **Introduction:** The cost of anxiety disorders on society is high and escalating. Epidemiological studies have indicated rising prevalence rates with many other ailments having anxiety disorders as comorbidity. However, the neurocognitive regulation of anxiety is not fully understood. **Methods:** In this preliminary study, hypnotic suggestion was combined with functional MRI (fMRI). Six healthy, highly hypnotisable participants performed a simple facial emotion processing task. Hypnotic suggestion was used to elicit three separate emotional states; anxious, calm and normal. Multimodal functional magnetic resonance imaging was employed to investigate the neural correlates engaged during each state and to explore the neurocognitive mechanisms that might regulate anxiety states. **Results:** Results showed that hypnotic suggestions have the potency at elucidating the three anxiety states to significantly varied levels. Statistical image analysis, contrasting the anxiety states delineated the whole middle frontal gyrus rather than its function unit – the dorsolateral

prefrontal cortex to be inversely coupled with limbic structures like the amygdala and insula across states of high anxiety and relaxation. **Conclusion:** The results can serve as a behavioural index for the determination of the levels of anxiety across the various mood states. Collectively, the study has delineated the neural correlates involved in the neurocognitive regulation of anxiety and modulation within the anxiety states. This understanding would help revolutionise and improve the conventional anxiety therapies by involving the middle frontal gyrus in neuro-specific treatments for anxiety. This will lead to the reduction of the socioeconomic burden on society as a result of anxiety disorders.

#### 07 Connection Between Prolactin Levels With Cardiac Markers And Cardiovascular Events In Chronic Kidney Disease

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**Aims:** To examine the association between prolactin with cardiac markers and cardiovascular (CV) events in Chronic Kidney Disease (CKD). **Introduction:** CKD associates with hyperprolactinemia. In the general population, hyperprolactinemia has been associated to endothelial dysfunction and CV outcomes. **Methods:** We included 288 patients (62% men) with CKD stages 3-5 non-dialyzed. Baseline serum prolactin and other biochemical nutritional and inflammatory parameters were measured. Cardiac markers included serum B-type natriuretic peptide (BNP), troponin, coronary artery calcification score (CAC) (assessed by CT imaging) and left ventricular mass (LVM) (assessed by echocardiography). Patients were followed for a median of 30 months (p10-p90: 10-47 months) and the composite of fatal and non-fatal CV events was recorded. **Results:** The median level of prolactin in men was 8.7 ng/mL (5.4-18.9 ng/mL) and 10.0 ng/mL (5.9-19.9 ng/mL) in women. According increasing gender-specific tertiles of prolactin, patients tended to be older ( $p=0.07$ ) and had significantly lower renal function determined by glomerular filtration rate (GFR,  $p<0.001$ ). Patients with higher prolactin categories showed lower levels of hemoglobin ( $p=0.01$ ) and higher serum phosphorus ( $p<0.001$ ). In univariate analysis, we found a strong inverse correlation between prolactin and GFR ( $\rho=-0.37, p<0.001$ ), independent of age, gender and various confounders. No significant association was found between prolactin values and serum troponin levels, LVM or CAC. A positive correlation was found between prolactin and BNP in crude analysis ( $\rho=0.13, p=0.03$ ), but abrogated after adjustment for age and gender. During follow-up, 65 CV events were recorded, and no significant association was with prolactinemia. **Conclusion:** Although a crude association was found between BNP and prolactin levels, no consistent connection was observed between prolactinemia and cardiac markers. Our results suggest that the clinical value of prolactin levels must meet the CKD stage and that the quantification of plasma prolactin in this population may not be useful in identification of the sub-group of patients with high CV risk.

#### 08 The Effects Of A Maternal High Fat Diet On Brain Structure And Development In The Offspring

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**Aims:** To investigate whether there were changes in the density of astrocytes or microglia in the cortex of offspring exposed to a maternal high fat diet (HFD) during the complete gestation and lactation or only the embryonic stage (Emb-HFD) when compared to controls. **Introduction:** Previous research has shown that offsprings exposed to a maternal high fat diet exhibit an increase in total cell density, but decrease in number of neurons in the cerebral cortex. **Methods:** Three groups of male offspring mice were used: a maternal HFD during pregnancy and lactation group ( $n=5$ ), an Emb-HFD group – a HFD for the first 3.5 days post-conception ( $n=5$ ), and a control chow diet group ( $n=5$ ). The brains were removed at 26 weeks, fixed, fro-

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zen and sectioned. Sections were stained with antibodies against GFAP (astrocytes) and Iba1 (microglia). DAPI staining was used to analyse the overall cell density and to normalise the results. The cell density of GFAP+ astrocytes and Iba1+ microglia were measured as a percentage of total cells. Astrocytes were found to be gathered in the centre of the cortex; the area with positive astrocytes was measured. Data were analysed using One-Way Analysis of Variance. **Results:** There was no significant difference in the density and area of astrocytes between groups. The density of microglia was not found to be significantly different between groups. However, a trend was observed with an increase in the density of microglia in the HFD group (11.847% SD 2.879) and Emb-HFD group (9.520% SD 3.383) when compared to the control group (6.454% SD 5.161). **Conclusion:** Our results show that the GFAP+ astrocytes are not responsible for the increase in cell density observed in maternal HFD. This increase in cell density might be due to Iba1+ microglia, however, further analysis will determine if the trend observed reaches significance with more offspring analysed.

#### 09 Predictors Of Proximal Arteriovenous Fistula Success: The Role Of Preoperative Vascular Characterization

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**Aims:** To evaluate clinical variables and pre-operative anatomical and hemodynamic parameters, measured by Doppler ultrasound (DUS), as predictors of proximal arteriovenous fistulas (AVF) primary patency. **Introduction:** Worldwide, end stage renal disease's prevalence is increasing and assuring vascular access quality is detrimental for these patients survival. Although arteriovenous fistulas (AVF) should be preferred, current scientific evidence, based on clinical, anatomical and hemodynamic criteria, is still insufficient to determine the ideal vascular access for hemodialysis in each patient. **Methods:** An observational, analytical, longitudinal and retrospective analysis of patients who underwent proximal AVF creation, as primary definitive vascular access between January 2010 and December 2015, was conducted. The following outcomes were considered: AVF primary patency, clinically and/or DUS evaluated, at 48 hours and at 3 months after surgery. Studied variables included patient's demographic characteristics (age, gender and BMI), comorbidities and DUS derived pre-operative parameters. Statistical analysis: Non-parametric statistics were used for univariate analysis, a multivariate analysis with linear and logistic regression and ROC curves were also conducted. **Results:** At 48 hours 93.2% AVF were patent and 71.9% at 3 months. Patency at 48 hours was associated with: intra-operative systolic blood pressure (SBP) ( $p=0.007$ ); venous diameter measured with (VDwT) and without (VDwoT) tourniquet ( $p=0.002$  and  $p=0.008$ , respectively); and anti-platelet therapy ( $p=0.043$ ). Primary patency at 3 months was associated with: VDwT and VDwoT ( $p=0.021$  and  $p=0.005$ , respectively). As for the ROC analysis a: SBP $>153$ mmHg, VDwT $>3.4$ mm and VDwoT $<2.8$ mm, predicted AVF failure at 48 hours with sensibilities 62, 77 and 58%, respectively. Patency at 3 months was predicted by the following cutoffs: VDwT  $>4.1$ mm and VDwoT $>2.5$ mm, with 66 and 53% specificity, respectively. **Conclusion:** Intraoperative SBP, venous diameter and anti-platelet therapy predicted proximal AVF success. Knowledge of these variables may guide proximal AVF creation optimization.

#### 10 Aging And Obesity Affect Acute Central Leptin Effects On Energy Balance

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**Aims:** We aimed to investigate the influence of aging and obesity on the catabolic effects of centrally applied leptin. **Introduction:** Obesity is one of the most challenging problems of modern societies. Humans and other mammals show age-related changes in body

weight: middle-aged obesity is common. Age-related peptidergic regulatory alterations in energy balance may also contribute to this phenomenon. Leptin has a crucial catabolic role in this regulation: it decreases food intake, while increasing energy expenditure. However, leptin-resistance might develop with aging and in obesity, as well. **Methods:** Intracerebroventricular leptin injections were given to different age-groups: juvenile, young adult, younger and older middle-aged, aging and old (2-, 3-, 6- and 12-, 18- and 24-month, respectively) of normally-fed male Wistar rats. In addition, younger and older middle-aged (6- and 12-month, respectively) high-fat diet-induced obese groups were also established. Leptin-induced anorexia was tested on 4-h re-feeding following 48-h fasting in an automatic FeedScale system, thermoregulatory changes were analyzed in an indirect calorimeter supplemented with thermocouples. **Results:** Leptin suppressed re-feeding in normally-fed young adult (3-month) and, surprisingly, in old (24-month) animals, but not in juvenile or middle-aged groups. Obese 6-month rats failed to show anorexia, but the 12-month obese group showed increased responsiveness. The hypermetabolic effects were considerable in 3-month, but they declined progressively with aging. Obesity aggravated this decline. **Conclusion:** Our results suggest that age-related changes in the anorexigenic and hypermetabolic effects of centrally applied leptin may contribute to the explanation of middle-aged obesity. In the old age-group anorexia becomes strong again, while hypermetabolism declines. The surprising anorexigenic responsiveness of older obese middle-aged rats to centrally applied leptin may suggest a potential clinical application for the peptide.

#### 11 Acute Thermoregulatory Effects Of Central Corticotropin Releasing Factor (Crf) In Rats Of Different Nutritional States

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**Aims:** We aimed to clarify the effects of nutritional state on the thermoregulatory responsiveness to acute central injection of corticotropin releasing factor (CRF). **Introduction:** Middle-aged obesity and sarcopenia in older age-groups are similar in all mammals, therefore regulatory alterations in catabolic (anorexigenic, hypermetabolic) peptidergic systems may also be assumed in the background. Our previous experiments confirmed the potential contribution of catabolic hypothalamic melanocortins to these age-related regulatory changes: hypermetabolic/hyperthermic effects decreased in middle-aged, then became enhanced again in old rats. Obesity accelerated age-related regulatory alterations. The catabolic corticotropin system, activated by melanocortins, may also have a role in age- and nutritional state-related regulatory changes. Earlier, we have demonstrated progressive age-related decline in hyperthermic effects of centrally applied corticotropin releasing factor (CRF). **Methods:** Thermoregulatory effects of intracerebroventricular CRF injections (0, 0.3, 1  $\mu$ g) were analyzed in male 6-12 months old Wistar rats on different diets. Normally fed (NF6, NF12), calorie-restricted (70% energy intake, CR6, CR12) and high-fat diet-induced obese (60% fat calories, HF6) groups were established. Oxygen consumption indicating metabolic rate was determined by indirect calorimetry (OxyMax) complemented by thermocouples recording the core and tail skin temperatures (the latter indicating heat loss). **Results:** Acute CRF-injection induced weaker hypermetabolic and hyperthermic reaction in the HF6 than in the NF6 and CR6 groups. Even CR12 rats showed maintained response without an age-related decline. **Conclusion:** In contrast to CR, diet-induced obesity decreased the hyperthermic reaction to acute central CRF-injection. Thus, similarly to melanocortins, age-related changes in hypermetabolic actions of central corticotropin system seems to be accelerated by obesity.

#### 12 The Effects Of Perinatal Undernutrition On The Regulation Of Body Weight: Alterations In Responsiveness To Cholecystokinin

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**Aims:** We studied the effects of maternal and postnatal calorie-res-

triction (CR) in rats on long-term body weight (BW) development and resting metabolic rate (RMR) of offspring and also on their anorexic responsiveness to cholecystokinin (CCK), which is the most important gastrointestinal satiety hormone. **Introduction:** Perinatal nutritional programming affects metabolic functions throughout life. Several studies showed that undernutrition during gestation or lactation may be associated with metabolic disorders such as adult-onset obesity and cardiovascular diseases. However, the outcomes were different depending on the time of exposure or severity of the undernutrition. **Methods:** We measured food intake (FI), BW and RMR (oxygen consumption, using Oxymax in direct calorimeter) in male offspring kept on CR diet (30% restriction of energy intake) or normal chow (NF), born to Wistar dams kept on CR or NF diet. In adult offspring, anorexic effects of intraperitoneal CCK injections (5 ug) were also tested on 120-min re-feeding following 48-h fasting in an automated FeedScale system. **Results:** Postnatal CR diet resulted in smaller postnatal BW development. In case of both postnatal diets, BW development of offspring born to CR dams were smaller than that of pups of NF dams. NF offspring of CR dams exhibited higher RMR than those of NF dams. In middle-aged NF offspring anorexic effect of CCK was suppressed by maternal CR diet. **Conclusion:** Maternal CR diet from a later stage of gestation continuing during lactation programs increased RMR resulting in smaller BW development in their offspring. In turn, it suppresses satiety effect of CCK which can probably promote obesity later in an obesogenic environment.

- 13 **The Effects Of Perinatal High-Fat Overnutrition On Body Weight Regulation: Alterations In Responsiveness To Cholecystokinin**  
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**Aims:** In our animal study we aimed to investigate the effects of maternal overfeeding (during gestation and lactation) on the long-term body weight (BW) development of offspring, on their resting metabolic rate (RMR) and also on their anorexic response to cholecystokinin (CCK), the most important peripheral satiety hormone. **Introduction:** Critical effects of the perinatal nutrition on the development of regulation of energy balance and body weight is described as „metabolic programming“. Previous studies showed that overnutrition during pregnancy or lactation may be associated with adult-onset obesity and cardiovascular diseases. **Methods:** In male offspring of Wistar dams kept on high-fat diet (HF, containing 60% fat calories) or regular chow (NF) following life-long HF or NF feeding themselves, BW, food intake and RMR (oxygen consumption, using Oxymax indirect calorimetry) were recorded. In adult offspring, anorexic effects of intraperitoneal CCK-injections (5 ug) were also tested on 180-min re-feeding following 48-h fasting in an automated FeedScale system. **Results:** Postnatal HF diet resulted in obesity and lower RMR. However, in case of both HF and NF postnatal diets, offspring born to HF dams exhibited first smaller BW development and higher RMR. Maternal HF diet reduced the satiety effect of CCK in middle-aged HF offspring, whose BW after 5 months of age exceeded that of HF offspring born to NF dams. **Conclusion:** Maternal HF diet could be protective against some adverse effects of the postnatal HF diet. It increases RMR in offspring initially suppressing BW development. At the same time, it reduces the efficacy of CCK, which, added to effects of postnatal HF diet, may contribute to the development of adult-onset obesity.

- 14 **Association Of Abo Blood Group And Rhesus Factor With Incidence Of Breast Cancer**  
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**Aims:** 1.To study the association of ABO blood type with the incidence of breast carcinoma. 2.To study the occurrence of breast carcinomas in different age groups. **Introduction:** Breast cancer is one of the leading cause of death. Multifactorial causes play a role in the development of cancer breast which includes endogenous hormonal alteration to familial association and genetic mutations. Association

of various blood group antigen is known in gastric, pancreatic, prostate and other cancers. However, in relation to breast cancer, these findings are inconsistent. **Methods:** Retrospective cases of diagnosed breast cancers over a period of two years, excluding those with familial association and history of oral contraceptive use, were included in the study. Blood group of these patients were retrieved from the hospital data. Control group included healthy female donors of same age group. Data analysis was done using SPSS. **Results:** All the 271 cases of breast cancer cases in our study were invariably reported in females. Majority of the cases were reported in the age group 26-50 and 51-75. Most common blood group among cases was A and Rh +ve. Significant risk is associated with blood groups A and AB with incidence of breast cancer. Blood groups B and O have significantly lower risk of breast cancer. Rh group negative is also associated with significantly higher risk of breast cancer. Right sided breast cancer was slightly less prevalent than left sided. A marginal 1.1% of the cases had unilateral incidence. Infiltrating ductal carcinoma was found to be the commonest histological subtype diagnosed across all age groups. **Conclusion:** Our study revealed positive association of breast cancer with blood group type A and AB; and negative association with blood group B, O and Rh +ve.

- 15 **The Significance Of Imaging Examinations In The Follow-Up Of Malignant Melanoma – A Retrospective Clinical Trial Of 10 Years**  
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**Aims:** We aimed to determine the benefit of CT in the different disease stages done within the confines of the follow-up. **Introduction:** Melanoma malignum (MM) is the most dangerous form of skin tumor. Its incidence rises every year therefore the follow-up of the patients may be vital to detect metastases as soon as possible. Several studies showed that 82% of the metastases occur within the first 3 years however the patients can also develop a metastatic disease after 10 years. Although the current international guidelines for the follow-up are not standardized. **Methods:** We analysed the data of the patients diagnosed with MM between 2001 and 2011 in the Department of Dermatology, University of Pécs. We reviewed the documentations of each patients focusing on the imaging examinations (e.g. chest X-ray, abdominal-, or regional ultrasound, cranial-, chest-, abdominal CT) for a period of 3 years of detailed follow-up. **Results:** We analysed 831 patients' data. At the time of diagnosis 50%, 22%, 8,4 %, and 2,3 % of patients had stage I, II, III and IV disease, respectively. Six percent of the patients' stage was unknown and in 11,6 %, it was in situ disease. We diagnosed altogether 108 metastatic cases. Our study confirmed that 82% of the metastases occurred in the first 3 years as described in the literature. The metastases that appeared in the first 3 years were mainly regional. There was no positive CT scans among stage IA patients. Around 30 % of stage IIB, IIC, IIIA patients developed a metastatic disease, mostly in the first 3 years, 30% of these cases were diagnosed via CT scans. **Conclusion:** According to our results, CT scan is not necessary in the early stages of MM (I-IIA) within the confines of the follow-up, however it may be suggested to be performed in stage IIB disease.

- 16 **Pressurized Intraperitoneal Aerosol Chemotherapy (Pipac) As A New Method For Medication Administration.**  
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**Aims:** Analyze changes in peritoneum related with PIPAC. **Introduction:** 167940 new cases of peritoneal carcinomatosis are annually diagnosed in Europe. Systemic chemotherapy is not indicated for these patients because tumor response rate is less than 14%. Based on pharmacokinetic and biological effects of tumor, intraperitoneal drug injection (PIPAC) is most effective mode for these patients. **Methods:** PIPAC with cisplatin and doxorubicin was offered to three patients suffering from peritoneal carcinomatosis with involvement of small bowel. None of patients had metastases in parenchymatous organs. Assessment of patients' safety and tolerability were performed

med by medical examination and regular laboratory tests. Adverse effects were evaluated by NCL Criteria for Adverse Events. Tumor response rate was registered by laparoscopy with macroscopic evaluation, as well as histological and immunohistochemical essays. Quality of life was determined by QLQ-30. **Results:** Patient-1. Karnofsky index (KI) 40%, PCI-16, was before PIPAC therapy. After 4 PIPACs regressive changes in 60% of tumor cells were histologically proved, KI-40%. The patient died 187 days after first PIPAC. Patient-2. KI-40%, PCI-6, was before first PIPAC. After 2 PIPACs the biopsies confirmed absence of tumor cells. 2 weeks before death on CT no evidence of peritoneal carcinomatosis was detected, KI-70%. The patient died 109 days after first PIPAC. Patient-3. KI-40%, PCI-14, was before first PIPAC. 6 PIPACs were conducted. Before 6th PIPAC all biopsies were negative, KI-90%. 567 days after first PIPAC patient is alive. **Conclusion:** Mean life expectancy after first PIPAC was 267 days. Raising of KI after PIPAC as well as a stable general condition were determined in all cases. 3 patients had tumor regression and lesions of sclerosis. As a result one patient had 60% and two others had complete peritoneal tumor regression. No cumulative toxicity was observed after PIPAC. Quality of life remained stable under PIPAC therapy.

- 17 **Frailty And Proximal Femoral Fractures: Measure Of Prevalence And Epidemiological Analysis**  
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**Aims:** To explore the burden of frailty, in cohort with PFF, in Portugal, determining the prevalence of frailty, characterize a cohort with PFF and comparison of prediction accuracy of the phenotypic frailty (PF) and frailty index (FI) models in identifying frail individuals. **Introduction:** Proximal femoral fractures (PFF) following low-impact trauma are a major clinical consequence of osteoporosis, with high morbidity and mortality associated. Since the risk of PFF increases with age and the population is evolving to become increasingly frailer, these fractures are likely to develop as a major public health problem worldwide. **Methods:** The data were from the National Hospital Discharge Register and from two questionnaires, a modified 4-item version of the frailty phenotype and a frailty index. In this 1-year observational, cross-sectional and analytical study, a sample of 278 participants aged 50 years and older, with a diagnosis of PFF, were enrolled. The proportion of participants categorized at each frailty category was calculated for both definitions and the agreement in the classification between the two frailty instruments was examined. **Results:** The database comprised a total of 214 proximal femur fracture, 49 (22.9%) in men (76.59±11.315 years old) and 165 (77.1%) in women (81.64±8.636 years old). There was a significant difference between age, age by strata and days of hospitalization for both modified PF and FI classification categories. The proportion of people classified as frail/severe frail, respectively, was 27.57% and 33.18% and when assessing the extent of agreement, kappa was statistically significant. **Conclusion:** The present study states that almost three in ten adults aged 50 and older with a PFF in HSJ are severe frail/frail, based respectively in FP and FI, suggesting that the anticipated burden of frailty in PFF patients is excessive and goes according to the expected.

- 18 **The Impact Of Breast Cancer Treatment In Breastfeeding**  
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<sup>2</sup> - Director do Centro de Mama do Centro Hospitalar de São João, Professor Auxiliar Convocado da Faculdade de Medicina da Universidade do Porto

**Aims:** The aims of this work are: a) to assess the will of breast cancer survivors to get pregnant and to breastfeed; b) to determine if they managed to do it after breast cancer treatment and c) to determine the interference of breast cancer treatment in breast-feeding.

**Introduction:** Breast Cancer is a modern epidemic; its incidence is growing, and that is perceived among women younger than 35 yo. Due to the actual trend to get pregnant later in life, some develop BC before conceiving. Nowadays, the chance of cure is even higher and, therefore, the possibility of getting pregnant and breastfeed after that life-event is more and more real. The aims of this work are: a) to assess the will of breast cancer survivors to get pregnant and to breastfeed; b) to determine if they managed to do it after breast cancer treatment and c) to determine the interference of breast cancer treatment in breast-feeding. **Methods:** Retrospective study and literature review, digital clinical files query, PubMed search and applying a questionnaire **Results:** We studied a sample of 85 patients, of which we selected 15 survivors; of these, 6 are trying to get pregnant and 5 gave birth. Four of these 5 breastfed their infants (4 days to 3 months) and they express worries on breast and nipple anatomy and physiology, as well as on counseling. **Conclusion:** Our study confirms the known rates of projected and achieved pregnancy and breast-feeding. Some of the reasons referred to stop / not start breast-feeding are related to the treatment of breast cancer and the lack of knowledge and advice from others, including health professionals.

- 19 **The Frequency Of Cytomegalovirus Infection During Pregnancy And Among Newborns**  
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**Aims:** The goal of this study was to determine the prevalence of CMV infection among pregnant women/fetuses and neonates in our population. **Introduction:** Cytomegalovirus (CMV) infection is the most common cause of viral congenital infections. The global prevalence range from 0.2 to 6.1% of all live births. In 80-90% cases the infection is asymptomatic. The clinical manifestations of symptomatic congenital CMV infection are diverse, but the jaundice, hepatosplenomegaly, petechiae and thrombocytopenia are most frequently noted. **Methods:** The study included 191 neonates and 26 pregnant women/fetuses with suspected CMV infection. The presence of CMV DNA was determined in urine and/or blood, cerebrospinal fluid and broncho-alveolar lavage of neonates, and in fetal blood or amnion fluid. The procedure included DNA extraction, PCR and gel electrophoresis. **Results:** The presence of CMV infection was detected in 14 of 191 neonates (7.33%). Among 115 asymptomatic neonates, CMV infection was detected in 6 (5.22%), while among 76 neonates with symptoms, the infection was demonstrated in 8 (10.53%) neonates. In the group of positive symptomatic neonates, the most frequent clinical manifestations were typical for congenital CMV infection as well as the symptoms of liver disease. Out of 26 tested pregnant women/fetuses, CMV infection was detected in two (7.69%). **Conclusion:** Congenital CMV infection has significant role in mortality and morbidity of neonates in our population. Further studies with the larger cohort are necessary to determine the prevalence of congenital CMV infection as well as to define diagnostic and clinical protocols for prevention, early detection and therapy.

- 20 **Impact Of Nutritional Status On Cognition In Institutionalised Orphans: A Pilot Study**  
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**Aims:** To study the impact of nutritional status on cognition in institutionalised orphans. **Introduction:** Proper nutrition is critical to maximizing brain function and enhancing learning. There is accumulating evidence that early malnutrition is associated with long-term deficits in cognitive and academic performance, even when social and psychological differences are controlled. Worldwide, children living without permanent parental care are at a heightened risk for under-nutrition, putting their health and development in great jeopardy. The present study was undertaken to assess the nutritional and cognitive status in institutionalized orphans which might help to formulate effective interventions for improving the nutritional sta-

tus of vulnerable children in future. **Methods:** This cross-sectional & observational study included 70 children (35 orphans & 35 non-orphans). Their anthropometric measurements (height, weight, and BMI) were measured & cognition was assessed using subsets of Wechsler Intelligence Scale for Children-Revised (WISC-R): Block design and Digit span. The data obtained was subjected to descriptive statistical analysis. **Results:** 37.1% of children had stunting, 31.4% had wasting, 45.7% were underweight, and 34.3% showed thinness. Mean +SD of Block design in non-orphans was significantly high compared to orphans (p-value 0.05). Mean +SD of Digit span in non-orphans was significantly high compared to orphans (p-value 0.000). Both Block design & Digit span showed moderate positive correlation with nutritional status based on Z-scores (p value <0.05). **Conclusion:** The results of our study indicate that children in orphanages have high rates of both malnutrition and cognitive delay compared to the control group and there was a direct correlation between both the variables. If orphanages are here to stay as a last resort for children deprived of a family, there is an urgent need to improve the institutional environment in order to foster the development of millions of children in orphanages around the world.

**21 The Impact Of Proton Pump Inhibitor On Experimental Autoimmune Encephalomyelitis Induced In Dark Agouti Rats**  
Macura M.  
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**Aims:** The aim of this study is to examine proton pump inhibitors effect on number of T lymphocytes, inflammatory cytokines and autophagy in experimental autoimmune encephalomyelitis (EAE) model in Dark Agouti (DA) strain rats. **Introduction:** Multiple sclerosis (MS) is a chronic, inflammatory, demyelinating disease of central nervous system. EAE is used as a MS animal model. Many consider it most useful model for therapy development because it provides information about immunopathogenesis of MS and possible therapy. Using this model, it is now known that the main cells that are responsible for EAE and MS development are Th1 and Th17 lymphocytes. Defects in the process of autophagy are responsible for the development of many neurodegenerative diseases, including MS. Proton pump inhibitors (PPI) act by irreversibly blocking the H<sup>+</sup>/K<sup>+</sup> ATPase enzyme system. **Methods:** EAE is induced to rats of DA strain, with spinal cord homogenate from DA rat (HKM) with Complete Freund's adjuvant (CFA) and PPI (Control, Pantoprazol, Takeda GmbH, Germany) was administered to experimental DA rats. We performed the isolation of lymph node cells and mononuclear blood cells on seventh day post immunization. Relative expression of certain genes in different cells originating from immunized DA rats was determined using a quantitative polymerase chain reaction (Polymerase chain reaction, PCR). Expression of autophagy markers was analyzed using Western Blot method. **Results:** Pantoprazol treatment of immunized DA rats has beneficial effect on clinical score during the course of EAE without statistically significant decrease in number of T lymphocytes as well as statistically insignificant effect on expression of inflammatory cytokines or autophagy markers such as NBR1. **Conclusion:** These findings suggest that proton pump inhibitor has favourable role during the course of EAE via mechanism that does not include inhibition of inflammatory cytokines or autophagy markers expression.

**22 Is Microhemorrhage In Diffuse Axonal Injury Associated With A Poorer White Matter Condition? A Multimodal Mri Study On Traumatic Brain Injury.**  
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**Aims:** Our objective was to reveal whether the "microhemorrhagic" or the "non-microhemorrhagic" form of traumatic diffuse axonal injury (DAI) represents poorer white matter conditions through combined advanced MRI techniques. **Introduction:** Susceptibility weighted (SWI) MRI is presently the most sensitive method to detect microhemorrhage related to DAI. However, the development of micro-

hemorrhage is not certain and its clinical relevance is yet unclear. To accomplish our objective diffusion tensor imaging (DTI) was applied, which is a reliable technique to quantify axonal condition, but presently is not a feasible clinical tool. **Methods:** 10 healthy and 38 traumatic brain injured patients (GCS 15-3) underwent T1, T2, FLAIR, DTI and SWI MR imaging. For a precise assessment, coregistration (FSL FMRIB) of the different modalities, and classification of the patients into groups as "microhemorrhagic", "non-microhemorrhagic" lesioned and "MRI negative" was performed. Then, DTI parameters as fractional anisotropy (FA) and mean diffusivity (MD) of predilection regions of DAI (corpus callosum, corona radiata and the brainstem) were measured in each group. Comparison of the FA and MD values among groups by ANOVA and examination of the correlation between the number of lesions and the DTI parameters via Spearman correlation was performed. **Results:** FA values of the corona radiata in "microhemorrhagic" and "non-microhemorrhagic" groups differed significantly from the values measured in MRI negative TBI and healthy patient groups (p=0.003) and a strong correlation was found between the diffusion parameters and the summed amount of "hemorrhagic" and "non-hemorrhagic" lesions (p=0.0016; rho=-0.49). There was no significant difference of FA and MD values between the "microhemorrhagic" and "non-microhemorrhagic" groups (p=0.1149). **Conclusion:** Our study highlights that both the "microhemorrhagic" and the "non-microhemorrhagic" forms of DAI represent a poorer white matter condition, but the FA values in the two forms do not differ significantly. White matter damage rate can be estimated the best by taking both forms into account.

**23 Pneumothorax In Neonates**  
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**Aims:** To evaluate the prevalence, to assess risk factors and to describe the clinical characteristics, management and outcome of newborn infants with pneumothorax as well as identify predictors of mortality in these newborns. **Introduction:** Pneumothorax occurs more frequently in the neonatal period than in any other period of life and is associated with increased mortality and morbidity. Several risk factors for pneumothorax, including respiratory pathology, invasive and non-invasive respiratory support, and predictors of mortality have been described. **Methods:** This retrospective case-control study included all newborns hospitalized in the NICU of Centro Hospitalar São João, Porto, Portugal, between 2003 and 2014, with the diagnosis of pneumothorax. A control group was selected among the newborns without pneumothoraces. The collected data included: demographics and perinatal data, pneumothorax characteristics, classification, treatment and clinical outcomes. **Results:** Our study included 240 neonates (80 with pneumothoraces and 160 controls), of whom 145 were male (60.4 %). Median gestational age was 37 (24-40) weeks and median birthweight, 2612.5 (360-4324) grams. The prevalence in our NICU was 1.5 %. Pneumothorax was significantly associated with RDS (p=0.010) and TTN (p<0.001). Invasive mechanical ventilation (p=0.016) and FiO<sub>2</sub>>40% (p=0.003), were independent risk factors for the -development of pneumothoraces. The mortality rate was 13.8%. Hypotension, mechanical ventilation and thoracocentesis followed by a chest tube insertion were found to be predictors of mortality in newborns having pneumothoraces, but pneumothorax was not. **Conclusion:** Pneumothorax is relatively frequent in the neonatal intensive care unit. Its risk factors and predictors of mortality should be known in order to prevent and treat this critical situation. Pneumothorax itself was not a predictor of mortality, probably due to the adequate and prompt management used in the NICU.

**24 Carotid Disease. The Paradoxical Portuguese Reality.**  
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## Abstracts

## Abstracts

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**Aims:** To compare the national in-hospital results of stenting versus carotid endarterectomy. Mortality and stroke were the primary outcomes. Demographic data and the hospital length of stay were also assessed. **Introduction:** Despite the increasing number of studies, carotid stenosis ideal treatment remains one of the most controversial themes in vascular diseases. **Methods:** Every patient registered between 2005 and 2013 with the main diagnosis of carotid stenosis and submitted to carotid endarterectomy (CEA) or stenting (CAS) were included in the study. The information was obtained through the Central National Healthcare database. **Results:** 5252 patients were included: 1351 were symptomatic (mention of stroke) and 3901 asymptomatic. Carotid stenting was performed on 21% of the symptomatic and 17% of the asymptomatic. In the symptomatic patients, the in-hospital mortality was significantly higher in those submitted to CAS (4.9% vs 1.6%, p<0.001). The difference was even higher in the octogenarian patients (7.7% vs 0.8% p<0.001). No significant differences in outcomes (mortality and stroke rate) were observed in the asymptomatic group. CAS in asymptomatic octogenarians was associated with a 6-fold increase in mortality when compared to the same procedure in patients <80 years (P=0.009). There was no difference in the primary outcomes of CEA in women and in octogenarians. The median hospital length of stay was lower in patients submitted to CAS than in those who had CEA: 5 vs 7 days in symptomatic (p<0.000) and 2 vs 5 days in asymptomatic (p<0.000). Between 2005 and 2013 a gradual increase in the proportion of cases treated by carotid stenting was observed: from 2 to 35% in symptomatic and from 7 to 18% in asymptomatic patients. **Conclusion:** Regardless of the increasing frequency of carotid stenting in Portugal, a higher mortality with this procedure was found in symptomatic patients, particularly in octogenarians. Interestingly and paradoxically, no worse outcome was observed in asymptomatic patients

**25 Trends In Hospital Admissions For Obstructive Lung Disease (Old) In Portugal From 2000 To 2010**  
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**Aims:** To analyse the evolution of OLD hospitalisations in Portugal, from 2000 to 2010. **Introduction:** OLD is a group of diseases, which includes asthma, bronchiectasis and COPD. COPD will be the third major cause of death by 2030 and its hospitalisations represent a major burden. Nevertheless, studies on COPD hospitalisations are sparse. **Methods:** We performed a retrospective observational study using data from the national hospitalisations database. We studied all inpatient episodes of patients aged 18 years and older with a principal or secondary diagnosis of OLD, as coded by the ICD-9-CM, between 2000 and 2010. **Results:** COPD was responsible for 81% of all hospitalisations with a principal diagnosis of OLD. In 2000, admissions with a principal diagnosis of OLD accounted for 1.39% of all hospitalisations; in 2010, OLD accounted for 1.40% of all hospitalisations. There was no variation in the proportion of COPD hospitalisations. Hospital admissions and mortality increased with age and were more common in male than female patients. Median length of stay was 8 days for OLD during the entire study period, and for COPD since 2001. However, in-hospital mortality decreased for both COPD (-34.1%) and

OLD (-30.5%). COPD, as a secondary diagnosis, was often associated with respiratory failure (13.5%) and pneumonia (10.1%). When both COPD and pneumonia were diagnosed, we found an increasing trend to disfavour COPD in favour of pneumonia as the principal diagnosis. **Conclusion:** OLD hospitalisations represent a major burden in Portugal, mainly due to COPD but its proportion did not change in this period. We observed an important decrease in in-hospital mortality for OLD and COPD, but length of stay did not decrease. These results suggest that better healthcare or other factors may be counteracting the expected increase of the hospital burden of COPD.

**26 Incidence And Leading Causes Of Early Neonatal Death In Tuzla Canton: A 10-Year Retrospective Study**  
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**Aims:** The main aim is to determinate incidence and leading causes of early neonatal deaths during the period of ten years (2004-2014). **Introduction:** Early neonatal death (END) is death of infant occurring in first 7 days (168 hours) from the time of birth. **Methods:** This research encompasses the data obtained from the archives in Neonatal Unit(Tuzla University Hospital Center).The analysis included variables such as the numbers of live births, causes of death, sex of infants, gestational age, weights at birth and ages in moment of death. **Results:** During the period of ten years (2004-2014) there were 46708 live births and 316 END-s recorded. Overall the early neonatal mortality accounted for 6.7 per 1000 live births. END rate had decreased between the years 2003 and 2013 (7.8 to 4.4 per 1000 live births). Out of 316 END-s, 196 were male infants, which is 24 % higher than the number of female infants (120). According to gestational age, the highest early neonatal mortality rate (75%) was recorded in low birth weight infants (<2500 gram). Most END-s were noted within the first 24 hours of life (52.8 %), 24-72 hours (33.9 %), >72 hours (13.3%). The most frequent cause of death during the study period was prematurity, particularly in male infants with gestational age under 37 weeks and birth weight between 500 and 1500 grams. This cause of END is also leading factor in female infants, but in significantly lower rates. Other common causes of death were congenital anomalies in 68(21.5 %), hypoxia and trauma in 56(17.7%) and infection in 30 cases (9.5%). The cause of END was unknown for 1.3 %. **Conclusion:** According to the decreasing trend in early neonatal mortality rate, expected rate in year 2015 is 4.01/1000. Advancements in essential neonatal care, particularly for premature infants could lead to significant decrease in early neonatal mortality rate.

**27 Is Medical Student's Satisfaction Mainly Affected By The Academic Performance? A Cross-Sectional Study**  
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**Aims:** To assess the main factors that affect medical student's satisfaction. **Introduction:** Studies have showed that student's satisfaction was related with subject's comprehension, later professional attitudes and career commitment. Since student's satisfaction is an indirect performance measure of curriculum effectiveness, it is important to evaluate the factors that affect student's satisfaction in order to assess if universities are responding to their student's academic needs. **Methods:** A total of 183 students in the first semester and 200 in the second semester in Faculty of Medicine of the University of Porto (Portugal), answered two questionnaires about two different courses of the second year, with a total number of 765 (66.3%) questionnaires. The questionnaires focused on satisfaction with 7 items. To evaluate the association between age, gender, work load, academic performance, class assiduity, study hours during the semester, study hours during the final evaluation period, agreement

with the assessment method and global effort with satisfaction it was performed a multiple linear regression, carried out on standardized variables. **Results:** From the 9 variables analyzed, 5 showed significant impact on student's satisfaction: academic performance ( $\beta=0.203$ ;  $p<0.001$ ), work load ( $\beta= -0.273$ ;  $p<0.001$ ), class assiduity ( $\beta=0.145$ ;  $p<0.001$ ), study hours during the finals ( $\beta=0.215$ ;  $p<0.001$ ) and evaluation method agreement ( $\beta=0.199$ ;  $p<0.001$ ). Student's gender, age, study hours during the semester and global effort did not show relation with satisfaction ( $p>0.05$ ). **Conclusion:** This study suggests that academic performance isn't the main factor that affects student's satisfaction. In fact, the most relevantly associated with satisfaction was work load, followed by study hours during the finals, evaluation method agreement and academic performance and, with less significance, class assiduity. Considering the relationship of satisfaction with motivation, knowledge acquisition and future career commitment, it is important that faculties proceed to adjustments that take this variables into account.

- 28 Accurate Diagnosis And Successful Management Of Congenital Heart Diseases Relating To Embryological Considerations**  
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**Aims:** The aim of the study is to review some of the recent developments in the field of cardiac embryology and correlate this new information with the clinical experience. **Introduction:** For future physicians, cardiac embryology brings forth divergent recollections of bewildering diagrams, sectioned embryos, and a thesaurus worth of murky terminology. Congenital heart diseases (CHD) are defects in the structure of the heart and great vessels, with a present-day worldwide prevalence of 6-13/1000 neonates. **Methods:** The study is based on the analysis of medical records for 68 patients, aged between 1 week - 44 years, diagnosed and surgically treated (51 cases) for CHD at the Cardiovascular Diseases Institute (IASI, Romania) between January 1st - December 31st 2015. **Results:** Out of the 51 patients surgically treated, 4 cases (7.84%) had undergone prior palliative or interventional procedures, 4 cases (7.84%) benefited from palliative interventions (shunts, pulmonary artery banding, atrial septectomy) and the rest of 43 cases (84.31%) were corrected per primam. Unoperated cases consisted in complex CHD with irreversible pulmonary arterial hypertension and neonates with critical CHD. In 14 cases (20.59%) CHD were part of syndromes like Down, di George, Noonan, heterotaxy or Williams. The type of embryological defect and the segmental classification were further correlated and interpreted with the clinical aspect of CHD and the type of surgical treatment in terms of palliative versus corrective surgery, single step correction, number of surgical procedures. **Conclusion:** By identifying the origin of the primary defect, the students and doctors can evaluate the probability of finding specific secondary defects with an origin mechanistically related to the main anomaly. Detailed knowledge of cardiac embryology and anatomy beginning during the preclinical years allows further accurate diagnosis and successful approach of CHD.

- 29 Histopathological Changes Of Gastric Mucosa In Celiac Disease**  
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**Aims:** The aim was to assess the frequency and type of histopathological changes of gastric mucosa in patients with proven CD. **Introduction:** Celiac disease (CD) is a chronic autoimmune disease caused by ingestion of gluten in genetically susceptible individuals. Lymphocytic gastritis (LG) can be found in CD patients, with possible lower incidence of chronic Helicobacter pylori (Hp) positive gastritis. **Methods:** This study included patients who underwent esophagogastroduodenoscopy (EGDS) and histopathological examination. Patients were distributed into two groups: patients with and without histopathological alterations indicative of CD. **Results:** The study included 351 patients. CD was detected in 145 (41.3%) patients, while the

control group consisted of 206 (58.7%) patients without CD confirmation. The most common symptom in CD patients was diarrhea, while patients in the control group most often complained of dyspepsia, fatigue and bloating ( $p=0.001$ ). Chronic superficial gastritis was the most common gastritis in both groups of patients (76% and 63.6%;  $p>0.05$ ). Gastritis associated with Hp infection was present in 29.3% of CD patients, which is significantly less than in people without CD where 62% of gastritis is associated with Hp infection ( $p<0.001$ ). In this study we haven't discovered other forms of gastritis. Patients with CD had significantly lower incidence of Hp infection compared to the control group (15.7% vs. 37.9%;  $p<0.001$ ). Marsh IIIa degree was significantly more prevalent in Hp- patients compared to Hp+ patients (39.8% vs. 9.1%;  $p=0.005$ ). Marsh IIIc was more prevalent in Hp+ patients (63.6% pre 35%;  $p=0.011$ ). The presence of Hp infection affects the degree of damage to duodenal mucosa ( $p=0.011$ ). **Conclusion:** The prevalence of Hp infection was significantly lower in CD patients. The higher degree of damage to duodenal mucosa in Hp+ CD patients may contribute to the possible synergistic effect of infection and autoimmunity in CD.

- 30 Contribution Of Stress Test Ecg To Diagnostic Criteria Of Arrhythmogenic Right Ventricular Dysplasia/Cardiomyopathy (Arvd/C) - Preliminary Results**  
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<sup>2</sup> University of Paris-XI, Stress Test Unit (Pr S. Hatem), Cardiovascular Institute, Pitié-Salpêtrière Hospital, Paris (France)

**Aims:** To determine diagnostic contribution of right located (V3R, V4R) and upper positioned (X1, X2) supplementary ECG precordial leads in detecting pertinent information to the diagnosis of ARVD/C in both basal and peak stress conditions. **Introduction:** Arrhythmogenic right ventricular dysplasia/cardiomyopathy (ARVD/C) is a rare biventricular progressive heart disease with frequent genetic origin and characterized by right ventricular dilation due to gradual replacement of myocytes by adipocytes and fibrosis. **Methods:** 13 consecutive patients fulfilling 2010 revised ARVD/C Task Force criteria prospectively enrolled at Pitié-Salpêtrière Hospital in 2014. All patients underwent quantitative biventricular contrast angiography (diagnostic gold standard). Usual treatment was continued. **Results:** At angiography, compared to 20 controls, all 13 patients had major right ventricular enlargement (mean range +30% at end diastole (ED) and +100% at end systole (ES)) and limited left ventricular dilation (+10%). At ECG, none had basal right bundle branch block. At rest, QRS terminal activation duration (TAD) . 55 ms (minor criterion) was indistinctly observed in leads V1 to V3 and X1 to V4R in 45% patients, and still persisted at peak stress. At rest, an epsilon wave (major criterion) was detected in conventional precordial leads in 3/13 patients, and exclusively in supplementary leads in 2 more patients. All these patients presented a doubling in epsilon wave amplitude at peak stress. At rest, T wave inversion (TWI) beyond V1 (major criterion) was observed in 5/13 patients and in 5 more cases in supplementary leads. Conversely, TWI was no longer observed at peak stress in half the cases. No complication occurred. **Conclusion:** Coupling supplementary precordial leads facing the enlarged right ventricle with stress ECG testing is a safe and fruitful method for detecting concealed ECG ARVD/C criteria. Of note, in about half the cases, this procedure specially highlights or reveals epsilon waves (major criterion) undetectable at rest on standard right precordial leads.

- 31 The Impact Of The Teaching Methodology Based On Large Versus Small Group Lectures On The Satisfaction Of The Students. A Case Study On Histology.**  
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**Aims:** To analyze the impact of the change in the teaching methodology from separate large (LG- theoretical classes) and small group (SG- practical classes) lectures in a separated way (SW) to a joined way (JW), in the course of Histology. **Introduction:** According to Santen S. et al., the classic education model is significantly sustained in lectures, during which information can be provided to a large audience. However, it is known that an active participation, as well as more personal type of lessons can be more productive and keep the audience more concentrated, and it can be possible reducing the size of the audience. **Methods:** A satisfaction questionnaire was applied to two hundred and twenty eight (228) student, with a participation ratio of 78.35%, after experiencing both types of lectures. This questionnaire was divided in four dimensions: teacher's performance (T), expectations (E), workload (W) and memory skills (M). To access the level of satisfaction with both types of classes - LG and SG -, we used paired-sample T-test. **Results:** In general, we found no differences between JW and SW (57.20 vs 57.36,  $p=0.696$ ). However, when analyzed per dimensions, we found statistical differences in all dimensions except one. Evaluation of Teacher's Performance was better in JW (20.95 vs 20.43,  $p=0.027$ ) as were Expectations of Students (10.80 vs 10.40,  $p=0.009$ ) and the Workload (15.22 vs 16.50,  $p<0.001$ ). The exception belonged to Memory Skills (10.26 vs 10.23,  $p=0.760$ ). **Conclusion:** The change from large group to small group lectures pleased the students. Students considered having higher expectations and a better teacher's performance and on JW. However workload perception is higher in this new method, Furthermore a benefit wasn't accomplished on Memory Skills need, which did not confirm previous evidence.

- 32 Investing In The Development Of Critical Thinking In Medical Schools: A Good Option?**  
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**Aims:** To evaluate if the investment of an institution of medical education in the development of critical thinking of its students has a positive effect on the final grade of the course. **Introduction:** Studies reveal that critical thinking is fundamental to clinical judgement, underlying the art of diagnosis. Therefore, it is extremely important that medical education institutions promote the development of critical thinking. **Methods:** A total of 476 students from 1st, 4th, and 6th years from the Faculty of Medicine of the University of Porto (FMUP) answered, on a 2011 study, to a questionnaire, allowing the following variables to be collected: year of registration, prior graduation, prior publication of scientific articles, enrolling in a research group, auto-perception of critical ability, rating answers of the Portuguese version of the Critical Thinking Questionnaire, proposed by Alan Castle and global assessment of the critical ability development as a FMUP student. In the current year, course grades of all students were also collected. To evaluate the association between the exposure factors and the course grade it was used a multiple linear regression model. **Results:** There is not a statistically significant relation between auto-perception of critical ability and final grade ( $\beta$  0.075;  $p$  0.37). Nonetheless, the more students think that the course developed their critical ability, higher is their course grade ( $\beta$  0.349;  $p$  0.007). It was also found a positive, statistically significant association between the enrolling in a research group and the course grade ( $\beta$  0.471;  $p$  0.011). **Conclusion:** More important than the auto-perception of critical ability, is how much the course increases critical ability. Those students who have perception of an increasing of critical thinking throughout the course, have higher final grades. Therefore, investment in an education that develops critical thinking may be important to improve academic performance.

- 33 Morphological Characteristics Of Sesamoid Bone Fabella In**

Serbian Population  
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Faculty of Medicine

**Aims:** To establish the incidence of fabella in Serbian population, the average value of anthropometric parameters of the fabella, and the existence of statistical significance in differences in values of the parameters observed between sexes. **Introduction:** Fabella is sesamoid bone that can be found in certain people in the population. Commonly it is located in the lateral head of the gastrocnemius muscle, or in its tendon, usually behind the lateral condyle of the femur. **Methods:** In the study the used material included radiographs imaging films of 125 knees (71 male and 54 female) from the collection of Department of Anatomy, Medical faculty of Novi Sad. Morphological analyses were carried out in the software "Image J". Obtained results were analyzed statistically and results of the male and female subpopulation compared using the Student T-test. **Results:** The incidence of fabella in Serbian population is 19.04%. In the female subpopulation the incidence is 57%, and in male subpopulation it's 43%. Average length was 7.78 mm, thickness (AP diameter) 5.22 mm. Distance from lateral femoral condyle was 17.17 mm, and distance from the fibula was 1.98 mm. Fabellar surface was 35.61 mm<sup>2</sup>. Difference in dimensions of fabella between males and females was not statistically significant. **Conclusion:** Morphological characteristics of the fabella in our population, as well as the relations between male and female subpopulation, gives us information of vital importance for the work of most orthopedic clinicians, radiologists, surgeons and forensic expert.

- 34 Morphological Characteristics Of The Endocervical Part Of The Uterine Cervix**  
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Faculty of Medicine

**Aims:** The aim of this research was to study the differences in morphological and histological characteristics of the endocervical part of the cervix in women in reproductive period and postmenopausal women. **Introduction:** The uterine cervix is histologically composed of two zones - exocervix and endocervix. The endocervical part of the cervix is far less investigated, especially its quantitative morphological and histological characteristics and its changes after the menopause. **Methods:** The study included 30 women, divided in two groups depending on the date of their last menstruation (Group 1: reproductive women; Group 2: postmenopausal women). Each group included 15 samples of the operative material of cervical cut-outs. After the histological processing of the material, the characteristics of the endocervix (such as the length of the endocervical canal, thickness of the endocervical wall, depth of endocervical glands, histological characteristics of endocervical epithelium and its height, the location of squamocolumnar junction and the characteristics of stroma) were analyzed and the comparison between the two groups was conducted, including the statistical analysis. **Results:** It was found that in postmenopausal women the length of the endocervical canal and thickness of the endocervical wall were slightly smaller, as opposed to the depth of endocervical glands which was significantly smaller. It was also shown that the histological characteristics of endocervical epithelium and stroma are almost the same in both groups. However, the squamocolumnar junction is located upper in postmenopausal women than in reproductive women. **Conclusion:** The difference in the length of the endocervical canal, thickness of the endocervical wall, histological characteristics of endocervical epithelium and stroma are not statistically significant between the groups. Thus, the menopause does not have the crucial influence on these parameters. On the other hand, the menopause does affect the depth of endocervical glands and the depth is significantly different between the groups.

- 35 Stigma Towards People With Mental Disorders In Adolescents**  
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**Aims:** Evaluation of the efficiency of educational intervention for di-

minishing stigma towards people with mental disorders among adolescents. **Introduction:** Studies show that almost 9 out of 10 people in European region suffering from mental disorders say they have been affected by stigma. Stigma can lead to help seeking issues and lower treatment compliance. Reducing stigma can lead to better treatment of mental disorders as well as prevention of depression and anxiety due to stigma impact. Conducting education programs in schools is considered to be an effective method to decrease stigma. **Methods:** This study was designed as a Cluster Randomized Trial. In total 8 schools were randomly assigned to either educational intervention or control. A total of 240 students in 10th grade (M = 15.75 years) did participate. Level of Stigma was measured one week before (Pre-test), immediately after (Post-test) and 6 months after (Follow-up) with Attribution Questionnaire for Children 8 items (AQ-8-C) developed by Corrigan (2007). The Questionnaire is ranging from 8 to 72 points, the higher the results the higher is the level of Stigma. Educational Intervention consisted in a short 2 hours lecture. Topics addressed: a) Mental Health as a part of everyone's life; b) Reaching out – helping others; c) Biological and non-biological causes plus treatability of mental disorders; d) Stigma regarding Mental Disorders. **Results:** The AQ-8-C demonstrated an acceptable internal consistency, with Cronbach's alpha 0.84 and 0.78 for the intervention and control group samples respectively. There was a significantly statistical difference between intervention and control groups with Mean Difference between Pre-test and Post-test being -9.12; 95%CI [-12.70;-5.54],  $p=0.012$  and between Pre-test and Follow-up being -8.43; 95%CI [-12.16;-4.70],  $p=0.007$ . **Conclusion:** This educational intervention showed to be an efficient method to decrease level of stigma towards people with mental disorders among adolescents.

- 36 **Smoking And Psychiatric Disorders: Correlates From A Smoking Cessation Programme**  
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<sup>2</sup> Consulta de Apoio Intensivo à Cessação Tabágica - Centro de Saúde de Faro

**Aims:** This study examined the association of smoking with anxiety and depression in an intensive smoking cessation programme consultation (CAICT) of a health center in Faro, between 2013 and 2015. **Introduction:** According to the 2014 National Health Inquiry, the smoking prevalence was estimated at about 20% in Portugal. In the same year, a mental health report by the Portuguese Health Directorate considered anxiety and depression as the two most prevalent psychiatric disorders in the country. Smoking is very prevalent among those living with both pathologies, as an association of smoking with anxiety and depression has been documented in adults. **Methods:** This retrospective and observational study included the first time users of the CAICT in 2013, 2014 and 2015. Three instruments were applied: the hospital anxiety and depression scale (HADS), the Fagerström test of nicotine dependence and the Richmond motivation test for nicotine cessation. The considered variables were: the HADS, Fagerström and Richmond scores, age, gender, employment status, education level, daily coffee intake, exhaled carbon monoxide, daily cigarettes smoked, previously diagnosed psychiatric disorder and age of smoking onset. **Results:** The studied sample was 151 participants. The most common previously diagnosed psychiatric disorder was depression and nicotine dependence was positively correlated with the anxiety dimension of HADS. The nicotine dependence and motivation to quit smoking grades were moderate. There was no relationship between age of smoking onset and exhaled carbon monoxide or any of the HADS' dimensions. There was a negative correlation between the motivation for nicotine cessation and the HADS' depression scale score, which shows that when depression levels were high, the motivation to nicotine's cessation was lower. **Conclusion:** There was a high prevalence of depression in the sample. The high prevalence of anxiety was shown to be directly correlated with nicotine dependence.

- 37 **Synthesis: A Novel Analytical And Visualization Tool For The Description And Synthesis Of Research Topics Of Scientific**

#### Publications And Projects

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**Aims:** To present an information tool to support the classification and summary of biomedical publications and projects. **Introduction:** Biomedical research data aggregation, however valuable information it may provide, is currently hampered by lack of a universal standard to classify either publications or projects. Herein, we propose a new semi-automatic methodology to promote metadata comparability and use. **Methods:** We extracted titles, abstracts and keywords from project proposals (n=36) and indexed publications (n=185) of a research unit and a medical academic department, respectively. In the latter case, publications were retrieved for the 2014-2015 period from Web of Science (including MedLine collection) and SCOPUS. Extracted keywords were converted into MeSH terms and extra ones were generated from titles and abstracts using the MeSH-on-Demand tool. After manual checking, final MeSH terms were categorized according to origin and tree numbers and frequency-based visualization algorithms applied. The method was then converted into a Java application with multiple data input options. **Results:** Our tool - SynThesis - gathers information concerning the main research topics and their frequencies from publications and projects. Research topics are divided into categories and results are then presented as word-cloud type readable images. Examples of SynThesis features include descriptions of single researchers' publications and summaries of entire departments expertise areas. Regarding the studied department, top publication MeSH terms identified for the Main Topics category were Quality of Health Care (n=37), Stomach Neoplasms (n=29) and Asthma (n=21). A trend towards studies involving humans and diagnosis procedures was identified. **Conclusion:** SynThesis allows visually helpful identification of the most frequent research topics, yearly trends and complete description of the input. The application's ability to categorize and synthesize information using MeSH terminology increases metadata accessibility and comparability, potentiating the development of new institutional synergies and improvement of research-related decision-making.

- 38 **Ischemic Mitral Regurgitation**  
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**Aims:** We aimed to determine the effect of the mitral annuloplasty performed during CABG on the morphology and function of the left atrium and ventricle during the five year follow-up. **Introduction:** Ischemic mitral regurgitation is formed after acute myocardial infarction or in patients with chronic ischemic heart disease. As the mitral valve is structurally intact, the regurgitation is caused by the dilation of the mitral annulus or the local or global remodeling of the left ventricle. These geometrical discrepancies have no optimal surgical solutions yet. **Methods:** We selected 312 patients (230 male, 82 female, mean age: 61.9±9.46 years) who had CABG surgery between 2006 and 2010. Two groups were formed based on the operation of CABG. In group „A“ we put those 42 patients who had severe mitral regurgitation before the surgery. In their case mitral annuloplasty was performed during CABG. In group „B“ only CABG happened. After 5 years, we compared the size of the left atrium and ventricle and the recurrent regurgitation with the preoperative echocardiographic data. **Results:** During the 5-year follow-up, the size of the left atrium has decreased in group „A“ (47.3±6.4mm vs. 45.7±5.5mm) while in group „B“ it increased significantly (40.5±5.07mm vs. 42.99±5.4mm p,0,01) The end-diastolic diameter of the left ventricle didn't changed significantly in group „A“ (60.3±8.8mm vs. 60.9±8.8mm) while in group „B“ we found a significant increase (53.4±6.9mm vs. 55.4±6.5 p,0,01). In group „A“ recurrent regurgitation, which required re-operation was found in 5 cases. In group „B“ the originally mild regurgitation didn't progress in 5 years. **Conclusion:** Although mitral annuloplasty isn't an ideal solution in case of mitral regurgitation, it is able to prevent the remodeling of the left chambers.

- 39 **Causes Of Death In Kidney Transplanted Patients**  
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**Aims:** The aim of this study is to analyze the most common causes of death in kidney transplanted patients, how old patients were when they died and duration of life after transplantation. **Introduction:** Most of patients who undergo kidney transplantations have been in a dialysis program, received immunosuppressive therapy, have diabetes mellitus, hypertension or graft nephropathy, therefore are at risk of developing lethal complications and diseases. **Methods:** Research included 163 patients that had undergone kidney transplantation at the Nephrology Clinic of University Hospital Center Tuzla during the period of 17 years (1999-2016). The data collected was based on medical history, death certificates, records of examination before and after transplantation. **Results:** Based on data, 19 or 11,7% patients have died after transplantation. With functional graft in time of death were 15 patients and 4 were with afunctional graft, and had been on dialysis. In group of 15, 11 had completely functional graft and 4 had graft nephropathy. Due to cardio vascular disease seven patients have died, ICD caused five, Infection two, neoplastic complications two, liver cirrhosis caused one, acute pancreatitis one and pulmonary embolism one death. Median age of patients who died is 44,1 years of age, and average duration of life after transplantation is 4,7 years. Types of transplantations are 16 sibling and 3 cadaveric. Out of 19 patients, 14 have received a kidney from an older and 5 from a younger donor **Conclusion:** Mayor cause of death were CVDs, pre-transplant examination didn't reveal any CVD. This study has concluded that age of the recipient is a factor in death of patients with functional graft. The older the recipient is, the bigger the risk of developing non-renal lethal disease. The earliest development of lethal neoplastic disease was six years after transplantation. Development of graft nephropathy didn't increase incidence of death

- 40 **Early Abortion Options In Tuzla, Bosnia And Herzegovina- Is There A Need For A Medical Abortion In Near Future?**  
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**Aims:** The aim of this study is to show methods, incidence and complications of abortion in Tuzla and to determine possible solution for improving health care of our female patients. **Introduction:** Abortion is the ending of pregnancy by removing a fetus or embryo before it can survive outside of uterus. Modern methods use medication or surgery for abortion. Medical abortion is a type of non-surgical abortion in which abortifacient pharmaceutical drugs are used to induce abortion. In very early abortions (<10 gestation weeks), medical abortion using a mifepristone-misoprostol combination is considered to be more effective than surgical abortion (vacuum abortion). **Methods:** This research study is based on data collected from the Department of gynecology and obstetrics University Clinical Center of Tuzla in period from the 1st of January to the 31st of December 2015. **Results:** In 2015, on Department of gynecology and obstetrics was performed 755 in-clinic abortion procedures that included vacuum aspiration and o medical abortion referred to as an abortion pill. Total number of early abortions up to 12 weeks is 643 (85, 17%), 133 (20,68%) of early abortions was performed for medical reasons( Missed ab, Ab spontaneous) and 510 (79,32%) of them were elective abortions performed at the request of the woman for non-medical reasons. There were 8 patients with complications, 6 of them (less than 1%) had residua after abortion (treated with recurretage) and 2 of them had severe complications that ended with hysterectomy. **Conclusion:** Even though incidence of severe complications after surgical abortion was less than 1% in 2015., consequence in form of losing reproductive function after hysterectomy is strong argument for involving pill abortion as an early abortion option especially when it comes about young female patients. Abortion pill in early pregnancy is more effective and causes less complications (uterine perforation, hysterectomy) than surgical abortion.

- 41 **Potential Years Of Life Lost Due To Suicide-Related Deaths In**

Poland  
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**Aims:** To evaluate the number of potential years of life lost (PYLL) due to premature, suicide-related mortality in Poland. **INTRODUCTION** Suicidal behaviour is thought to be one of the world's major health and social problems. In Poland it is the leading cause of death among people aged 15-39, which makes it a substantial social burden and represents a great economic loss to the nation. **Methods:** Absolute numbers of suicide-related deaths by gender and five-year age groups were abstracted from the Polish Central Statistics Office database. PYLL for 2012 was calculated by multiplying the mortality values by the remaining life expectancy for each age category using separate life expectancy tables for Polish males and females. **Results:** The number of reported suicides in 2012 was 5,555 among males, 810 among females, 6,365 in total. The crude rates per 100,000 population were 30.5, 3.8 and 16.6, respectively. The PYLL due to suicide-related deaths in 2012 was 187,734, representing approximately 2% of the total PYLL due to all death causes. The total male PYLL (163,056) was substantially higher than among females (24,678). PYLL per death was 29.49 for both sexes combined, 29.35 for male and 30.49 for female. **Conclusion:** PYLL and PYLL/death demonstrate the effect of mortality on both social and individual level and may be useful in the debate on public health issues. High PYLL due to suicide, especially among males, reinforces the importance of additional preventive measures. Mental illness and family disagreements are the most frequent suicide cause in Poland. It is expected that preventing behavioural disorders, their early detection and effective treatment can notably decrease the social burden of suicide. There is a need to design and implement psychological programmes aimed specifically at young males to enhance their ability to cope with difficult situations and actively seek employment.

- 42 **Poorly-Cohesive Gastric Carcinoma: Is Sub-Total Gastrectomy A Safe Approach?**  
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**Aims:** Is Sub-Total Gastrectomy (STG) an independent risk factor for recurrence in resectable Ro poorly-cohesive carcinomas (PCC). **Introduction:** Gastric cancer recurrence remains the leading cause of death in patients who undergo curative surgery. PCC presents an infiltrative pattern, so a sufficient resection margin, 4 or 5 cm, has to be attained to ensure complete excision of the tumour. Compared to Total Gastrectomy (TG), STG has a lower morbidity. Some authors advocate that STG, even when resection margin is attained, is a recurrence risk factor. **Methods:** 245 patients with resection for gastric cancer at HFF and HIDP, between January 2007 and December 2013, were reviewed. Tubular carcinoma and PCC Ro resections were included. Patients with surgical mortality or follow up less than six months were excluded. Outcomes were: disease first recurrence and time to first. Univariate analysis and multivariate analysis with logistic regression was performed. Analysis was stratified by tubular and PCC gastric carcinoma. The outcomes were compared by strata according to surgical resection technique (TG vs STG). Non parametric statistics were used. Significance was considered for alpha<0.05. **Results:** 162 patients were included (91 with tubular carcinoma and 71 PCC). Among PCC pT stage, pN+ and lymphovascular invasion was associated with recurrence. In Logistic and Cox regression models lymphovascular invasion was the only independent risk factor for recurrence and time to recurrence (OR=5,98; 95CI[1,31-27,28], p<0,021 and OR=5,02; 95CI[1,43-17,65], p<0,012 respectively). In Univariate analysis, logistic regression, cox regression and Kaplan meyer curves STG was not associated with recurrence or time to recurrence compared with TG for Ro PCC resection. **Conclusion:** PCC has a higher recurrence compared to tubular carcinoma. Lymphovascular invasion is an independent risk factor for recurrence and time to recurrence



in both PCC and tubular type. STG was not an independent risk factor for recurrence or time to recurrence in PCC.

#### 43 Oral Administration Of Xanthohumol Modulates The Progression Of Monocrotaline-Induced Pulmonary Arterial Hypertension

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**Aims:** Test the potential effect of xanthohumol as a preventive therapy against the natural progression of experimental pulmonary arterial hypertension (PAH). **Introduction:** PAH is a chronic condition that affects markedly the pulmonary circulation. Through an increase in the pulmonary vascular resistances this condition frequently leads to right ventricular (RV) failure. Polyphenols are known to be present in large amounts in fruits, vegetables, red wine and even beer, and were shown to exert a positive effect on several chronic diseases. It was our purpose to investigate if the consumption of a polyphenol-enriched beer could improve the prognostic of PAH. **Methods:** Male Wistar rats (180-200g) were divided in two groups: Monocrotaline (MCT) and Control, injected subcutaneously with 60 mg/kg of MCT or an equal volume of vehicle solution, respectively. Next, each group was again divided and exposed to different drinks during 4 weeks: 5% ethanol (Control+ETOH and MCT+ETOH) and xanthohumol (XN)-enriched beer (Control+XN and MCT+XN). At days D25-27, animals were submitted to cardiac stress test and echocardiographic/hemodynamic evaluation. After sacrifice, cardiac and pulmonary samples were collected for histological and biochemical analysis. **Results:** MCT+ETOH animals presented a diminished V02máx (p<0.05 vs. Control+ETOH) that it was reverted in MCT+XN animals. At the cardiac level, MCT+ETOH rats presented an elevation of RV systolic pressure (p<0.01 vs. Control+ETOH) that it was correlated with the RV mass (r=0.71, p<0.05), fibrosis (r=0.87, p<0.05) and cardiomyocyte cross sectional area (r=0.24, p<0.05). All these parameters were attenuated in the MCT+XN animals (p<0.05 vs. MCT+ETOH). At the pulmonary level, MCT+XN animals presented a reduction in the medial thickness of pulmonary arteries (p<0.05 vs. MCT+ETOH) as well as attenuation of metalloproteinases 2 and 9 (p<0.05 vs. MCT+ETOH). **Conclusion:** The present study demonstrates that xanthohumol consumption may represent a potential preventive measure in the context of PAH improving exercise tolerance and cardiopulmonary remodelling.

#### 44 Diagnostic Reference Levels: The Portuguese Public, Private And International Context In Computed Tomography.

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**Aims:** Outline the ionizing radiation dose of some of the most common Computed Tomography (CT) exams done in Portugal and introduce diagnostic reference levels (DRL) according to the ICRP recommendations. **Introduction:** Radiation Protection should be a worldwide concern and to emphasize this the International Commission on Radiological Protection has come up with a measure for quality control back in the 1990's – Dose Reference Levels (DRL). The DRLs are not meant to be a radiation dose guideline but a reference for our radiation safety performance accordingly with all the other radiology centres in our city/region/country. DRLs have not been established in Portugal yet, nor even in most of Europe, but will have to by 2017. **Methods:** Dose reports generated by the equipment for each of the selected exams were collected: Head, Neck, Chest and Abdomen. With the aid of a proprietary software (DOSE-X®) CTDI-

vol and DLP values were automatically recorded and the Effective Dose (ED) generated. The 75th percentile was then calculated, from which local DRLs were proposed and compared with international DRL values using descriptive statistics. **Results:** Data from 571 CTs was collected for Head (n = 147), Neck (n = 123), Chest (n = 156) and Abdomen (n = 145) exams. The suggested DRLs were: Head CTDIvol 69 mGy, DLP 1030 mGy.cm, ED 2.17 mSv; Neck CTDIvol 26 mGy, DLP 590 mGy.cm and ED 3.48 mSv; Chest CTDIvol 11 mGy, DLP 400 mGy.cm and ED 5.60 mSv; Abdomen CTDIvol 13 mGy, DLP 594 mGy.cm and ED 8.91 mSv. **Conclusion:** The suggested DRLs for Portugal follow the European trend line but the radiation dose variation between the proposed values and the existing ones suggest that there is a high protocol optimization potential, both at a local and international level.

#### 45 Proteomic Characterization Of Pericardial Fluid Using A Novel Magnetic Nanoparticles-Based Fractionation Approach

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**Aims:** We aimed to fractionate and characterize pericardial fluid (PF) proteome using magnetic nanoparticles coated with ethylenediaminetetraacetic acid (MNP@EDTA). Also, we aimed to extend the bio-data with clinical value collectable from PF analysis. **Introduction:** PF has long been recognized as a direct window to the heart and not just a mere plasma ultrafiltrate. It is hypothesized to be enriched with many bioactive substances, exerting an autocrine or a paracrine activity, such as cytokines, growth factors or cardiac hormones [1]. Thus, PF's molecular composition likely reflects heart's pathophysiological status. In this sense, proteomic analysis of PF is an important avenue for biomarker research and to pinpoint potential therapeutic targets. Nonetheless, PF analysis is abrogated by the presence of albumin, which can make up to 70% of total protein [2]. Hence, any strategy to remove albumin is welcome prior to proteomic analysis. Herein, we applied MNP@EDTA for the fractionation of PF proteome and for its characterization. **Methods:** We have fractionated and characterized PF proteome with MNP@EDTA or with an albumin-depletion commercial kit, following a GeLC-MS/MS approach. Then, gene ontology analysis was performed with ClueGO tool. **Results:** Similarly to a commercial kit, MNP@EDTA-based proteome fractionation was efficient in removing albumin and resulted in reproducible SDS-PAGE profiles. Overall, 185 proteins were identified, of which 85 were not previously assigned in PF. In comparison to the unprocessed sample, proteome fractionation by MNP@EDTA or by the kit resulted in similar increments of protein identification (40 vs. 38%). Although, gene ontology analysis showed that MNP@EDTA is more relevant to study fibrinolysis or complement system, while the commercial kit can be of interest for cholesterol transport studies. **Conclusion:** We characterized a new and affordable albumin depletion method that replaces traditional depletion kits to monitor specific heart diseases-associated biological phenomena, namely fibrinolysis and complement activity, with important diagnostic and prognostic implications.

#### 46 Treatment Of Myocardial Infarction Patients In Bosnia And Herzegovina – Where Are We Now And Where Are We Going?

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Medical faculty Tuzla

**Aims:** The goal of our research was to show the usage of PPCI treatment of STEMI patients in our country **Introduction:** Recanalisation of occluded artery and reperfusion of suffering myocardium is the most efficient therapy of STEMI (ST elevation MI) regarding reduction of mortality, length of hospitalization, invalidity and cost. Nowa-

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days there are two existing methods of reperfusion: 1) fibrinolytic therapy and 2) catheter technique of reperfusion so called Primary PCI (percutaneous coronary intervention). **Methods:** Using observational-comparative study, we have included patients from 17 medical facilities all over Bosnia & Herzegovina with diagnosed myocardial infarction. Gathered data refer to the period 2012-2015 and we have compared it with the data which was gathered earlier, before 2012, when only two centers used PPCI in treatment. **Results:** 21500(7000 annually) hospitalized patients in B&H with MI were included in our study - 9120 (3040 annually) of them were STEMI patients. The number of patients who were treated with PPCI increased from 126 per 100000 inhabitants (before the SFL initiative) to 316 patients per 1mil. inhabitants. We can see the increase from total of 15% to 41% STEMI patients treated with PPCI. But still, there are many hospitals in B&H in which fibrinolytic therapy is the only used method with 302 patients per 100000 people (39%). The biggest problem is the high number of non-reperused patients – 155 patients per 100000 (20%). Because of that, there is still high number of intrahospital deaths, about 8%. **Conclusion:** From our results, it is clear that treatment of STEMI patients in Bosnia and Herzegovina is much more improved during the last three years, but still insufficient and with a high number of inadequately treated patients in comparison with developed countries of the Western Europe. The main goal should be achieving the recommendations of the ESC (75% of MI patients treated by PPCI).

#### 47 The Impact Of Different Methods Of Standard Setting In The Proportion Of Fail And Pass In National Ranking Exam

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**Aims:** The aim was to assess the impact of two different methods of standard setting in the proportion of pass and fail in National Ranking Exam (NRE). **Introduction:** Nowadays, there is no minimum score in NRE which is used to access specialty formation. The Government wants to establish a pass and fail score in NRE, thus we decided to investigate the most appropriated method. **Methods:** To accomplish these goals we used two methods in NRE of 2011 and 2012: the Borderline group (which consisted in the 10% students with lowest graduation score) method and the Hofstee method. **Results:** In 2011, the proportion of fail and pass would be 7,21% with the Hofstee method and 29,75% with the Borderline group method. In this year, the Standard Error of Measurement (SEM) was 0.04781. In 2012, the proportion of fail and pass would be 9,47% with the Hofstee method and 27,64% with the Borderline group method. In this year, SEM was 0.04875. **Conclusion:** With the establishment of a cut-off point, doctors who fail will not be able to access specialty formation. According to our results, the application of Borderline group method would result in a proportion of fail and pass that we consider to be too high. Therefore, we suggest the application of Hofstee method because it results in a more appropriate proportion of fail/pass.

#### 48 Natural Killer Cell Expression Of Ccr4 Chemokine Receptor And Its Ligand Ccl5 (Rantes) Are Significantly Down-Regulated In Chronic Myeloid Leukemia Patients Treated With Tyrosine Kinase Inhibitors

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**Aims:** The aim of this study was to evaluate differences in Natural Killer (NK) cell chemokine and chemokine receptor expression in

Chronic Myeloid Leukemia (CML) patients under tyrosine kinase inhibitors therapy compared to healthy individuals. **Introduction:** Chronic Myeloid Leukemia is a cancer of white blood cells in which tyrosine kinase inhibitors (TKIs) constitute the first line of treatment. Natural killer cells, known for their antitumor cytotoxicity, are dysfunctional in CML. The way TKIs influence NK cells has not been extensively studied. In this study, NK cell expression of certain receptors and their ligands was evaluated in both CML and control samples. **Methods:** Using Flow Cytometry, NK cells from the blood from 10 healthy adults and 20 CML patients were analysed for CCR4, CXCR1, CXCR2 and CXCR3 receptor and CCL2 (MCP-1), CCL4 (MIP-1β), CCL5 (RANTES), CXCL8 (IL-8) and CXCL10 (IP-10) intracellular chemokine expression, totalling 159 samples for gating analysis. NK total, CD56bright and CD56dim cells subsets were used for control/CML comparison, both in absolute and relative frequencies and median of fluorescence intensity (MFI) of chemokine/receptor of interest. Mann-Witney test was used to evaluate statistical significance. **Results:** NK cells were found increased in CML patients after TKI therapy, although deficient in cytotoxic competence. Significant upregulation of the receptors CXCR2 and CXCR3 (NK CD56dim subset only) and downregulation of CCR4 and CXCR1 were found in CML NK cells. Intracellular staining of chemokines revealed a significant decrease in CCL5 and CXCL8. **Conclusion:** The most prominent result is the downregulated expression of CCR4 and ligand CCL5, which, accounting for their role, could help explain decreased NK cell activation in CML. The opposite variations for CXCR2 and ligand CXCL8, both involved in NK cell chemotaxis, should be investigated in future studies.

#### 49 Clinical And Histopathological Factors Associated With Novel Prognostic Markers Of Triple Negative Breast Cancer

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**Aims:** The main aim of the study was to evaluate the relationship between immunohistochemical expression of novel prognostic markers (HIF-1α, EPO, EPO-R) and clinicopathological features for patients with triple negative breast cancer (TNBC). **Introduction:** TNBC is defined by lack of expression of estrogen, progesterone and human epidermal growth factor receptor 2 (HER2). It represents 12.5-15% of all breast cancers. The outcome of TNBC is much more aggressive than in other types of breast cancer. **Methods:** Material for the study came from biopsies, excisional biopsies and modified radical mastectomies. The resulting histological sections were stained with different methods for diagnostic purposes. Routinely a basic immunohistochemical profile has been assessed, i.e. ER, PR, HER2 and Ki67. Also HIF-1α, EPO, EPO-R staining has been performed. All cases were grouped according to histological grading and clinical staging. **Results:** Histopathological examination was performed in tumors obtained from 162 patients suffering for breast cancer. We identified 111 (68.5%) triple negative and 51 (31.5%) non-triple negative breast cancers. Histopathologic subtyping of the TNBCs identified 89.1% invasive ductal carcinomas of no special type (IDC-NST). Most frequently TNBC has been described as G2, pT2, pN1. The non-TNBC subgroup demonstrated a statistically significant relationship only between the expression of Ki-67 and the histological grade (G1-G3) (p<0.001). In the TNBC subgroup we have found a strong correlation between the expression of Ki-67 and the histological grade (G1-G3) and the tumor size (pT1- pT4) (p=0.002; p=0.042), between the EPO-R and the histological grade (G1-G3) (p<0.001) and between the HIF-1α and the tumor size (pT1-pT4) (p=0.021). **Conclusion:** Clinicopathological factors of TNBCs assessed in the present study such as age and presence of lymph node metastasis did not show statistically significant correlation with HIF-1α, EPO, EPO-R expression. However, histological grading and tumor size seems to be correlated to these novel markers and Ki-67 expression.

#### 50 Unveiling The Urinary Proteome Using Chelating Magnetic Nanoparticles

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**Aims:** Our goal was to apply EDTA-coated magnetic nanoparticles (NPs@EDTA) for the fractionation of urine proteome and to compare protein profiles with those provided by the conventional ultrafiltration (UF) approach. **Introduction:** Urine is a highly attractive source of biological information and disease biomarkers, providing a window through which proteins can be assessed in order to non-invasively monitor pathophysiological conditions. The wide range of proteins' abundance in urine hinders the evaluation of other less abundant but equally informative ones, thus creating a need for currently lacking depletion/enrichment strategies. **Methods:** NPs@EDTA-based fractionated and unfractionated (UF) urinary proteins were subjected to GeLC-MS/MS for protein identification. **Results:** We have identified 443 distinct proteins, 384 of these using NPs@EDTA but only 200 using UF. Moreover, NPs@EDTA allowed larger urine volumes to be processed, which resulted in a greater number of unique identifications (~2-fold) at a lower cost when compared to UF samples. Highly abundant proteins (~72kDa, mainly albumin and uromodulin) were depleted while several less abundant ones were significantly enriched (e.g. Gastricrin, Biglycan, Neuroserpin, Cathepsin G and Prohibitin-2). Bioinformatics analysis showed that approximately 25% of NPs@EDTA-enriched proteins were annotated as displaying enzymatic activity, most of these being hydrolytic enzymes (60%), particularly proteases/peptidases (48%). **Conclusion:** NPs@EDTA allowed the identification of novel urinary proteins and the enrichment of several urinary tract disease-associated proteins, being thus a promising approach for future biomarkers discovery and validation studies, as well as a promising tool for clinical and pharmaceutical purposes.

- 51 Uncued Question Format Versus A Short Answer Question Format: Quality And Satisfaction Evaluation**  
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**Aims:** To assess the reliability and quality of an uncued question format (UQF), when compared to a short answer question format (SAF) in the course of Biopathology II at the Faculty of Medicine of Porto and compare the satisfaction of students in the test format change. **Introduction:** Multiple choices question (MCQ) format is associated with lower validity, reliability, precision and reproducibility when compared with the UQF. Other option is SAF, however little research has been done comparing psychometric properties of SAF to those of UQF. **Methods:** 218 students were tested using SAF and 283 students were assessed using UQF. We resorted to both the Classical Test Theory (CTT) and the Item Response Theory (IRT) to compare both types of questions. We also evaluated a questionnaire (227 students) in order to assess the student's satisfaction and preference. **Results:** We determined that the Difficulty and Discrimination Index between the first and second tests were not statistically different either through CTT ( $p=0.367$  and  $p=0.267$ , respectively) and IRT ( $p=0.318$  and  $p=0.0698$ , respectively). Results indicate that both approaches were reliable (Cronbach's Alpha: 0.9298 (SAF) and 0.9760

(UQF)). The students disagreed with the change in the model of evaluation (Mean=3.84). In general, students were not satisfied with the new answer sheet and, as expected, students who were not satisfied with the UQF (answer sheet and/or glossary) preferred the previous model of evaluation. We found no correlation between the student's classification and their preference with the new model of evaluation ( $p=0.428$ ). **Conclusion:** The change of format did not have an effect in the quality of the test, however the students were not very satisfied with the new format. Furthermore the new format was a more efficient tool in terms of time and resources saved by the correctors and faculty, in general.

- 52 Exercise Preconditioning Prevents Skeletal Muscle Wasting In Experimental Pulmonary Arterial Hypertension**  
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**Aims:** Our purpose is to investigate the impact of exercise preconditioning on skeletal muscle wasting in an animal model of PAH induced by monocrotaline (MCT). **Introduction:** Pulmonary arterial hypertension (PAH) is a progressive and frequently fatal disease characterized by increased pulmonary vascular resistance leading to right ventricular overload. PAH patients often present exercise intolerance and reduced ability to perform their daily physical tasks, compromising their quality of life. In part, this is thought to result from skeletal muscle atrophy, impaired contractility and intrinsic changes like decreased type I fibers. **Methods:** After 4 weeks of training or cage living, male Wistar rats were injected with MCT (60mg/kg) (ExMCT and SedMCT, respectively) or saline (ExC and SedC, respectively), and sacrificed after an additional 4-week-period of movement confined to cage's space. Gastrocnemius and blood samples were collected for biochemical analysis. **Results:** Sed+MCT showed decreased body weight, cross sectional area and MHC-I isoform and these changes were prevented in ExMCT group. Total Akt and mTOR protein levels were normal in all groups while its phosphorylated forms were increased in both exercised groups. In opposition to SED+MCT, exercise preconditioning prevented the rise in the expression of Atrogin-1 protein in ExMCT. **Conclusion:** The present study provides evidence that exercise preconditioning prevents cardiac cachexia by preventing skeletal muscle wasting and increasing protein synthesis.

- 53 Association Of Gsta1, Gstm1, Gstm1 And Gstp1 Polymorphisms With Malignant Phenotype Of Ovarian Carcinoma**  
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**Aims:** The aim of this study was to assess the association between the GSTA1 rs3957357, GSTP1 rs1695, GSTT1 and GSTM1 polymorphisms and susceptibility to ovarian cancer. Patients were stratified according to the International Federation of Gynecology and Obstetrics (FIGO) classification. **Introduction:** Glutathione S-transferases (GST) are superfamily of enzymes which are involved in both detoxification of exogenous and endogenous electrophiles and maintenance of cellular redox homeostasis. It has been hypothesized that presence of allelic variants, as consequence of GSTs polymorphism, could be associated with less effective detoxification of potential carcinogens, conferring an increased susceptibility to cancer. The results on the association between GSTs polymorphisms and the risk to ovarian cancer, as well as, with malignant phenotype of this cancer, are still scarce. **Methods:** DNA was isolated from the blood of 93 ovarian cancer cases and 178 controls. GSTA1 rs3957357 was determined using PCR-RFLP method, while GSTP1 rs1695 polymorphism was determined by real time PCR method. GSTT1 and GSTM1 polymorphisms were determined using qualitative PCR reaction. **Results:** The GSTA1, GSTP1 and GSTM1 genotype distribution did not differ significantly between controls and ovarian cancer cases. However, individuals with GSTT1

active genotype carried 2-fold risk of developing ovarian cancer (OR=2.00; 95% CI=1.00-4.01;  $p=0.049$ ). Even more, patients who were carriers of combination of GSTT1-active/GSTA1-active/GSTP1-referent genotype represented over 64% out of total number of patients within any of FIGO stages of ovarian cancer. **Conclusion:** According to our results, GSTT1 active genotype significantly increases ovarian cancer risk.

- 54 The Role Of Autophagy In Neurotoxicity Caused By Extracellular Asyn**  
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**Aims:** The aim of this study was to investigate the role of autophagy in neurotoxicity caused by extracellular ASYN. **Introduction:** The accumulation of alpha-synuclein (ASYN) in susceptible neurons is considered to be a major contributing factor in pathogenesis of Parkinson's disease. Although ASYN was considered as an intracellular protein, recent data suggest that it can be detected extracellularly. Autophagy plays an important role in ASYN degradation; therefore, impairment of autophagy could be an important contributor to ASYN accumulation. ATG (autophagy-related genes) proteins function at several physiologically continuous steps in autophagy, and Atg7 is considered as essential in autophagosome formation and maturation. **Methods:** All experiments were conducted in all-trans retinoic acid-differentiated human neuroblastoma SH-SY5Y cells that were exposed to extracellular ASYN. The presence of extracellular ASYN and the expression of autophagy markers, beclin-1 and LC3-II, were monitored using immunoblotting. Transfection with small interfering RNA (siRNA) was used to knock down Atg7 gene. Cell viability was assessed using crystal violet dye exclusion assay. **Results:** Extracellular ASYN caused significant loss of viability in differentiated SH-SY5Y cells accompanied by increase in expression of beclin-1 and in conversion of LC3-I to autophagosome-associated LC3-II. The RNA interference-mediated knock-down of Atg7 increased the sensitivity of SH-SY5Y cells to the extracellular ASYN-induced toxicity. **Conclusion:** Extracellular ASYN caused loss of viability in differentiated SH-SY5Y cells accompanied by autophagy induction. Having in mind that inhibition of autophagy through Atg7 knock-down increased cell death, we can deduce that autophagy has a protective role in the harmful effect of extracellular ASYN.

- 55 Cardiovascular Status In Endovascular Stenting For Aortic Coarctation**  
 Gonzaga S.<sup>1</sup>, Miranda J.O.<sup>2,3</sup>, Mota C.<sup>2</sup>, Baptista M.J.<sup>2,4</sup>  
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**Aims:** The main objective of this study is to evaluate cardiovascular function in patients with CoA submitted to stent implantation. **Introduction:** Coarctation of the aorta (CoA) is a major cause of secondary hypertension in children and young adults. **Methods:** This single-center study enrolled nine CoA patients submitted to stenting between 2009 and 2015 and control group of 19 healthy individuals. Cardiovascular risk factors and echocardiographic parameters, including 2D-speckle tracking and carotid intima thickness (cIMT) were evaluated. Cardiovascular response to dynamic and isometric exercise was evaluated and compared with control population. Patients' quality of life perception was evaluated with age-specific questionnaires: "Pediatric Cardiac QOL Inventory" and "WHOQOL-BREF". **Results:** Patients aged between 10 to 24 years and follow-up time was 4 months to 6.5 years. All of the patients presented normotensive at rest and with exercise test, except for one that was hypertensive in both conditions. Three patients were under antihypertensive therapy. None of the patients presented signs of recoarctation, three patients presented left ventricle hypertrophy. Overall, EF and SF were normal (64.9±2.2% and 36.3±1.4%, respectively), however global

longitudinal strain (GLS) was diminished in three patients. Diastolic dysfunction was observed in three patients. One patient presented RV systolic dysfunction, with decreased TAPSE and S' velocity. cIMT of younger patients was increased (>P90), whereas older patients presented normal values. Isometric contraction was not diminished neither in pediatric patients nor in adult patients, when compared with control population. Both younger and older patients reveal high levels of quality of life perception. **Conclusion:** Despite successful improvement of CoA by endovascular stenting, and no signs of re-CoA, patients are prone to hypertension, or need antihypertensive therapy. Although global function was preserved, some patients presented signs of ventricular hypertrophy and/or diastolic dysfunction. These results support the need to a lifelong vigilance with particular focus and control for cardiovascular risk factors.

- 56 Extended Spectrum B-Lactamase Producing Escherichia Coli Intestinal Colonization And Uropathogenic Virulence Factors In University Students Of Porto**  
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**Aims:** This study aimed to detect extended-spectrum-beta-lactamase (ESBL) producing Enterobacteriaceae intestinal colonization of healthy young adults from University of Porto (UP). We aimed also to detect and characterize virulence genes of the selected isolates. Transferability of the resistance and virulence genes by conjugation was also studied. **Introduction:** Antibiotic resistance is a growing problem and ESBL are increasing their relevance at medical level. They make bacteria resistant to all beta-lactams with exception of carbapenems and ceftazidime. Escherichia coli (E. coli) is the most common agent of urinary tract infections in healthcare institutions and community. **Methods:** Faecal samples of 30 students from UP (ICBAS and FFUP) were analysed. Isolates were selected on MacConkey agar with cefotaxime, ceftazidime and meropenem (2 mg/L). Susceptibility to antibiotics was achieved by disc diffusion methods according to the CLSI and identification of the isolates was performed by API20E and ID32GN. ESBL-producers were detected and/or confirmed by the double-disk-synergy-test and clavulanic acid addition. PCR was performed for detection of blaTEM, blaOXA, blaSHV, blaCTX-M-group-1, blaCTX-M-group-2, blaCTX-M-group-8, blaCTX-M-group-9, blaCTX-M-group-25, tetA, tetB genes, and for 32 virulence factors and pathogenicity-associated-island-PAI. Sequencing was performed using group-specific primers for CTX-M-group-1 and CTX-M-group-9. Conjugation assay using E. coli K802N as recipient strain was performed to study the transferability of resistance and virulence genes in selected E. coli isolates. **Results:** Three E. coli isolates were obtained from 2 students. Colonization with ESBL producing E. coli, in our sample was 6.7%. E. coli isolates showed blaCTX-M-group-1 (n=1), blaCTX-M-group-9(n=2), blaTEM(n=2), blaSHV (n=1) and tetA (n=2) genes. Additionally, isolates showed specific virulence factors, namely fimH, traT, fyuA, iutA and cvaC related with uropathogenic E. coli. Transconjugants showed blaCTX-M-group-9, blaTEM, blaSHV, tetA, traT, iutA and cvaC transference. **Conclusion:** Healthy young adults might be colonized with uropathogenic antibiotic resistant commensals, creating a risk of infection and silent dissemination of these threats.

- 57 2',4'-Dihydroxy-3,4,5-Trimethoxychalcone Analogues: Synthesis, Biological Activity And Docking Studies**  
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**Aims:** Synthesis of new chalcone derivatives with promising antitumor activity. **Introduction:** Natural chalcones have been intensively studied for their wide range of biological activities, namely antitumor, being this activity associated with, at least in part, to their ability to promote cell cycle arrest by interference with mitosis [1]. Recently, as result of the search for new antitumor small molecules by our group 2',4'-dihydroxy-3,4,5-trimethoxychalcone (1) has been identified as an antimitotic agent [2]. **Methods:** 2',4'-dihydroxy-3,4,5-trimethoxychalcone (1) analogues were synthesized by base catalyzed Claisen Schmidt condensation via microwave assisted organic synthesis (MAOS). The antiproliferative activity was assessed using SRB assay. Tubulin-targeted docking was carried out using AutoDock Vina (Molecular Graphics Lab, CA, USA). **Results:** Four chalcone derivatives were synthesized. Additionally, in vitro growth inhibitory activity on three human tumor cell lines were evaluated. Docking scores of synthesized chalcones on colchicine binding site of tubulin were also obtained. **Conclusion:** All synthesized chalcones revealed to be potent growth inhibitors of human tumor cell lines. In the future the interference of these compounds with mitosis will be determined.

**58 Exercise Training Normalizes Adipose Tissue Function And Induces A Fat Burning Phenotypical Change In A Rat Model Of Metabolic Syndrome**

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**Aims:** This study aimed to assess the effect of exercise training (ET) on adipose tissue (AT) function in a rat model of metabolic syndrome (MS). **Introduction:** The impact of obesity on health is applied on clinical models of disease, such as the MS, stating that obese individuals have an increased cardiovascular risk. **Methods:** Male ZSF1 rats (age=15 weeks) were divided in 3 groups: lean (control; n=6) and obese (ObSED; n=6) sedentary groups (4 weeks with movement confined to the cage's area); and exercised obese rats (ObEX; n=6; 5wk treadmill ET, 60min/day, 5 days/week, 15m/min). At the end of the protocol, all animals were sacrificed and plasma and AT specimens were obtained for biochemical analysis. **Results:** No differences were found for body weight or gastrocnemius mass between ObSED and ObEX groups (p>0.05 vs lean). Exercise improved cardiac function. Plasma biochemical analysis revealed that lipid (CT and TG) levels were significantly elevated in both obese groups (p < 0.05 vs lean) but the levels of the hormone-sensitive lipase were significantly increased in ObEX, suggesting increased lipolysis. Obese-associated AT endocrine dysfunction was reversed by exercise, as it normalized adiponectin, leptin and ghrelin protein expression (p<0.05 vs ObSED). ET further induced a phenotypical change in AT, from the fat-storing WAT to the fat-burning BAT, as indicated by increased expression of UCP 1 and PGC1-alpha in ObEX (p<0.05 vs ObSED). This was due to irisin which was down regulated in ObSED (p<0.05 vs lean) and normalized in ObEX (p>0.05 vs lean). **Conclusion:** In a rat model of MS, ET prevented against cardiac mal-adaptation, AT dysfunction and promoted the fat-burning phenotype change through the browning of AT. Our data suggest that the benefits of ET go beyond body weight reduction, as the qualitative changes described here were independent of body weight loss.

**59 The Different Bi-Ventricular Adaptations Induced By Lifelong Moderate Exercise Training In An Experimental Model Of Active Aging**

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**Aims:** We aimed to characterize and compare the bi-ventricular adaptations induced by one year of moderate exercise training. **Introduction:** Sedentary aging is strongly associated with an increased risk of developing cardiovascular dysfunctions. Exercise training was shown to provide a unique cardioprotective phenotype but little is known about the mechanisms by which these adaptations are induced. **Methods:** Twenty Sprague-Dawley females with an average of 5 weeks were randomly separated in 2 groups: EX, subjected to 54 weeks of training, 5days/week, 1h/day, 20m/min; and SED, subjected to 54 weeks of sedentary. In the end of the protocol, all animals were subjected to echocardiographic and hemodynamic evaluation followed by sample collection for histology and molecular biology studies. **Results:** Right ventricle (RV) presented a decrease in muscle mass and hypertrophy of the myocytes (p<0.01 vs SED) as well as less interstitial fibrosis (p<0.01 vs SED). These alterations were paralleled by lower maximum systolic pressure (Pmax) (p<0.001 vs SED), lower end-systolic pressure (ESP) (p<0.01 vs SED) and lower dP/dtmin (p<0.05 vs SED) as well as a decrease in the medium layer of pulmonary arteries (p<0.05 vs SED). In the left ventricle (LV), EX group presented an increase in Pmax, ESP and decrease in end-diastolic pressure (EDP) (p<0.05 vs SED). These alterations were followed by an increase in myocytes hypertrophy (p<0.001 vs SED) and decrease in interstitial fibrosis (p<0.05 vs SED). EX group also presented a decreased resting heart rate (p<0.05 vs. SED). Biochemically, the RV from the EX group presented increased protein expression of PGC1α/citrate sintase (CS), Tfam/CS, SIRT3/CS and MnSOD/CS ratios (p<0.05 vs SED). No alterations were found in the protein expression of MCH-beta/alpha ratio, ATPsintase beta, GAPDH, mitochondrial profile, ETFDH, RAF1, Tfam, SIRT3, connexin-43 and c-Kit of the RV and LV, in isolation (p<0.05 vs SED). **Conclusion:** Our study suggests that both ventricles suffer distinct functional and molecular adaptations in response to ET, with the RV adopting a more anti-oxidant phenotype.

**60 Does Chronic Juvenile Administration Of Sodium Valproate Induce Movement Disorder And Cognitive Loss In Adult Rats? Namitha Nair<sup>1</sup>, Sampath Madhyastha<sup>2</sup>**

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**Aims:** To investigate whether chronic administration of sodium valproate in juvenile period causes movement disorder and cognitive loss during early adulthood **Introduction:** Children with seizure disorder are often treated with sodium valproate (SV) for a long term. SV acts mainly through gamma amino butyric acid, reducing the excitatory neurotransmission and modifying the monoamine concentration. Altered neurotransmission by SV is expected to cause movement disorder and cognitive decline which is believed to be reversible after withdrawal of treatment. However it is not clear whether such adverse effect continues during adulthood. **Methods:** Sixteen day old male wistar rats received either 200 or 400mg/kg dose of SV for 45 consecutive days and another group served as control. At postnatal day 90, rats were tested for movement disorder (open field, movement analysis, oro-facial movement and inclined plane tests) and cognitive assessment (T maze test). **Results:** Chronic sodium valproate treatment of juvenile rats resulted in slow movement, tremors during adulthood but did not affect muscle tone, locomotor and exploratory activities. However it has caused cognitive dysfunction in adult rats. **Conclusion:** Even after discontinuation of the drug, persistence of cognitive impairment, tremors and generalized slow movement observed in this study warrants a close monitoring system in children when they receive long term treatment with sodium valproate.

Abstracts

Abstracts

**61 Cholinergic Deafferentiation Of The Dentate Gyrus Does Not Potentiate Epilepsy-Related Loss Of Hilar Neurons**

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**Aims:** The aim of this study was to test the hypothesis that acetylcholine has neuroprotective role in epilepsy. **Introduction:** Temporal lobe epilepsy (TLE) is frequently comorbid with memory deficits, which may result from damage to the hippocampal formation (HF). In TLE, seizures are initiated in HF, due to low efficacy of its inhibitory mechanisms. In animals, kainic acid (KA) produces cell loss in HF and spontaneous seizures. Moreover, KA-induced loss of somatostatin-producing cells in HF is augmented by removal of cholinergic afferents. However, these data do not prove neuroprotective effects of acetylcholine, because reduced immunostaining for somatostatin does not necessarily mean neuronal death. Herein, we evaluated the effect of selective removal of hippocampal cholinergic afferents on seizure-induced total neuron loss in the dentate gyrus (DG) hilus. **Methods:** Epilepsy was induced in rats using KA model of status epilepticus. Removal of cholinergic afferents was achieved by either unilateral or bilateral stereotaxic infusions of the conjugated immunotoxin 192 IgG-saporin into DG. Two sets of systematically sampled brain sections obtained from these rats were used for (1) immunocytochemical staining with primary antibody for the vesicular acetylcholine transporter, VAcHT, and (2) Nissl staining. The density of the VAcHT-positive fiber varicosities and the total neuron numbers were estimated in DG hilus. **Results:** The density of cholinergic varicosities was lower in KA groups vs. control group, in unilateral saporin vs. KA alone groups, and in bilateral vs. unilateral saporin groups. On the other hand, epileptic condition was associated with 60% loss of hilar cells. However, a similar cell loss was found in saporin-pretreated rats. The total numbers of hilar cells did not differ between groups treated with saporin unilaterally and bilaterally, and between the left and right hippocampi in unilaterally treated rats. **Conclusion:** These findings show that epilepsy-related hilar cell loss is independent of cholinergic deafferentiation.

**62 Social Network In Academic Dishonesty**

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**Aims:** The aim of this study is to estimate the true prevalence of cheating among medical students using a statistical index developed for this purpose, and to explore the existence of social networks between cheating students. **Introduction:** Most studies on academic cheating rely on self-reported questionnaires and focus on the individual, overlooking cheating as a group activity. **Methods:** The Angoff's A index was applied to a sample of 30 written examinations from the academic term of 2014/2015 of the Faculty of Medicine of the University of Porto to detect cheating pairs. Through simulations, the sensitivity and specificity of the statistical method was determined and the true prevalence of cheating was estimated. Networks of cheating pairs were created to search for patterns and to calculate their density. **Results:** The true prevalence of cheating was estimated to be 6.29% (3.78-10.22% 95%CI). The percentage of students who cheated at least once increased with year of the course, being lowest in the 1st year (3.4%) and highest in the 5th (17.3%). The year of the course was associated with cheating (p<0.5). The networks' density was the lowest in the 1st year (1.12E-04) and the highest in the 5th (8.20E-04). **Conclusion:** These findings suggest that some students are involved in social networks of cheating, which grow with time, resulting in an increase of cheating in the latter academic years.

**63 Urocortin-2 Improves Right Ventricular Function And Attenuates Experimental Pulmonary Arterial Hypertension**

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**Aims:** To analyze the effects of urocortin(UCN)-2 treatment in an animal model of pulmonary arterial hypertension(PAH). **Introduction:** UCN-2 has shown promising therapeutic effects in humans and animal models with heart failure(HF)(1). However, the UCN-2 role in the pathophysiology of PAH stills unknown. **Methods:** Male Wistar rats received monocrotaline(MCT,60mg/Kg) or vehicle. Additionally, in order to differentiate indirect from direct myocardial effects of UCN-2 treatment, we used a model of right ventricle(RV) hypertrophy without PAH (pulmonary artery banding-PAB). Thus, another set of rats were subjected to PAB or sham operation. The study resulted in 7 groups: CTRL(n=9), CTRL+UCN-2(n=9), MCT(n=7), MCT+UCN-2(n=10), SHAM(n=8), PAB(n=9), PAB+UCN-2(n=9). After 2 weeks, animals received UCN-2(5µg/Kg/day) or vehicle. Functional studies and samples collection were performed 4 weeks after MCT injection/PAB operation. **Results:** Hemodynamic studies revealed that MCT group developed PAH, as shown by increased RV end-systolic pressure, end-diastolic pressure, RV dilation, decreased cardiac output, and ejection fraction. UCN-2 treatment resulted in attenuation of these changes. Moreover, the survival rate for UCN-2 treated rats was higher than for MCT rats and UCN-2 treatment was able to increase exercise tolerance in animals with PAH. PAH rats presented RV hypertrophy, as shown by the morphometrical analysis(RV weight/tibia length ratio) and by histology(cardiomyocyte cross-sectional area), and UCN-2 treatment attenuated RV remodeling. Molecular studies showed that MCT group presented increased UCN-2 expression and decreased CRHR2 expression in the RV, which was reversed by UCN-2 treatment. The increased expression of pathology markers in MCT animals(BNP, ET-1 and HIF-1α), as well as markers of apoptosis(caspase-3 and caspase-8) were attenuated by UCN-2. Moreover, UCN-2 treatment also reverted RV morphohistological changes in animals submitted to PAB. **Conclusion:** UCN-2 treatment attenuated PAH and RV dysfunction and increased survival in MCT-induced PAH, and had direct anti-remodelling effects on the pressure-overloaded RV. UCN-2 might be a new therapeutic option for PAH and RV heart failure.

**64 Exemestane In Breast Cancer: Evaluation Of The Autophagy Role In Acquired-Resistance**

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**Aims:** The aim of this work is to evaluate the role of autophagy in Exe-acquired resistance process. **Introduction:** The use of aromatase inhibitors (AIs) is one of the therapeutic approaches for estrogen-receptor positive (ER+) breast cancer, being Exemestane (Exe) the third-generation steroidal AI used in clinic. Besides its therapeutic success, acquired resistance may develop causing tumor relapse. Thus, it is important to search for new targets to surpass Exe-acquired resistance. Our group showed that Exe induces apoptosis also a possible pro-survival mechanism of resistance. Moreover, PI3K/Akt is considered the major pathway in endocrine resistance. Therefore, using an AI-resistant breast cancer cell line (LTEDaro) it was investigated the role of autophagy in Exe-resistance process. **Methods:** The effects on Exe-treated LTEDaro cells exposed to the PI3k inhibitors, Wortmannin (WT) and LY294002 (LY), and to the autophagic inhibitor, Spautin-1 (SP) in cell cycle progression were studied by flow cytometry. Autophagy was also analysed by flow cytometry and by LC3 turnover through Western blot. The occurrence of apoptosis was confirmed by evaluation of caspases-7, -8, -9 activities using a luminescence assays and ROS formation by a fluorescence assay. **Results:** Results demonstrate that LY and WT induced a G0/G1 cell cycle arrest in Exe-treated LTEDaro, after 3 days, while, at 6 days, WT caused a G2/M arrest. SP induced a G2/M arrest. Moreover, all the compounds, decreased Exe-induced autophagy and induced apoptosis. LY and WT activated mitochondrial apoptotic pathway, while for WT a cross-

talk with an extrinsic pathway player was also observed. SP induces apoptosis with caspase-8 activation. None of the inhibitors increased ROS formation. **Conclusion:** Thus, by modulating autophagy it may be possible to re-sensitize acquired-resistant breast cancer cells to Exe therapy. This work provides new insights in breast cancer elucidating the mechanisms and targets involved in Exe-acquired resistance.

**65 Modulation Of Cardiac Structure By Cardiac Visceral Adipose Tissue**

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**Aims:** We aim to characterize the profile of CVAT under conditions of DHF and to evaluate their possible changes in cardiac structure. **Introduction:** Diastolic heart failure (DHF) is associated with obesity. In obesity, due to adipocyte dysfunction, there is an increased secretion of proinflammatory adipokines. These adipokines produced by cardiac visceral adipose tissue (CVAT) can act in a paracrine manner on myocardium and influence their structure and function. **Methods:** CVAT of 20-weeks-old lean (lnZSF1) and obese (obZSF1) ZSF1 rats was collected for: 1) separation of proteins to mass spectrometry identification, 2) adipokines' expression, 3) adipocytes fibrosis and cross-sectional area assessment, 4) for 24h DMEM incubation to obtain conditioned media (CM). Organotypic cultures were prepared from 7-days-old Wistar Kyoto cardiac explants and incubated for 24h with the CM previously obtained from both groups. After incubation, cross-section area of cardiomyocytes and fibrosis were evaluated. **Results:** In CVAT of the obZSF1, the results presents a decrease of 3-ketoacyl-CoA thiolase protein enzyme as a compensatory mechanism in order to inhibit fatty acid oxidation and an increase of lumican and collagen-alpha-1(I) proteins suggesting a link between inflammation caused by obesity and increases of adipose tissue extracellular matrix. The histological and molecular studies of CVAT revealed hypertrophy of adipocytes in obZSF1 (1505±80.01µm<sup>2</sup> vs. 7595±265.5µm<sup>2</sup>, p<0.0001) without fibrosis and a significantly increase in expression of adipokines. Among these overexpressed adipokines are visfatin (0.42±0.18AU vs. 1.4±0.33AU, p<0.05), leptin (0.12±0.032AU vs 0.93±0.18AU, p<0.0001), apelin (0.08±0.03AU vs. 0.24±0.04AU, p<0.05) and chemerin (0.33±0.096AU vs. 0.90±0.16AU, p<0.05) that are involved in fibrosis and hypertrophic pathways. In organotypic cultures, CM from obZSF1 CVAT rats triggered a significant increase in the cross-sectional area of cardiomyocytes (100.7±18.98µm<sup>2</sup> vs. 111.25±24.02µm<sup>2</sup>, p<0.05) and in fibrosis (3.48±1.51% vs. 4.79±1.53%, p<0.05) compared to the CM from lnZSF1. **Conclusion:** Obesity promotes alterations in CVAT profile which alter the myocardial structure, inducing collagen deposition and cardiomyocyte hypertrophy.

**66 Microna-146A Expression Is Increased In Human Pah**

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**Aims:** This work aimed to evaluate the expression of miR-146a in the development of PAH. **Introduction:** Pulmonary arterial hypertension (PAH), is the most serious chronic disorder of the pulmonary circulation. PAH remains incurable, and new therapeutic approaches are required (1). MiR-146a promotes vascular smooth muscle cell proliferation and vascular neointimal hyperplasia, both important hallmarks of PAH (2). Additionally, inhibition of miR-146a eliminates the hypertrophic response and HF induced by left ventricular pressure overload. Recent studies have shown that miRNA-146a represses several signalling pathways, which play a major role in PAH and RV fai-

lure (3). **Methods:** RV samples were obtained from autopsies, heart transplantation or cardiac surgery, and were categorized as normal RV (NRV, n=4), compensated RV hypertrophy (CRVH, n=5) and decompensated RV failure (DRV, n=7), based on clinical history and the tricuspid annular plane systolic excursion (TAPSE). Lung tissue samples were collected from explanted lungs or during lung resection from healthy segments (n=4 in both groups). Blood was collected from control (n=5) and PAH patients (n=11). **Results:** MiR-146a expression was increased in the RV of patients with DRVH, when compared to NRV (p=0.0439). This increase in expression was inversely correlated with decreased function as measured by TAPSE (spearman r=-0.8649, p=0.0135). RV samples from CRVH patients showed no differences in MiR-146a expression when compared with NRV (p>0.9999). Lung tissue from PAH patients showed a significant increase in miR-146a levels when compared to control patients (p=0.0286). No differences were observed in the buffy coat of patients with PAH compared to control patients (p=0.7743). **Conclusion:** Our findings show that miR-146a expression is increased in both the RV and Lung of PAH patients, suggesting that this miRNA might play an important role in the pathophysiology and progression of PAH. Modulation of this miRNA might prove to be beneficial in the treatment of this condition.

**67 Xanthohumol Restores Hepatic Glucolipid Metabolism Balance In Type 1 Diabetic Wistar Rats**

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**Aims:** Identify molecular mechanisms associated with hepatic glucolipid metabolism imbalance in type 1 diabetic (T1D) Wistar rats; Evaluate the effect of xanthohumol (XN)-enriched stout beer consumption in these pathways. **Introduction:** Diabetes is a major public health problem worldwide. Beer-derived XN exhibits anti-inflammatory, anti-angiogenic and anti-apoptotic effects, three processes exacerbated in diabetes, as well as in metabolism. Thus, we propose to evaluate the metabolic effects of XN in T1D rats. **Methods:** Eight week-old healthy male Wistar rats were divided into five groups (n=6 each): diabetic rats drinking water; treated with 5% ethanol; treated with stout beer; treated with stout beer supplemented with 10mg XN/L; and healthy rats drinking water (control group). T1D was induced by an intraperitoneal injection of streptozotocin. After 48h the diabetic condition was confirmed by measuring blood glucose content (>250mg/dL). The animals were euthanized 5 weeks later. Hepatic H&E, PAS, Reticulin and Oil Red histological staining were performed and quantified using ImageJ®. Apoptosis was assessed by a TUNEL assay. Expression of pACC/ACC ratio, FAS and GLUT2 levels were evaluated by Western blotting. **Results:** Diabetic rats showed liver glycogen reduction, and increased apoptosis and fibrosis compared to control group. XN consumption attenuated these three parameters to control values. Lipogenesis was assessed by pACC/ACC and FAS expression. Increased pACC/ACC ratios and decreased FAS levels were found in diabetic rats. XN reverted the expression of these two metabolic enzymes. **Conclusion:** T1D Wistar rats presented decreased glycogen and increased lipogenesis. XN consumption interfered with liver metabolic homeostasis, reverting glycogen depletion, reducing beta-oxidation and attenuating apoptosis and fibrosis, implying an effect in inflammation. Altogether these findings reveal that XN can be a therapeutic agent against liver metabolic changes in T1D.

**68 Computational Studies Addressed To Histidine Decarboxylase**

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**Aims:** The main goal of this project was the characterisation with atomic detail the catalytic mechanism of mammalian Histidine decarboxylase (mHDC) through computational means. **Introduction:** mHDC is an enzyme that requires pyridoxal-5'-phosphate (PLP) as a cofactor [1-3]. mHDC belongs to the group II of PLP-dependent decarboxylases, and catalyses the L-histidine decarboxylation from which results histamine. Histamine is important in several physio-

logical events such as immune response, gastric system modulation, and also as a neurotransmitter. Unfortunately, several diseases are related to the deregulation of histamine production, i.e., atopic dermatitis, allergies, and cancer. **Methods:** This study used the recent X-ray structure of mHDC (PDB: 4E10) [4] and an ONIOM QM/MM methodology. The MM part was always considered under molecular mechanics approach, whereas the QM part was calculated using DFT method B3LYP/6-31G(d) for geometry optimizations and M06/6-311++G(3df,2pd) for single point-energy calculations. **Results:** This work confirmed a two-step type of catalytic mechanism. The first step is the rate-limiting one (ΔG‡ = 12.70 kcal/mol; ΔGr = 10.52 kcal/mol), and involves the decarboxylation of the substrate and, the formation of a stable carbanion (quinonoid intermediate). In the second step, the quinonoid intermediate is protonated by a tyrosine residue from which results histamine (final product). This step is faster than the first one (Ea= 2.87 kcal/mol) and, in contrast, is a high exothermic step (Er = -26.02 kcal/mol). **Conclusion:** This work showed that experimental data does not always give accurate information about the structure of biomolecular complexes. Additionally, a fully atomistic description of the catalytic mechanism of HDC was achieved, elucidating about the important role played by several amino acids from the active site. This data can now be useful for the development of new drugs to treat histamine-related diseases.

**69 The Effect Of Chemotherapy On Bone Mineral Density As Measured By Contrast Ct In Young Adults With Aggressive Lymphoma**

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**Aims:** Study chemotherapy effect on bone mineral density (BMD) of young adults with aggressive lymphoma using contrast CT. **Introduction:** Pediatric and elderly patients treated for lymphoma with steroid and alkylator based regimens have an increased incidence of osteoporosis. Chemotherapy effect on BMD of young adults with lymphoma who have achieved peak bone mass remains to be explored. **Methods:** Records between January 1st 2010 and December 31st 2015 in Prince of Wales hospital were reviewed; patients 20 to 50 years of age treated with curative intent for aggressive lymphoma who underwent baseline and post treatment CT scans were chosen. Clinical data were collected. CT scans reviewed; BMD of L1 to L3 spine and bilateral femoral neck was assessed by drawing a region of interest (ROI) and identifying the mean attenuation values (HU). Paired sample t-test was used for comparison of baseline and post treatment CT. **Results:** 12 patients were included, median age was 41; 5 male and 7 female. 9 patients with diffuse large B cell lymphoma received R-CHOP, 1 Hodgkin's received ABVD, 1 Burkitts received R-hyperCVAD and 1 anaplastic large cell lymphoma received m-BACOD. 5 patients had Ann Arbor Stage III-IV disease and 1 had bone marrow involvement at diagnosis. No fractures were apparent on baseline or post-chemotherapy CT. There was a significant decrease in HU at L3 (-28.2, p=0.006) and both right (-33.7, p=0.005) and left (-27.1, p=0.03) femoral necks between baseline and post-chemotherapy CT. **Conclusion:** Young adults with aggressive lymphoma sustained significant loss in BMD at the L3 spine and the neck of the femur after curative intent therapy. Routine measurement of HU at baseline and follow-up contrast CT could be effective in monitoring bone loss. Longer follow up is necessary to assess if BMD loss is persistent and if osteoporotic fractures result.

**70 Chronic Effect Of Ethanol On Adipocyte Biology**

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**Aims:** The aim of this study was to determine the effect of ethanol upon preadipocytes viability and differentiation using the cell line 3T3-L1. **Introduction:** Alcohol consumption has been a worldwide problem. Alcohol chronic consumption has been pointed out as a deregulator of metabolic pathways and adipokines secretion, contributing to the inflammatory environment associated to obesity and ectopic fat accumulation [1]. Adipose tissue is a multicellular tissue with endocrine, metabolic and immune functions, setting a systemic interplay with other organs, through the production of a variety of bioactive peptides, termed adipokines. Adipogenesis, the tightly regulated cellular differentiation process through which preadipocytes are converted in mature adipocytes, is essential to the renewing of this tissue. Understanding the complexities of adipogenesis is of major relevance to human disease, as adipocyte dysfunction contributes to the obesity-related complications associated to cardiovascular diseases. **Methods:** 3T3-L1 preadipocytes were seeded at a density of 2x10<sup>3</sup> cell/cm<sup>2</sup> into 24 or 96-well plates. After 48h of culture, cells were treated with ethanol at increasing concentrations (0.1%; 0.5%; 1%; 5%; 10%) for 24h. Cell viability was analysed by MTT and LDH activity assays and proliferation by a BrdU assay. Statistical analysis was performed using ANOVA test followed by Bonferroni's test. Results are shown as mean ± SEM. **Results:** The preliminary results obtained with the LDH viability assays showed a significant increase in cellular viability when cells were exposed to 1% (146% ± 11%; n=6) and 5% (308% ± 60%, n=6) ethanol and no effect with the other tested concentrations. Experiments on the effect of ethanol along the differentiation process of preadipocytes (into mature adipocytes) are currently ongoing and respective findings will be also presented. **Conclusion:** Our preliminary results showing that ethanol is able to increase preadipocyte viability suggest that it may also impact preadipocyte proliferation and ultimately lead to an increase of fat mass.

**71 Investigation Of Oxidative Damage And Mitochondrial Function In Rotenone Induced Neurodegenerative Cell Model**

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**Aims:** To investigate mitochondrial function and oxidative stress induction on human neuroblastoma SH-SY5Y cells treated by rotenone. **Introduction:** Functional and morphological damage of mitochondria seems to be very important mechanism in pathogenesis of Parkinson's disease, the second most prevalent neurodegenerative disease. **Methods:** Effects of rotenone on SH-SY5Y cells viability is measured by MTT test. Mechanism of action is investigated by flow cytometry, presence of superoxide anion, mitochondrial depolarization using MitoSOX and JC-1 fluoroprobes, respectively, whereas fragmentation of nuclear DNA will be investigated using propidium iodide, followed by flow-cytometric analysis. **Results:** Our results confirm that rotenone causes dose and time dependent decrease in viability of investigated cells. After 24h exposure, the results of MTT showed decreased viability of treated human neuroblastoma cells, compared to controls, though the viability of cells exposed to the highest concentration was 75%. After 48h exposure, IC50 concentration was 0.375µM. Results of superoxide anion production suggest dose dependent stimulation of free radicals production and that the process is marked in early stage of neurotoxin action. After incubation of 2h and 6h, the production of superoxide anion, with concentration of 100nM, was higher 1,32x and 1,58x, respectively, compared to control. With concentration of 200nM in the same time periods, values were higher 3,11x and 1,76x, respectively. The same duration of rotenone exposure (200nm) led to dose dependent depolarization of internal mitochondrial membrane (FL1/FL2=1,3; compared to control: FL1/FL2=1.0). Also, investigated substance caused dose dependent slow-down of cell cycle. **Conclusion:** Rotenone has significant neurotoxic effect on investigated human neuroblastoma SH-SY5Y cells. Mechanism of cytotoxic effect is production of superoxide anion and induction of oxidative stress which leads to depolarization of mitochondrial membrane, followed by decreased cell cycle progression.

- 72 **Does Chronic Juvenile Administration Of Sodium Valproate Cause Neuronal Damage In Caudate, Putamen And Hippocampal Region Of The Rat Brain?**  
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**Aims:** To investigate whether chronic juvenile treatment of sodium valproate (SV) causes neuronal damage in caudate, putamen and hippocampal region of the rat brain. **Introduction:** SV is one of the choice of drugs in childhood seizure disorders. It acts through sodium channels on the cell membrane inhibiting repetitive firing of neurons and reduces the release and effects of excitatory amino acid in some specific regions of the brain. Chronic SV treatment is known to cause reversible Parkinson's like disease, choreiform movements and also cognitive decline. It is unclear whether these adverse effects involve cellular damage in the adult rat brain or not. **Methods:** Sixteen day old male wistar rats received either 200 or 400mg/kg dose of SV for 60 consecutive days and another group served as control. At postnatal day 76, rats were sacrificed, brains were removed and processed for histopathological studies. Coronal sections of caudate, putamen and dorsal hippocampal regions were stained with Nissl stain and neurons were screened under the microscope and quantified using an image analysis software. **Results:** The qualitative and quantitative analysis did not reveal any significant changes in the hippocampus and caudate putamen regions of the rat brain after chronic juvenile SV treatment. **Conclusion:** The long term SV induced extrapyramidal dysfunctions and cognitive dysfunction does not involve neuronal loss, but may involve other mechanisms which need to be investigated further. There is also a scope to evaluate the neurogenesis and neuronal proliferation during postnatal development after juvenile treatment with sodium valproate.

- 73 **Pfm-Le Vsd Coils In Closing Left Ventricle – Right Atrium Shunt Septal Defects In Children**  
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**Aims:** The purpose of the study is to present our experience with new system in LV-RA shunt closing in atrioventricular septal defects in children. **Introduction:** LV-RA shunt (Gerbode syndrome) is a rare defect - since 1990 to 2014 only 90 cases were described. Interventional VSD closing allows for avoiding surgery and is indicated when operative access is difficult and with high risk. The choice of implant type depends on VSD location, size, number and interventional team experience. One of the methods used to close of the various types of VSD is Nit-occlud Spiral Coil system. **Methods:** Our study consisted of 5 (3 female and 2 man) patients aged from 8 to 18 year, qualified after preliminary echocardiographic evaluation. All 5 patients with acquired LVRA shunts were diagnosed as a complication of previous cardiac operations. The implants location, size and number were determined based on angiocardiography results. The procedure was in keeping with the manufacturer protocol. Treatment results were analysed considering following aspects: periprocedural and long-term mortality, hemodynamic parameters in echocardiography, complication during and after intervention and its efficacy. **Results:** The size of LV-RA shunt was from 3 to 6 mm measured based on angiography. In all with LV-RA shunts the procedures were successful without complications. Mortality and other post-operative complications hasn't occurred in our patients. In follow-up were no residual shunts and no rhythm disturbances were observed. The LV systolic and diastolic function was normal. All patients showed considerable improvement of their clinical condition and hemodynamic parameters. **Conclusion:** Pfm-Le VSD coil system is effective, especially useful in closing atypical, and surgically difficult to access VSDs. Implant plasticity ensures its effectiveness and prevents of significant inter-ventricular septal distortion. It also provides an interventional option of treatment of specific lesions such as LV-RA shunts.

- 74 **Amiodarone Causing Corneal Deposits - A Reason To Stop Therapy Or Not?**  
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**Aims:** To determine the frequency of amiodarone keratopathy in our sample and to determine if the keratopathy irreversibly influences the visual acuity **Introduction:** Amiodarone is one of the most powerful antiarrhythmics. It also has a large number of side-effects, such as thyroid gland disorders, lung fibrosis and liver lesions. Besides that, amiodarone causes corneal deposits, commonly found 1-6 months after the start of therapy. Keratopathies are classified into 3 degrees, based on the spreading of amiodarone deposits in the cornea. **Methods:** We included 26 patients in this study, 18 men and 8 women. Patients were controlled every 2 months, in the total of 1 year study. 12 patients carried on with the therapy for the complete period. 5 patients ended the therapy, 9 of them had their amiodarone doses lowered. **Results:** 24 of 26 tested patients (92,31%) have been proven to have some level of amiodarone keratopathy. I degree- 5 patients(19,23%). II degree- 13 patients(50%). III degree- 6 patients(23,10%). 2 patients(7,69%) have shown no amiodarone keratopathy after 1 year programme. Lowering the dose did not have any effect on the regression of the changes. **Conclusion:** Direct link between amiodarone therapy and corneal deposits as a side effect has been proven. No significant visual acuity defects caused by amiodarone have been proven. Overall conclusion is that, if amiodarone therapy is of vital importance to the patient, it should not be stopped, unless it is causing severe visual acuity defects to the patient.

- 75 **Selection Of Transjugular Intrahepatic Portosystemic Shunt Stents For Controlling Portal Hypertension**  
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**Aims:** To evaluate efficacy of transjugular intrahepatic portosystemic shunt stent for decreasing portal pressure and estimate stent diameter according to the classification and patient condition. **Introduction:** Nowadays, transjugular intrahepatic portosystemic shunt (TIPS) has become a mainstay treatment option for the management of portal hypertension-related complications in liver cirrhosis. Accumulated evidence has shown that its indications are being gradually expanded. Notwithstanding, less attention has been paid for the selection of an appropriate stent during a TIPS procedure. TIPS is effective method of creating a portosystemic shunt to decrease or treat portal hypertension. TIPS is a side-to side shunt of a determined diameter designed to function as a partial shunt that preserves a portion of portal flow to the liver. Flow through the completed shunt is assessed by comparing the degree of privileged filling of the shunt to that of the portal vein branches and portosystemic collaterals (mainly in the gastric veins). The identification of hepatofugal (reversed) blood circulation in portal vein branches (total shunting) is a sign of good flow through the shunt. Technical success is defined as a decrease of the portosystemic pressure incline to 12 mm Hg or less, or a reduction of at least 25-30 %. **Methods:** Between 2002 and 2014, 67 patients with cirrhosis (60 males) with a mean age 51.08±12.574 years underwent TIPS in the Tashkent Medical Academy II clinic. 17 patients were infected with hepatitis B virus, 6 patients were with hepatitis C, 1 patient were diagnosed with both of HBV, HCV, and histiocytosis. In 2 patients developed cirrhosis cause of both alcohol and hepatitis B virus. The hepatic function status evaluated by Child-Pugh classification was group A in 24 patients, group B in 28 and group C in 15 patients (Table 1). All patients had complications from cirrhosis and portal hypertension. The indications for using TIPS were uncontrollable ascites (n=59) and gastrointestinal bleeding (n=8). In 5 patients were cannulation and all of them operations were failed. In 9 patients have developed thrombosis. After surgical treatment, 11 stents were blocked by a clot. Stents were used according to Child-Pugh classification and degree of the liver failure. Retrospective study compared the outcomes of TIPS between cirrhotic patients receiving 6 mm (n=1), 7 mm (n=3), 8 mm (n=9), 9 mm (n=11), 10

mm (n=29), 12 mm (n=14) Wall stents. The first day occlusion rate was significantly higher in the 12-mm stent group than in the 10-mm stent group (21% and 0% respectively). However, the long-term primary and secondary patency rates were similar between the two groups. **Results:** We compared patients' condition and complications of the TIPS according to stent diameter. The first month mortality rate was higher in the 12-mm stent group than in the 10-mm stent group. The 10 mm stents were more effective than the 8 mm stents for reducing portosystemic pressure gradient after TIPS (6.5±2.7 mm Hg and 8.9±2.7 mm Hg, P=0.007). A 10-mm stent group was superior to the 8-mm stent group for decreasing the first year rate of remaining free of recurrence and/or persistence of complications due to portal hypertension (82.9% and 41.9%, P = 0.002, by Log-Rank test). TIPS altered the portal pressure in all patients after the second operation. The mean portal system pressure prior to TIPS placement was 53.67 ± 4.21 mm Hg, which decreased to 25.10 ± 4.06 mmHg after the first shunt tract was established (P < 0.001). The mean portal system pressure prior to the second TIPS was 43.68 ± 3.98 mm Hg and decreased to 25.14 ± 4.67 mm Hg after the procedures (P < 0.001). The mean PSG prior to the TIPS placement was 43.80 ± 6.18 mmHg, which decreased to 15.27 ± 3.32 mm Hg after shunt tract was established (P < 0.001). The mean PSG prior to the next TIPS was 37.40 ± 2.76 mm Hg and decreased to 16.20 ± 3.17 mm Hg after the procedures (P < 0.001). **Conclusion:** The study showed that a 10-mm stent might be effective and brought less complication than an 8-mm or 12-mm stent for the management of PH and the development of shunt patency. Covered stents are better than bare stents for decreasing the shunt dysfunction. The placement of a stent in the left portal vein branch may enhance the hepatic perfusion and decrease the incidence of hepatic encephalopathy.

- 76 **Clinical Specifics Of West Nile Meningoencephalitis In Relation To Other Viral Meningoencephalitis**  
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**Aims:** To determine the demographic, clinical characteristics and characteristics of cerebrospinal fluid in patients with West Nile meningoencephalitis in relation to patients with other viral meningoencephalitis. **Introduction:** Viral meningoencephalitis represents inflammation of the brain parenchyma with the expansion on meninges, caused by viruses and mechanisms they encourage. West Nile virus is a neurotropic arbovirus; 80% of this virus infections in humans are asymptomatic, at 20% there is febrile illness, usually accompanied by rash, and less than 1% is manifested as neuroinvasive diseases such as meningoencephalitis. **Methods:** A retrospective study included 71 patients, who were treated at the Clinic for Infectious Diseases of the Clinical Center of Vojvodina Novi Sad, in the period from 1 January 2014 to 31 December 2015. Data were collected from medical records. Patients were divided into two groups: WN group = 10 patients (West Nile meningoencephalitis), VME group = 56 patients (viral meningoencephalitis). 5 patients were excluded from further research. Data were statistically analyzed using t test and  $\chi^2$  test. **Results:** The average age in the WN group was 58.80 years and in the VME group was 48.68 years. Altered consciousness was manifested in 100% of cases in the WN group and in 55% of cases in the VME group. At the reception 20% of patients in the WN group and 1.6% of patients in the VME group had rash. Lethal outcome occurred in 10% of cases in the WN group and in 10,6% of cases in the VME group. **Conclusion:** All patients with West Nile meningoencephalitis had altered consciousness, while patients with other viral meningoencephalitis had altered consciousness in 55% of cases. From West Nile meningoencephalitis often suffers older population. Rash is more common in patients with West Nile meningoencephalitis.

- 77 **Enhanced Recovery After Surgery Protocol: Assessment Of Differences During Implementation In Patients Above 75 Years Old.**  
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**Aims:** The aim of the study was to assess differences during implementation of ERAS in patients above 75 and below 60 years old. **Introduction:** However perioperative care conducted in accordance with principles of Enhanced Recovery After Surgery (ERAS) allows shortening length of hospital stay and reducing complication rate, implementing it consists of large number of elements which can be associated with difficulties, especially in elderly patients. **Methods:** We analyzed 193 (F: M - 90: 103) patients in a retrospective cohort study. Members of the study group were undergoing surgery of intestines (143), stomach (17), liver (7) and pancreas (26) in the 2nd Department of General Surgery JU MC in Krakow, in years 2009-2015. ERAS protocol was implemented with different compliance in the whole study group. We divided patients into two cohorts: group "A" with patients above 75 years old (79 patients) and group "B" with patients below 60 years old (114 patients). We selected 6 elements of ERAS protocol common in both groups and every surgery: early removal of the urethral catheters, preoperative drinks, early postoperative mobilization, administration of restricted amounts of intravenous fluid, avoidance of postoperative drains, and avoidance of opioids. **Results:** There were no statistically significant differences between implementation of the first 5 analyzed postulates. We observed difference in avoidance of opiate medication, group "A" required less often opioids to manage pain associated discomfort. **Conclusion:** In connection with the results, age did not turned out to be a significant factor which can influence conduction of perioperative care

- 78 **Analysis Of Patients Treated In The Hospital Emergency Department Because Of Abdominal Pain With Particular Emphasis On Readmission Causes.**  
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**Aims:** Analysis of patients treated in the Emergency Department because of abdominal pain with a particular focus on the causes of readmission. **Introduction:** Abdominal pain is a common complaint reported at Hospital Emergency Departments (ED). Despite the continuous development of diagnostic methods, there are still some patients whose problem is not correctly identified during the initial hospitalization in an ED, what then delays the implementation of the most optimal treatment. **Methods:** Among around 8500 patients admitted to the ED Trauma Center Emergency Medicine and Disaster in Krakow from October to November 2015, 712 cases who complained of abdominal pain were included to the study. The group consisted of 437 (61.38%) women and 275 (38.62 %) men. The average age of the group was 46 (17-103) years. An analysis was made with emphasis on patients who were re-hospitalized on ED. **Results:** In analyzed group 91 patients (12,78%) were admitted to the surgical ward after their first visit in an ED. 50 of them (54,96%) were qualified for the acute surgery the most often caused by acute appendicitis. By far the largest group of 523 (73.46%) patients was discharged home after a diagnosis on ED. In 98 (13.76%) cases the doctor decided to continue hospitalization in non-invasive treatment ward. After discharge, 79 (11.10%) patients came back to an ED because of the lack of improvement or worsening of symptoms. Mostly they return after 1 day. In this group during the re-examination and further diagnostics 34 (43.04%) patients had to continue their treatment in the surgical ward. In patients whose surgical intervention was delayed, the most frequent diagnosis was acute appendicitis. **Conclusion:** Abdominal pain is a frequent cause of hospitalization in an ED. Due to the fact that the most common surgical intervention performed in patients initially discharged home was appendectomy, symptoms suggesting appendicitis should attract particular attention.

- 79 **Analysis Appliance Of Adenoma Detection Rate In Assessment Of Colonoscopy Quality**  
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**Aims:** The aim of this study was to assess and compare the quality of colonoscopy in 1989. and 2009. at the Clinical Center of Serbia, Gastroenterology and Hepatology Clinic (GHC) by analyzing the percentage of complete colonoscopies and adenoma detection rates in colonoscopic practice. **Introduction:** Colonoscopy is considered the golden standard for detection and removal of colorectal adenoma, which are important issues in prevention of colorectal cancer. Adenoma detection rate (ADR) is a valuable indicator of colonoscopy quality. **Methods:** In this retrospective study, colonoscopy data was obtained from endoscopic reports of GHC. A total of 3031 colonoscopies which were conducted in 1989 and 2009 were analysed. X<sup>2</sup> test was used for analyzing the ratio of total colonoscopies compared to all colonoscopies conducted, and for comparing ADR between 1989. and 2009. Mann-Whitney test was used. Only complete colonoscopies were taken into consideration when calculating ADR (colonoscopies in which the cecum wasn't intubated were excluded). **Results:** In 1989. at the GHC, a total of 834 colonoscopies were conducted, of which 549 were complete (65.8%), while in 2009. a total of 2197 were conducted, of which 1834 were complete (83.5%). The larger percentage of complete colonoscopies in 2009. compared to 1989. is statistically significant (p<0.01). In 1989. colonoscopies were conducted by 4 endoscopists and adenoma was discovered in 113 patients, with a mean ADR of 22.1±4%, while in 2009. 14 endoscopists were conducting colonoscopies and adenoma was diagnosed in 413 patients with a mean ADR of 19.7±7.3%. The two mean ADR values were compared, and no statistical significance was found (p=0.72). **Conclusion:** In 2009, there was a statistically significant larger percentage of complete colonoscopies compared to 1989. There was no statistically significant difference between mean ADR in 2009. and 1989. at the Clinical Center of Serbia, Gastroenterology and Hepatology Clinic

**80 MdcT In Evaluation Of Coronary Anatomy And Anomalies**  
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**Aims:** The aim of this study is to examine the normal coronary tree anatomy and its variations and anomalies. **Introduction:** Advances in CT technology allowed noninvasive coronary CT angiography to be accepted as a quick, noninvasive study for coronary artery disease due to the high sensitivity and specificity. Due to the widespread of cardiac CT more frequently coronary variations and anomalies are observed. Most coronary anomalies do not have an adverse clinical outcome and are considered nonmalignant. However they can cause impediments during interventional procedures and complications during cardiac surgery. But some anomalous courses are associated with more severe clinical outcome such as myocardial ischemia, infarct and even sudden death. **Methods:** We retrospectively reviewed from the hospital database 173 consecutive cardiac CT exams performed for a period of 11 months. The patient population consisted of 105 males and 68 females. The age was between 4 years old and 88 years old. All patient underwent coronary CT angiography with ECG triggering using 320 row CT Aquilion ONE Toshiba machine. All patients were administered 70 ml of nonionic contrast media with a speed of 4,5ml/sec. Beta blockers were administered selectively in high rate patients. Exposure data were depended on BMI. **Results:** Right coronary dominance was observed in 142 patients. In 28 of the patients the dominance was left and codominant supply was observed in only 3 patients. Presence of ramus intermedius artery was observed in 70 of the patients. In 67 of the cases an anomaly in either the origin course, termination of a coronary artery or intrinsic anomaly was observed. **Conclusion:** Cardiac CT is a highly sensitive noninvasive tool and accepted method of choice for evaluating the course of anomalous coronary arteries. Thorough knowledge on normal anatomy of the coronary tree and its anomalies are important in managing cardiologic patients.

**81 Antiulcer Effect Of Escitalopram And Venlafaxin In Lps-Induced Model Of Depression In Rats**  
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**Aims:** The aim of the present study is to assess the possible anti-ulcer effect of escitalopram and venlafaxine in indomethacin-induced ulcer in depressed rats and to compare their effects with that of famotidine, a well-known H<sub>2</sub>-blocker. **Introduction:** Peptic ulcer disease is a multifaceted etiological disease, involving depression and production of pro-inflammatory cytokines as major factors. Several antidepressants, were shown to reduce stress ulcer formation, perhaps to a greater extent than that seen with traditional therapies such as famotidine and anti-acids. **Methods:** Rats were divided into 5 groups. Induction of depression was done by i.p. injection with LPS in all groups except the 1st one which received saline. From 3th day onwards, after the confirmation of depression by sucrose preference test (SPT), groups 2 to 4 were orally treated with escitalopram, venlafaxine and famotidine, respectively for 30 days. Thereafter, groups 2 to 4 in addition to a 5th group (indomethacin control) received 25 mg/kg indomethacin, p.o. Six hours later, all rats were sacrificed, the stomachs were excised and erosions on the surfaces of the stomachs were examined macroscopically. Part of each stomach was preserved to prepare homogenates for estimation of stomach contents of TNF-alpha by ELISA. **Results:** It was shown that, antidepressants displayed a significant reduction of the mucosal damage induced by indomethacin. Their effects were comparable to famotidine. It was also shown that the levels of TNF-alpha in the stomach were substantially decreased in the group of animals treated with antidepressants. **Conclusion:** Our study showed that, antidepressants have antiulcer effects. We speculate that they exert their antiulcer effects, because of their anti-inflammatory properties and by reducing levels of pro-inflammatory cytokines. Our results confirm the hypothesis that the effects of antidepressant are associated with their immunomodulatory potential.

**82 Can Ghrelin Have A Therapeutical Role In Diabetic Retinopathy?**  
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**Aims:** The aim of this study was to test the effect of ghrelin in primate choroid retinal endothelial cells (RF/6A) cultured under hyperglycemic conditions regarding angiogenesis assays and its effect on the impact of diabetic retinopathy in an animal model of streptozotocin-induced type 1 diabetes mellitus (DM1). **Introduction:** Ghrelin has recently been implicated in the pathophysiology of proliferative retinopathy, though its true involvement remains unclear. **Methods:** RF/6A cells were incubated for 24h with different glucose concentrations (0-300mM). Cell migration was assessed using wound-healing assay. Colorimetric immunoassay was used for the quantification of cell proliferation. Cell apoptosis was assessed by TUNEL technique. For each glucose concentration, the effect of ghrelin (10-10 to 10-5nM) was determined after 24h of incubation. The in vitro angiogenesis was assessed by tube formation assay. For the in vivo studies, diabetic male Wistar rats received 3 intravitreal ghrelin injections (81nM), monthly. Three months after ghrelin injections, vascular permeability was assessed using the Evans blue assay. Vascular degeneration was evaluated by counting endothelial cells, pericytes and acellular capillaries in flat mount retinas, seven months after ghrelin injections. **Results:** Ghrelin significantly inhibited RF/6A cell migration at every glucose concentrations, though more consistently under low glucose environment. Ghrelin (10-7nM) significantly reduced cell proliferation at every glucose concentrations. In vitro angiogenesis was decreased by ghrelin under a high glucose environment. Regarding in vivo studies, ghrelin significantly reduced endothelial cells loss without differences concerning pericytes, which shows attenuation in retinal vasculature loss induced by diabetes. Ghrelin appears to mitigate the diabetes effect in acellular capillarity and vascular permeability, though our differences were not statistically significant. **Conclusion:** In conclusion, ghrelin significantly inhibits RF/6A cells migration, proliferation and in vitro angiogenesis, under

high glucose environment. In a DM1 animal model, ghrelin appears to have some capability of reverting the diabetes retinal damage, reducing significantly endothelial cells loss.

**83 Reactivity Of Rat Colon To Acetylcholine And Angiotensin II: Influence Of Gender**  
Coelho, D.<sup>1</sup>, Kubičková, R.<sup>1</sup>, Ballarò, G.<sup>1</sup>, Roche-Franco, S.<sup>1</sup>, Rebelo, I.<sup>1</sup>, Morato, M.<sup>1,2</sup>  
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**Aims:** To characterize the reactivity of the longitudinal smooth muscle (LSM) and the circular smooth muscle (CSM) of the rat distal colon to acetylcholine (ACh) and angiotensin II (Ang II) and to evaluate if it depends on gender. **Introduction:** ACh is a well-known contractile agent of the gastrointestinal tract and might contribute to differences in motility between genders. The effect of Ang II has been rarely studied in systems other than the cardiovascular one. **Methods:** Strips of the distal colon of Wistar rats of both genders (10-12 weeks old) were mounted in organ baths oriented along the LSM and the CSM. Isometric responses to ACh (cumulative) and Ang II (non-cumulative) were recorded on a polygraph (g/g). In some experiments, the response to Ang II was also taken in the presence of candesartan (AT<sub>1</sub> antagonist) or PD123,319 (AT<sub>2</sub> antagonist). Statistical analysis was done by Student's t test. **Results:** The CSM contracted more than the LSM to ACh (males: 3 times higher, females: 6 times higher; p<0.05 for both) and to Ang II (males: 2 times higher, females: 3 times higher; p<0.05 for both). The response to ACh and Ang II was similar between genders, except that to ACh in the CSM that was about 2 times higher in female rats (p<0.05). Candesartan abolished the response to Ang II in both tissues and genders while PD123,319 increased the response to Ang II, except in the CSM of female rats. **Conclusion:** The CSM of the rat distal colon contracts more to ACh and Ang II than the LSM, both in male and female rats. The contraction of the LSM seems to be independent of gender, but that of CSM is likely to be higher in female rats than in males. This might be due to the absence of tonic AT<sub>2</sub>-mediated vasodilation in the CSM of female rats.

**84 Influence Of Gender On Rat Mesenteric Reactivity (Artery And Vein) To Renin-Angiotensin System Components.**  
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**Aims:** To characterize the response of the rat mesenteric artery (MA) and vein (MV) to angiotensin II (AngII) and angiotensin (1-7) (Ang(1-7)), and to evaluate whether the response is affected by gender. **Introduction:** AngII is considered the main effector of the renin-angiotensin system but Ang(1-7) has also an important counterregulatory role on hemodynamics. **Methods:** MA and MV of male and female Wistar rats, 10-12 weeks old, were dissected, mounted as small rings in a Mulvaney's wire myograph and normalized to a resting wall tension of 100 mmHg and 15 mmHg, respectively. Endothelium viability was confirmed by vasodilation (>50%) induced by acetylcholine or noradrenaline (NA)-precontracted vessels. Isometric responses to AngII and Ang(1-7) were quantified (those of Ang(1-7) in NA-precontracted preparations). Statistical analysis was done by Student's t test. **Results:** The contraction induced by AngII was higher in the MV than in the MA of both male and female rats (p<0.05). Also, the contraction induced by AngII was not different between males and females, both for MA and for MV (p>0.05). Ang(1-7) induced a small vasodilation in the MA of both male and female rats and in the MV of female, but not male, rats. **Conclusion:** The rat MV is more reactive than the MA to AngII, both in males and in females. Interestingly, the vasodilatory effect of Ang(1-7) was absent in the MV of male rats, suggesting the absence or malfunctioning of the Mas receptor, although this needs further confirmation.

**85 Additional Anomalies Detected In Meningomyelocele: Tethered Cord, Chiari Malformation And Hydrocephalus**  
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**Aims:** To epidemiologically present additional anomalies observed at meningomyelocele patients who were followed up in our clinic **Introduction:** Meningomyelocele is a type of spina bifida, often very severe, because the spinal cord has usually not developed properly. It is associated with other neural tube disease. **Methods:** 140 Patients who were diagnosed with meningomyelocele were observed who arrived to the clinic in between the dates January 2014 and February 2016. They were investigated retrospectively according to their age, gender, birth method and operations they had. Patients who were also diagnosed with Hydrocephalus, Chiari Malformation and/or Tethered Cord were included in this study. **Results:** Out of 140 patients who appealed to the clinic, having any type of neural tube defect, 123 was born with caesarean section and 17 was natural birth. The age interval was 0-12 with an average of 2.5. 125 was meningomyelocele patient under treatment. 8 of the patients who were diagnosed with meningomyelocele at prenatal period were natural birth and 117 was caesarean section. From this sample, 74 patients (59.2%) were diagnosed with hydrocephalus and 67 of them (53.6%) underwent shunt operation. 17 patients (13.6%) had shunt revision procedure. 8 patients with ahunt disfunction did not undergo the surgery in concordance with the consultations and analysis of the patient data. 80 children (64.0%) were identified to have Tethered Cord and 11 patients (8.8%) were diagnosed with Chiari Malformation as companions to meningomyelocele. **Conclusion:** It was decided that, from the data gathered in our clinic, the most common additional malformation seen with meningomyelocele could be hydrocephalus and tethered cord for the patients in our clinic. Moreover, having more than one anomalies and functional lesion levels were associated with the ambulation levels of the patients. The importance of ambulation levels which should remain at a certain interval and early operation should be highlighted to prevent mental disability.

**86 Prognostic Significance Of Notch1 Mutation In Chronic Lymphocytic Leukemia Patients**  
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**Aims:** Detection of NOTCH1 mutation and the correlation of results with cytogenetical, molecular and immunological prognostic markers. **Introduction:** Chronic lymphocytic leukemia (CLL) is the most common type of leukemia in Western hemisphere. The clinical course of disease is highly heterogenous, varying from stable to rapidly progressive. Currently available prognostic factors are not fully efficient in predicting the course of CLL, especially when it is diagnosed at an early stage. The use of next-generation sequencing technologies has revealed previously unknown genomic alterations such as neurogenic locus notch homolog protein1 (NOTCH1), which might have prognostic value. **Methods:** Peripheral blood mononuclear cells from CLL patients were isolated by Ficoll density gradient centrifugation and DNA isolation using QIAamp DNA Blood MiniKit was performed. NOTCH1 c.7544\_7545delCT (n=316) in PEST domain (exon 34) mutation was investigated by ARMS PCR. **Results:** NOTCH1 c.7544\_7545delCT mutation occurred in 19/316 (6.0%) CLL patients. Patients harboring NOTCH1 mutations prevalently belonged to aggressive cases, e.g. cases with an unmutated IGVH gene status [NOTCH1 mutated/unmutated IGVH status, n=18 of 19 (94.7%) vs. NOTCH1 wild-type/unmutated IGVH status, n=146 of 293 (49.8%) (p<0.0001)], expression of CD38 [NOTCH1 mutated/CD38+, n=10 of 18 (55.0%) vs. NOTCH1 wild-type/CD38+, n=66 of 250 (26.4%) (p=0.0132)], and expression of ZAP-70 [NOTCH1 mutated/ZAP-70 positive, n=12 of 18 (66%) vs. NOTCH1 wild-type/ZAP-70 positive, n=77 of 242 (31.8%) (p=0.0041)]. The hemoglobin level in NOTCH1 mutated patients was significantly lower than in wild-type NOTCH1 patients [median: 12.4, range 7.2-15.3 vs. median: 13.5, range 5.9-16.7, (p=0.0046)]. Bioinformatics analysis of

IGHV subsets in patients with confirmed NOTCH1 mutation revealed presence of subset #1 in n=2 of 19 (10,5%), which is associated with particularly poor prognosis. Subsets #5, #6, #201 and #202 were also revealed, each in n=1 NOTCH1 mutated CLL case (5,2%). **Conclusion:** NOTCH1 mutations are more frequently detected in patients with unfavorable biological markers. Further collaborative studies in CLL are obligate to study the prognostic and predictive relevance of NOTCH1 mutation.

- 87 **Exercise Training In Copd**  
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**Aims:** To compare the effects of pulmonary rehabilitation programs (PR) versus usual treatment on the health-related quality of life, functional capacity and maximal exercise capacity in patients with COPD. **Introduction:** Chronic Obstructive Pulmonary Disease (COPD), currently is a major cause of morbidity and death in worldwide, and is on course to be third most common cause of death by 2020. Exercise intolerance resulting from dyspnea or fatigue is often the key symptom reported by patients with COPD. The degree of exercise intolerance roughly parallels the severity of the disease, but exercise intolerance is also distinctly present in patients with different GOLD categories. The extent to which quality of life is impaired is reflected in patients' symptoms, decreased functional status, and frequency of exacerbations. The principal goals of pulmonary rehabilitation are to reduce symptoms, improve quality of life, and increase physical and emotional participation in everyday activities. **Methods:** 60 articles were obtained, published between 2010 and 2015, in the English language and used as inclusion criteria all articles referred to the effect of respiratory rehabilitation programs in chronic obstructive pulmonary disease in humans. **Results:** In analysis of these items, differences were observed in the quality of life (CRDQ and SGRQ) between groups (intervention and control), a significant improvement in the intervention group. Comparing the intervention group vs control, there is greater functional capacity (6MWT / ISWT) in participant subject to intervention compared with controls. Patients in the treatment group have a higher FEV1, 6MWT and lower BODE, evidencing fewer exacerbations compared to the control group, with statistically significant differences between these groups. **Conclusion:** The effect of exercise programs in PR with COPD patients is beneficial in improving health-related quality of life and exercise capacity, compared to control groups. PR in COPD patients have impact on prognosis, increasing their survival by increasing the 6MWT, relieves dyspnea and fatigue, enhances the sense of control and improve airway obstruction.

- 88 **Morphometric Analysis Of Prefrontal And Retrosplenial Cortex In Maternal Deprived Rats**  
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**Aims:** The aim of this study was to investigate impact of maternal deprivation (MD) on morphology of prefrontal (PFCx) and retrosplenial (RSCx) cortex in rats. **Introduction:** Maternal deprivation (MD) represents an animal model of early stress which is based on separation of pups from their mother shortly after birth. Adult rats exposed to MD are developing long-lasting changes in morphology of brain, neuroendocrine system and behavioral patterns corresponding to those found in some of affective disorders. **Methods:** In this experiment 9-day-old Wistar rats were exposed to a 24 h MD. At the period of young adulthood rats were sacrificed for morphometric analysis and their brains compared to control group, bread under the same circumstances, but without MD. Density and cell soma area of NeuN-immunolabeled neurons were measured. **Results:** The results revealed statistically significant decrease of density and cell soma area in PFCx i RSCx. **Conclusion:** In this study, we have shown that MD leads to changes in morphology of neocortex. These changes were also found in patients suffering from schizophrenia. In conclusion, MD represents a significant model for investigating early life stress which is proven to increase risk for development of some

psychiatric disorders.

- 89 **Synthetic Cannabinoids Impact In Placental Cytotrophoblasts: Effects Of 5f-Pb-22, Thj-2201 And Ur-144 On Cell Viability And Apoptosis**  
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**Aims:** To study the effects of the synthetic cannabinoids (SCs) 5F-PB-22, THJ-2201 and UR-144 on BeWo cells, a model of placental cytotrophoblast cells. **Introduction:** SCs were developed for research and medical applications but are being used for recreational purposes as psychoactive drugs in products such as "spice". Their impact in reproductive health namely during placentation is unknown. These compounds act at the same cannabinoid receptors CB1 and CB2 as endocannabinoids (eCBs) and  $\Delta^9$ -tetrahydrocannabinol (THC), the major psychoactive substance of Cannabis sativa, which explains their psychoactive properties. During placental development, cytotrophoblasts, the specialized placental epithelial cells, suffer proliferation, differentiation and apoptosis. We have previously shown that eCBs induce apoptosis and impair cytotrophoblast differentiation [1]. In addition, THC in high concentrations inhibits trophoblast turnover which is essential for proper placentation [2]. In this study we analyzed the impact of the synthetic cannabinoids 5F-PB-22, THJ-2201 and UR-144 on cytotrophoblast cells. **Methods:** BeWo cells were cultured in DMEM/F-12 medium with 1% FBS. The cells were treated with each cannabinoid (0.01-50  $\mu$ M) for 24 h and 48 h. The impact of treatment versus control was assessed by parameters related to cell death. MTT assays and Lactate dehydrogenase (LDH) release were performed to evaluate cell viability. Caspase -3/-7 and -9 activities were measured by a luminescence assay. Alterations in mitochondrial transmembrane potential ( $\Delta\Psi$ m) were evaluated by fluorimetry. **Results:** MTT assays showed that UR-144 induced a decrease in cell viability at concentrations above 10  $\mu$ M while THJ-2201 and 5F-PB-22 had no effects. The treatment with UR-144 also resulted in a marked loss of  $\Delta\Psi$ m along with caspase -3/-7 and -9 activation suggestive of apoptosis while the highest concentrations caused LDH release indicating a necrotic process of cell death. **Conclusion:** Here we demonstrate that UR-144 has impact in cell viability at concentrations above 10  $\mu$ M through induction of apoptosis in trophoblast cells. Thus, the exogenous administration of cannabinoids may interfere with the balance of trophoblast turnover being potentially harmful to placental development. The results support the importance of cannabinoid signaling in the proper formation of the placenta.

- 90 **Biological Assays And Computational Studies Addressed To New D-Erythrose Derivatives As Promising Inhibitors Of Glycosidases**  
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**Aims:** The objective of this work is focused on study of the inhibitory activity of fifteen D-erythrose derivatives against four types of glycosidases: alpha-glucosidase, beta-glucosidase, alpha-galactosidase and beta-galactosidase. **Introduction:** Glycosidases play a crucial role in many biological processes. There are many subtypes of glycosidases in the human body and several of them have been recently recognized as important drug targets due to their association with several diseases and disorders. Due to the therapeutic opportunity that

is brought by the inhibition of glycosidases, several different types of inhibitors have been developed targeting these enzymes. Among these compounds the imino sugars derivatives are perhaps the most promising ones that are already commercially available. Currently, one of the main disadvantages of these inhibitors is their lack of specificity while targeting these enzymes. For this reason there is an urgent need for new inhibitors that can specifically inhibit each of the glycosidases. The D-erythrose derivatives presented in this work provided a valuable alternative to these compounds. **Methods:** In order to study the inhibitory activity of the 15 D-erythrose derivatives an enzymatic assay was performed and the IC50 calculated. Furthermore, molecular docking studies were conducted in order to understand the source of the specificity that some of these compounds present against some of the glycosidases, using AutoDock and the vSLab-plugin. **Results:** From the 15 D-erythrose derivatives that were tested, 5 were able to selectively inhibit some of the studied enzymes. One of them is specific for alpha-glucosidase and the remaining four to beta-galactosidase. **Conclusion:** The results have shown that the source of the stereoselectivity and stereospecificity of the tested compounds is related with the specific interactions that they establish with the active site of the studied enzymes. Based on these results, the studied D-erythrose derivatives offer new alternatives to develop new inhibitors targeting glycosidase in a more specific way.

- 91 **Cellular Senescence During Zebrafish Embryonic Development.**  
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**Aims:** Investigate whether senescence plays a role in zebrafish embryogenesis. **Introduction:** Cellular senescence has recently been linked to embryonic development, playing a role in the eradication of transitory embryonic structures and the elimination of one cell population in benefit of another, finally contributing to tissue remodeling process. For this, after a proliferative arrest, immune cells are recruited – through the Senescence-Associated Secretory Phenotype (SASP) – to clear the senescent cells, and the eliminated tissue is repopulated by progenitor cells. This remodeling activity is carried out during embryonic development but also upon tissue damage. It is suggested that cellular senescence has evolutionary originated as a tissue-remodeling mechanism in embryonic development, and it was then adapted to coordinate tissue regeneration and healing in adult organisms. **Methods:** The zebrafish (Danio rerio) has a high regeneration capacity and has become a well-established model system to study tissue regeneration and embryonic development. We performed a Senescence-associated  $\beta$ -galactosidase (Sa $\beta$ G) staining at different key time points in zebrafish embryogenesis in order to detect senescence in the tissues. **Results:** Our data suggests that senescent cells are absent in 3, 8 and 24 hpf (hours post fertilization) embryos; while 48 hpf embryos showed a somewhat diffuse Sa $\beta$ G staining in the optic lens; at 72 hpf senescent cells were detected in different regions of its body, namely the heart, spinal cord, retina, brain and ventral-posterior region. **Conclusion:** At least to our knowledge, these results constitute the first report of senescent cells in zebrafish development and Sa $\beta$ G staining on the heart region has never been reported in other embryonic models. Surprisingly all the stained areas correspond to organs with regeneration capacity in the adult zebrafish. As a conclusion, our data suggest that senescence may play an important role in zebrafish embryonic development.

- 92 **Characterization Of Liver Changes In Zsf1 Rats, An Animal Model Of Metabolic Syndrome**  
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**Aims:** To characterize liver histological and innate immunity changes in ZSF1 rats and to evaluate the effect of high fat diet and exercise. **Introduction:** Non-alcoholic fatty liver disease is the hepatic counterpart of the metabolic syndrome (MS). ZSF1 rats are an animal model of MS in which liver changes have not been described. **Methods:** Male ZSF1 obese rats (n=21) were randomized to sedentary lifestyle with normal diet (Ob, n=7) or to either high fat diet from the 10th week of life (Ob-HFD, n=7) or low-intensity exercise training from the 15th week onward (Ob-Ex, n=7). Wistar-Kyoto (Ctrl, n=7) and hypertensive ZSF1 lean rats (Ln, n=7) served as controls. At the 20th week of life, animals were metabolically evaluated and organs were weighed after euthanasia. Liver was collected for: 1) area of steatosis, fibrosis and inflammation assessment by histomorphological analysis and 2) innate immunity and inflammatory markers expression by real-time PCR. **Results:** About morphometric and metabolic data, Ob, Ob-HFD and Ob-Ex exhibited similar body weights but significantly higher than Ln and Ctrl. Ln showed higher weight than Ctrl. Ob, Ob-HFD and Ob-Ex revealed impaired glucose tolerance and insulin resistance. Concerning histomorphological analysis, Ctrl and Ln both exhibited less steatosis than Ob, Ob-HFD and Ob-Ex. Nor steatohepatitis or fibrosis were observed in any of the groups. Regarding gene expression, no differences were observed between Ctrl, Ln and Ob (except for the significant higher TOLLIP expression on Ob vs Ln). Ob-HFD and Ob-Ex showed increased expression of PPAR and TOLLIP comparing to other groups; Ob-Ex showed increased expression of TLR2 and TLR4 comparing to other groups; however this did not translate into different expression of TNF $\alpha$  or IL-1. **Conclusion:** 20-week-old ZSF1 model of MS associates with liver steatosis but not with steatohepatitis or increased expression of innate immunity or inflammation markers.

- 93 **Reparative And Regenerative Responses Of The Muscular Fibres In The Trichinosis Disease.**  
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**Aims:** Our aim has been to determine whether in the muscle which has been infested by this parasite co-exist, or not, microscopic changes that could indicate a post-injury regenerative process and a not-injuring reparative response. **Introduction:** Unlike most of the organisms that parasite the muscle, which injure the muscular fibres they invade, the larvae of Trichinella spiralis has the capacity to induce the formation of a nurse cell, from the muscular cell that harbours it, which will have the role of feeding and protecting the larvae, without its destruction. After the parasitization, Trichinella spiralis use the mechanism of the regenerative process of the muscular cells to induce them to form the capsule that surrounds it. Considering that reparation and regeneration of the muscular fibre are different processes, it is important not to misunderstand them, due to the possibility that both of them could take place in the muscles which have been infested by this parasite. **Methods:** We have analyzed muscular samples from wild boars which presented pseudo-cysts of Trichinella spiralis. The fragments were frozen to its histological, histo-chemical and immuno-histo-chemical study. In order to compare, we also studied a sample from human muscle with acute infestation. **Results:** In the pathological animal samples, we observed pseudo-cysts of Trichinella spiralis and also absence of changes which could suggest degeneration-regeneration. In the human pathological sample, we observed pseudo-cysts, inflammatory infiltrates and degenerative and regenerative muscle fibres. **Conclusion:** The absence of regenerative changes in the animal samples would indicate a reparative response of the muscle fibre but not a regenerative standard one. However, the existence of degenerative

and regenerative changes in the human case suggests the possibility that while the nurse muscle fibres respond to the invasion of the parasite with a "reparative" response, others could suffer degeneration and necrosis and be followed by a "regenerative" process.

- 94 Immunotherapy In Pediatric Malignancies: New Weapon Against Relapsed Solid Tumors?**  
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**Aims:** Screening Programmed Death Ligand - 1 (PD-L1) expression in children's tumor at the Children's Hospital at Westmead in Sydney, Australia. **Introduction:** The anti-PD-L1 is an immunotherapy that allows the immune system to recognize the tumor cells as foreign and attack them. It is used, especially in melanoma, to enhance the T-lymphocyte activation. However, the effectiveness of anti-PD-L1 treatments in pediatric tumors is little known. In this study, we used the anti-PD-L1 staining to check the presence of PD-L1 in tumor cells at the Children's Hospital at Westmead to predict a potential new treatment. **Methods:** We examined 600 patient samples in tissue microarray with primary and relapsed tumors, who underwent surgery at the Children's Hospital, between 1950 and 2014. The Biobank of the Kids Research Institute provided the stained slides. The sections were deparaffinized, rehydrated, added with an antigen (rabbit anti-human PD-L1 polyclonal antibody), incubated overnight and added with a secondary antibody. IHC results were evaluated by scanning, amplification and were examined by two observers, further confirmed by a pathologist. Both the membrane and cytoplasmic PD-L1 positivity was considered. The negative control was a placenta sample, as referred in other studies. **Results:** 600 patient's samples from 1950 to 2014 were analyzed and 91 (15,1%) expressed positivity. Half of the samples (300) were neuroblastomas: 21,4% were positives. The mixed relapsed solid tumors had 31,4% of the 35 samples positives. The positivity rate was less important in the others: low-grade glioma (12,3%), medulloblastoma (12,2%), rhabdomyosarcomas (8,3%), chondrosarcoma, osteosarcoma, high-grade glioma, ewing's sarcoma and relapsed brain tumor with <5%. **Conclusion:** Relapsed solid tumors and neuroblastoma samples expressed positive results in the screening. The aggressive features of these tumors might have some relation with the PD-1 escape response. Investigation of predictive factors of success of anti-PD-L1 in these tumors urge to further conclusions and potential treatment.

- 95 The Role Of Vitamin D Replacement Therapy In Serum Fgf23 Concentration In Children With Myelomeningocele In Comparison To Healthy Children.**  
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**Aims:** In our study we wanted to investigate the influence of vitamin D replacement therapy on serum FGF23 concentration in children with MMC and compare the results with healthy control group. **Introduction:** FGF23 is recently discovered bone-derived regulator of vitamin D metabolism and phosphate homeostasis. It inhibits phosphate reabsorption and calcitriol production by the kidney as a result of lowered kidney 1 $\alpha$ -hydroxylase activity and respective decreased active vitamin D synthesis. Myelomeningocele (MMC) remains the most severe form of neural tube defects involving serious locomotor disability, osteoporosis and pathologic fractures. **Methods:** This prospective analysis was conducted on two groups: 16 children with myelomeningocele and 20 healthy children. Serum FGF23 levels was measured using enzyme immunometric assay methods; for studied group before and after vitamin D replacement therapy. Children's medical charts were analysed to determine age, sex, anthropometric measurements, BMI, calcium and phosphate (in blood and urine), vitamin D<sub>3</sub>, renal function parameters. **Results:** There was significant difference in FGF23 serum concentration between the studied groups. In children with MMC we found a significant decrease in serum FGF23 concentrations after vitamin D replacement therapy. The mean concentration of FGF23 before the therapy was 68.33 pg/ml (0.00 - 287.2) whereas after it - 7.08 pg/ml (0.00 - 50). Vitamin D

concentrations increased from the median 7 ng/ml (4 - 26) to 18.5 ng/ml (7 - 38) during replacement therapy but it was still below optimal level. In control group the mean FGF23 serum concentration was 46.23 pg/ml (0.00 - 153.72). FGF23 correlated positively with albumin, serum and urine phosphate levels and negatively with alkaline phosphatase. **Conclusion:** 1. Children with MMC present vitamin D deficiency and disturbed mineral metabolism. Replacement therapy increases vitamin D level. 2. Vitamin D replacement therapy decreases FGF23 concentrations what may prevent MMC children from negative effects of elevated serum FGF23 levels and may improve mineral metabolism.

- 96 Impact Of Mammary Tumorigenesis In Adipose Tissue Model**  
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**Aims:** Our goal was to evaluate the contribution of white adipose tissue remodeling to mammary tumorigenesis-related body wasting. **Introduction:** Cancer cachexia (CC) is a syndrome associated with poor prognosis, being responsible for about 20% of deaths in cancer patients. The prominent feature of CC is the loss of skeletal muscle mass, which adversely affects patients' quality of life and tolerability of cancer therapies. However, adipose tissue remodeling seems to occur earlier than muscle proteolysis in CC and is characterized by a process designated white adipose tissue (WAT) browning. In contrast to the well-defined mechanisms of skeletal muscle atrophy, WAT remodeling in cancer has received relatively little attention. **Methods:** An animal model of chemically-induced mammary tumorigenesis (obtained by the administration of N-methyl-N-nitrosourea) was used. After 35-weeks of carcinogen exposure, animals were euthanized and blood and retroperitoneal adipose tissue were collected. Inflammatory and metabolic markers were analyzed in serum and in adipose tissue, respectively, by immunoblotting. **Results:** Data evidenced a host response induced by mammary tumors characterized by increased serum levels of pro-inflammatory markers as C-reactive protein and TWEAK that resulted in body weight loss. In adipose tissue we observed a significant increase of UCP-1, PGC-1 $\alpha$  and mitochondrial respiratory chain complexes subunits levels, which indicate the upregulation of thermogenesis and mitochondrial biogenesis. So, these results support the WAT browning phenomena in tumor-bearing mice. **Conclusion:** Altogether, our results show an association between mammary tumorigenesis-related inflammation and white adipose tissue browning explaining, at least in part, the body wasting observed in this animal model of breast cancer. The clinical impact of therapeutic strategies targeting WAT browning to prevent the body wasting that is observed in many oncologic patients needs to be addressed.

- 97 Cardiac Impairment In B-Thalassemia Major And Intermedia: Two Comparative Cases.**  
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**Introduction:** Although B-thalassemia major and intermedia are considered as one unique entity on the basis of the etiologic genetic abnormalities, the degree of severity in each of them leads to two considerably differentiated clinical courses. **Methods:** Thalassemia major patients, being diagnosed within the first months of life and transfusion-dependent ever since, experience complications that are related to the subsequent iron overload and deposition, particularly in heart, liver and endocrine glands, despite appropriate chelation.

## Abstracts

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On the other hand, thalassemia intermedia patients are diagnosed years after and only require transfusions upon complications that are the product of the anemia itself. **Results:** We focus on the cardiac complications, given that heart failure is still today the leading cause of death among patients in both categories, to observe that those with thalassemia major show a predominant involvement of the left heart, as illustrated by our 27-year-old patient A (cardiac T2\* ranging from 4.83 to 6.15, hepatic T2\*, 1.06 to 1.17 and EFs between 54 and 65 in the period 2010-2014), while those with thalassemia intermedia present with a more severe pulmonary hypertension, that results in a right-sided heart failure, as represented by our 46-year-old patient B (cardiac T2\*, 17.57 to 33.85, hepatic T2\*, 1.16 to 1.18 and EFs, 66 to 76). In both cases, ferritin levels varied from 3600 to 7000 in that same period. **Conclusion:** Understanding and recognizing these different patterns is essential in order to achieve optimal management and increased survival.

- 98 The Wnt Pathway As A Potential Therapeutic Target In Acute Myeloid Leukemia**  
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**Aims:** The aim of this study was to evaluate the effect of IWR-1, an inhibitor of the WNT pathway, in two in vitro models of Acute Myeloid Leukemia (AML). **Introduction:** AML is the most common leukemia in adults, and in most cases the cure is not achieved with current therapies. Constitutive activation of the canonical WNT pathway has been observed in samples from patients with AML, with  $\beta$ -catenin expression being associated with worse prognosis. In solid tumors WNT inhibitors, like IWR-1, showed promising results as therapeutic approach. **Methods:** We used two AML models: NB-4 and HL-60 cells. The expression of AXIN2 (specific target of IWR-1) was determined by qPCR. Cells were cultured in absence and presence of different concentrations of IWR-1 that ranged from 10 $\mu$ M to 50 $\mu$ M. The effect of IWR-1 on cell viability was determined using the resazurin assay. Cell death and cell cycle analysis were determined by flow cytometry (FC) using the Annexin V and Propidium Iodide double staining and Propidium Iodide incorporation, respectively. Morphological analysis was also performed using May-Grunwald-Giemsa. **Results:** Both cell lines expressed the IWR-1 target, AXIN2. However, HL-60 cells have higher expression levels than NB4 cells. Our preliminary results showed that IWR-1 reduces cell viability in a time, dose and cell line dependent manner, with IC<sub>50</sub> values of approximately 30 $\mu$ M for both cell lines, after 48h of treatment. Apoptosis was the mechanism of cell death activated by IWR-1, confirmed by FC and morphological analysis. In NB-4 cells, IWR-1 also induces cell cycle arrest in G<sub>0</sub>/G<sub>1</sub> phase. **Conclusion:** Our results suggest that the WNT pathway could constitute a potential therapeutic target in AML. Furthermore, the efficacy of the WNT inhibitor, IWR-1, seems not dependent on the expression levels of the target, AXIN2.

- 99 A Role For Dietary Pattern, Physical Exercise And Atorvastatin Treatment In The Expression Of Sirtuins 1-7 In Aged Rat's Corpus Cavernosum**  
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**Aims:** We aim at elucidating the effect of diet, exercise and atorvastatin treatment on the expression of sirtuins (SIRT) 1-7 in aged rat's corpus cavernosum (CC). **Introduction:** Recent findings connect mammalian NAD<sup>+</sup>-dependent deacetylases, SIRT, to metabolic regulation and age-associated diseases, such as cardiovascular diseases (CVD). Likewise, increased expression of SIRT1 or SIRT6 extends lifespan in mice, suggesting that SIRT modulate the ageing process. Energy restriction (ER) also increases the lifespan of rodents, implicating SIRT in ER-activated mechanisms. Moreover, exercise has been suggested to promote SIRT1 activity in aged rats and statins may protect from CVD through modulation of SIRT1 expression. **Methods:** Controls, High Fat Diet (HFD)-fed and ER male rats were divided in groups (n=5/group) after 12 months of treatment. HFD rats underwent ER (HF+ER) or ER plus atorvastatin (HF+ER+S) or ER plus atorvastatin and exercise (HF+ER+S+Ex). Similarly, ER animals underwent atorvastatin (ER+S), exercise (ER+Ex) or both (ER+S+Ex). By the 18th month, all animals were sacrificed and their penises excised. To infer the effect of dietary pattern, exercise and atorvastatin treatment on SIRT 1-7 expression in CC, these proteins were detected by immunofluorescence (IF) and semi-quantified by western blotting (WB). **Results:** For the first time, we found that the seven sirtuins are expressed in rat's CC. No differences were observed among groups in IF assays. Regarding WB semi-quantification, rats on HFD presented increased levels of SIRT2,4,6,7, relatively to controls, while those on ER only had increased SIRT2 expression. ER, atorvastatin and exercise were sufficient to decrease levels of SIRT6,7, and the combination of all conditions was sufficient to increase SIRT2 in rats fed with HFD until 12 months. Atorvastatin led to decreased SIRT6 and exercise decreased SIRT4 expression levels in ER rats. **Conclusion:** These data suggest that dietary patterns, exercise and atorvastatin treatment modulate sirtuins' expression levels.

- 100 Extracorporeal Membrane Oxygenation For Refractory Respiratory Failure In Legionella Pneumonia: A Case Series.**  
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**Aims:** To review the management and outcome of patients with refractory respiratory failure complicating severe Legionella pneumonia rescued with venovenous extracorporeal membrane oxygenation (ECMO). **Introduction:** Legionella pneumophila is recognized as a common agent of severe community-acquired pneumonia. The clinical spectrum of the disease may vary from a mild flu-like illness to acute severe respiratory failure with multiple organ failure. Extracorporeal membrane oxygenation (ECMO) may be considered in refractory respiratory failure when lung-protective positive-pressure ventilation alone is insufficient to maintain adequate gas exchange. **Methods:** Design: Single center, retrospective, observational cohort, clinical record review study. Setting: Tertiary referral university teaching hospital. Patients: Adult patients with refractory respiratory failure rescued with ECMO by the Hospital S.João ECMO Center. Interventions: None. **Results:** Of the 111 patients with refractory respiratory failure rescued with ECMO, 13 had Legionella pneumonia. Severity of acute respiratory failure was similar between Legionella



pneumonia and other etiologies: PF-ratio 67 (60-76) vs. 69 (55-85); Murray score 3.25 (2.88-3.63) vs. 3.25 (3.00-3.50); and RESP score 5 (1-5) vs. 2 (-1-4), respectively. When compared with other etiologies, Legionella pneumonia was associated with earlier ECMO initiation (days of invasive mechanical ventilation (IMV) before ECMO 2.5 (1.0-5.0) vs. 5.0 (2.0-9.5). After adjustment of IMV to 'lung rest' settings, this group presented higher respiratory system static compliance (28.7 (18.8-37.4) vs. 16.0 (10.0-20.8); ml/cmH<sub>2</sub>O), but required higher ECMO blood support (blood flow 4.9 (4.3-5.4) vs. 4.2 (3.6-4.8); sweep gas flow 6 (4.5-7.5) vs. 4 (3.5-5.0); lpm). Regarding outcome, patients with Legionella pneumonia required shorter IMV duration (16 (13-24) vs. 27 (20-42); days), with a trend to higher hospital survival (84.6 vs. 61.6; %; p=0.13). **Conclusion:** In Legionella pneumonia complicated by refractory respiratory failure, ECMO support allowed patient stabilization under lung protective ventilation and high survival rates. Timely ECMO referral should be considered for Legionella pneumonia failing conventional treatment.

- 101 **Expression Of Neural Cell Adhesion Molecule In The Renal Interstitium With Different Degrees Of Fibrosis**  
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**Aims:** Examination of NCAM molecules expression in kidney interstitium of etiologically different diseases with various degree of interstitial fibrosis in order to define pathohistological and clinical indicators (predictors) influencing kidney function, leading patients to advanced CKD stages. **Introduction:** In normal human adult kidney, differentiated tubular epithelial cells do not express NCAM, while NCAM expressing cells can be rarely detected in the renal interstitium. The role and significance of these cells have not been clarified yet, but it has been suggested that number of NCAM expressing cells could increase in the initial stage of interstitial fibrosis. **Methods:** The study included 69 kidney biopsy samples, diagnosed between 2011-2012 at the Institute of Pathology, Medical Faculty, University of Belgrade. Clinical and laboratory data were collected at the time of biopsy, as well as at the time of last control. Pathohistological features were defined optico-microscopically and by immunohistochemical staining using primary NCAM antibody (1:50, clone 123C3.D5) **Results:** NCAM expressing interstitial cells were detected in 59.4% of renal biopsies, and the presence of these cells was frequently observed in the early stages of interstitial fibrosis than in other stages (p <0.001), independently of the pathohistological diagnosis (p=0.995). Patients with NCAM cells detected in the renal interstitium had a significantly lower proteinuria values at the time of biopsy compared to patients without NCAM interstitial cells (p=0.024). Pathohistological diagnosis (p=0.026) and the degree of interstitial fibrosis (p=0.002), as well as serum creatinine (p<0.001) and urea (p=0.007) values were predictors of CKD stage progression. **Conclusion:** The presence of NCAM cells in renal interstitium could be a morphological characteristic of early stage of chronic kidney diseases with an incipient interstitial fibrosis and lower degrees of proteinuria.

- 102 **Correlation Of Biochemical Parametres And Endoscopic And Pathohistological Disease Activity Findings In Patients With Ulcerative Colitis**  
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**Aims:** To investigate the correlation of blood and fecal biochemical parameters with endoscopic and histopathological findings of disease activity in patients with ulcerative colitis. **Introduction:** Ulcerative colitis (UC), an inflammatory bowel disease affects persons in younger age, and have very different clinical course. Endoscopic procedures still represent the gold standard in the diagnosis of UC. Considering the demand for a specific preparation for endoscopic examination and the invasiveness and discomfort for the patient, the existence of biochemical parameters that indicate UC disease activity would greatly facilitate the work of gastroenterologists in the treatment of UC. **Methods:** A cross sectional study in which we inclu-

ded 62 patients hospitalized at the Clinic for Gastroenterohepatology CCS. All patients underwent a total colonoscopy with ileoscopy. Fecal samples were collected for fecal calprotectin (FC) assessment prior to the procedures. FC was determined by a semi-quantitative rapid test. For each patient, a complete blood count was performed an addition to inflammatory markers. **Results:** Fecal calprotectin showed a statistically significant direct correlation with PH findings of ulcerative colitis disease activity (p=0.001). FCP concentrations over 1000 mg/l have occurred only in patients with moderate and severe form of the disease. Other laboratory parameters didn't show statistically significant correlation with pH findings of ulcerative colitis disease activity (p>0.05). **Conclusion:** FCP levels directly correlate with the activity of the disease, thus it can be useful method in reducing the number of endoscopic procedures in patients with moderate to severe forms of the disease.

- 103 **Familial Occurrence And Associated Autoimmune Diseases In A Cohort Of Patients With Acquired Autoimmune Myasthenia Gravis From Belgrade, Serbia**  
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**Aims:** To determine the familial occurrence of myasthenia gravis (FOMG), the occurrence of autoimmune diseases (AID) associated with myasthenia gravis (MG) and to identify potential risk factors for developing MG in a cohort of patients from Belgrade. **Introduction:** MG can be associated with other AID, most frequently with Hashimoto's thyroiditis, systemic lupus erythematosus (SLE) and rheumatoid arthritis (RA). FOMG is rare and exists in 3.5-4.2% patients with MG. **Methods:** This retrospective study gathered data from 453 patient histories from the period 1992-2014 from the Clinic of Neurology, Clinical Center of Serbia. Three analyses were performed. The first measured the frequency of associated AID in patients with MG. In the second, patients who had MG associated with AID were compared to patients without associated AID. The third one compared patients with FOMG to patients without FOMG. The demographic and clinical characteristics of these patients were analysed and comparisons were made between observed and control groups. **Results:** The associated AID were present in 54 (11.9%) patients, the most frequent was Hashimoto thyroiditis (4%), then SLE (1.3%), and RA, polymyositis and pernicious anaemia (0.9%). Patients with co-occurrence of MG and other AID were, in comparison with control group, more often female and the difference was on the border of statistical significance (p=0.056). They had late onset MG (LOMG) more frequently, a mild form of MG and positive anti-AChR antibodies, but these differences weren't statistically significant. FOMG was seen in 2.2% of patients. They had LOMG more frequently, were predominantly men, seropositive, and with mild form of the disease, but with no statistical significance compared to the control group. **Conclusion:** In the Belgrade cohort, MG was often associated with other AID, while FOMG was relatively rare. There was no statistically significant difference in the observed clinical and demographic characteristics of analysed groups compared to control groups.

- 104 **Myocardial Infarction After Endovascular Repair Of Abdominal Aortic Aneurysms**  
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**Aims:** The aim of this study was to evaluate the incidence and predictors of Myocardial Infarction (MI) during hospital stay after endovascular repair of abdominal aortic aneurysms (EVAR). **Introduction:** The EVAR has expanded with encouraging results, contributing to a change in the practice of vascular surgery and anaesthesia. Vascular surgery patients have many comorbidities associated with MI, frequently asymptomatic in the perioperative period. **Methods:** We

performed a retrospective study conducted in an university hospital and included all the patients submitted to EVAR from 2006 to 2013. Patients' demographic and perioperative data were collected. As part of a postoperative care protocol, troponin measurements were assessed in high risk or symptomatic patients and an elevation superior to 0.034 ng/ml in the first postoperative 72 hours was considered as MI. Acute Kidney Injury (AKI) was defined by a rise in serum creatinine of 0.3 mg/dl. Descriptive analysis was performed and the Student-t test, Mann-Whitney U test or Fischer's exact test were used. Univariate and Multivariate analysis was done using logistic binary regression with calculation of an Odds Ratio (OR) and its 95% Confidence Interval. After Bonferroni correction p<0.002 was considered significant. **Results:** A total of 98 patients were included. Incidence of MI was 5% (n=5). There were no differences regarding patients' characteristics. General anaesthesia was associated with increased risk of MI (OR 8.5, p=0.026). AKI increased the risk of MI (OR 24.4, p=0.006). Patients with MI had longer hospital and intensive care unit length of stay (LOS) (p<0.001). After multivariate analysis, postoperative AKI was identified as an independent predictor of MI (Adjusted OR 24.4, p=0.006). **Conclusion:** European Society of Cardiology Guidelines consider EVAR as an intermediate risk surgery with 1-5% expected MI in a 30-day follow-up. Our incidence was underestimated, reflecting only in-hospital MI. Patients with a rise in post-operative creatinine may benefit from closest monitoring.

- 105 **Tracking The Therapeutic Effect Of Exercise Training In The Adipose Tissue/Cardiac Muscle Axis In Obesity**  
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**Aims:** Our goal was to evaluate the molecular pathways modulated by exercise training in white adipose tissue and cardiac muscle from obese subjects. **Introduction:** Obesity is a major health problem, being a significant risk factor for the development of a number of diseases such as cardiovascular diseases. Exercise training has been prescribed for weight loss, as a result of several changes in morphological and biochemical properties of white adipose tissue. On the other hand, the cardioprotective effect of exercise training is highly recognized in the improvement of cardiorespiratory function by causing a decrease in blood pressure and myocardial fibrosis, and promoting physiological cardiac hypertrophy. **Methods:** An animal model of obesity (ZSF1 rat) was submitted to 4-weeks of treadmill exercise training (1h of 15 m/min per day, 5 days per week). Twenty-four hours after the end of the exercise training protocol, animals were anesthetized for hemodynamics analysis and then sacrificed through exsanguination. Left ventricle and visceral adipose tissue was excised. The levels of metalloproteases (MMP)-2 and -9 and its inhibitors (TIMPs) were assessed by western blotting in both type of samples. Zymography was also performed to evaluate proteases activity. The levels of UCP-1, VEGF and oxidized (carbonylated and nitrated) proteins were determined in adipose tissue by immunoblotting. **Results:** Exercise training promoted the remodeling of adipose tissue in obese rats characterized by increased UCP-1 levels, a marker of thermogenesis, and protein nitration. MMP-2 and MMP-9 were not modulated in the adipose tissue by exercise training, unlike the initially expected considering its anti-inflammatory role. In cardiac muscle, the content of MMP-9 was responsive to 4-weeks of treadmill exercise but not its activity. So, MMPs activity do not seem to contribute to the exercise-related remodeling of adipose tissue or cardiac muscle that resulted in the improvement of the cardiac function in obese rats. **Conclusion:** Our results show evidences of adipose tissue remodeling promoted by exercise training in obese rats with benefic effects on cardiac functionality though without the

apparent contribution of MMPs. Future work should focus on other molecular pathways modulated by inflammation in adipose tissue/ cardiac muscle axis.

- 106 **Sp2-Iminosugar-Steroid Conjugates As Potential A-Glycosidase Inhibitors And Antiproliferative Agents**  
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**Aims:** Synthesis of several biological active iminosugar-steroid conjugates and their biological evaluation as potential  $\alpha$ -glycosidase and cell proliferation inhibitors. **Introduction:** Steroidal hybrids composed by a sterol and a sugar/glycomimetic moiety are a class of structurally and biologically diverse molecules[1]. Interestingly, several alkaloids are glycomimetics, and include iminosugars such as 1-deoxynojirimycin and castanospermine which have ability to inhibit glycosidases and have high interest as potential therapeutic agents namely against cancer and metabolic diseases[2]. To improve glucosidase ( $\alpha$  or  $\beta$ ) selectivity one family of glycomimetics with an endocyclic nitrogen with higher sp<sup>2</sup> hybridation character (sp<sup>2</sup> iminosugars) was developed based on 1-deoxynojirimycin structure, which has high selectivity for  $\alpha$ -glucosidases. Furthermore, it was proposed that the incorporation of axially orientated substituent (as steroids) on pseudoanomeric position can be an important factor in aglycon-based modulation of inhibitory activity and permeation through biological membranes[3]. **Methods:** Several new sp<sup>2</sup>-iminosugar-steroid conjugates were synthesised by the combination of a sp<sup>2</sup>-derivative of 1-deoxynojirimycin and different sterols. Though a spectrophotometric enzymatic assay these compounds were tested as glycosidase inhibitors. In addition, the evaluation of their cell proliferation effects by the 3-(4,5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide (MTT) method was performed, as well as preliminary flow cytometry studies with propidium iodide staining. **Results:** Six new compounds were successfully synthesised. The enzymatic assay revealed observed a selective inhibition of glucosidases, in which dehydroepiandrosterone and pregnenolone derivatives present the lowest inhibition constants for  $\alpha$ -glucosidases. Generally, the MTT assay shown that the conjugates affect cell proliferation less than the parent compounds. Moreover, flow cytometry studies have shown that the diosgenin derivative induced a reduction of cell viability comparable to the observed with the positive control (5-fluorouracil) and the mother steroid. **Conclusion:** The synthesised conjugates did not lead to an improved cytotoxic effect in comparison with the isolated mother compounds, except the diosgenin hybrid. However, they have a relevant potential as selective  $\alpha$ -glucosidase inhibitors.

- 107 **Sex Differences In The Trauma-Related Symptoms: Evaluation Of Serbian Population Exposed To Natural Disaster**  
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**Aims:** To evaluate if there are differences in the severity of trauma-related symptom clusters between the sexes (re-experiencing, avoidance, negative cognitions and mood, and arousal; according to DSM V) and in experiencing negative emotional states (depression, anxiety, stress). **Introduction:** During the 2014 year, a part of the population from Serbia was exposed to floods. After natural disasters and other types of extreme trauma some people will be more affected by trauma than others. How women and men differ in the symptoms that can manifest after the exposure to extreme trauma is still an open question. **Methods:** Forty healthy volunteers from Obrenovac (25 women and 15 men) were administered three instruments: The Life Events Checklist – LEC-5, PTSD checklist for DSM V – PCL-5 and Depression Anxiety Stress Scale – DASS. **Results:** The majority of sub-

jects reported floods as the major lifetime trauma (72.5%). Despite the relatively low level of the post-traumatic symptom intensity (5.02 ±4.99), women exhibited significantly higher total post-traumatic symptom severity scores in comparison to men (p<0.01) and higher severity of trauma re-experiencing symptoms (p<0.01). Sex differences were neither observed in other trauma-related symptoms clusters, nor in the severity of current depression, anxiety and stress symptoms. **Conclusion:** In the non-clinical sample with only a sub-threshold level of post-traumatic symptoms, the most prominent difference between sexes was found in relation to re-experiencing and this finding is consistent with the results obtained from clinical samples. Future studies are needed to examine whether trauma-focused treatments can be gender-tailored and to which extent they might prevent the full-blown post-traumatic stress disorder.

**108 The Influence Of Adenosine Monophosphate-Activated Protein Kinase (Ampk) In Neurotoxicity Of 1-Methyl-4-Phenyl-2,3-Dihydropyridine (Mpp+) In Human Neuroblastoma SH-SY5y Cells In Vitro**

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**Aims:** The aim of this study was to investigate the role of AMPK activation in neurotoxicity of MPP+. **Introduction:** Mitochondrial dysfunction and decrease of energy metabolism are important factors in Parkinson's disease (PD) pathogenesis. The key sensor of the cell energy status is adenosine monophosphate-activated protein kinase (AMPK). The deficiencies of energy metabolism in PD pathophysiology might be associated with potential functional defects in AMPK signaling. The administration of 1-methyl-4-phenyl-2,3-dihydropyridine (MPP+) is one of the experimental models most commonly used to examine the pathogenesis of PD. **Methods:** Experiments were conducted in SH-SY5y human neuroblastoma cell line. Cells were treated with the different concentrations of MPP+ and/or AMPK pharmacological activator, 5-aminoimidazole-4-carboxamide ribonucleotide (AICAR). Cell viability was assessed using MTT assay. The activation status of AMPK post-treatment was determined by immunoblotting. **Results:** When MPP+ was added to SH-SY5y cells, the cell viability was decreased with MPP+ exposure in a time- and dose-dependent manner. AICAR treatment alone did not alter cell survival. The combined use of AICAR and MPP+ significantly decreased the viability of cells (p <0.05) compared to treatment with only neurotoxin MPP+. Western blot analysis showed decreased viability following MPP+ or combination treatment was preceded by increased levels of p-AMPK (after 2 hours and 16 hours). **Conclusion:** MPP+ treatment induces cell death of SH-SY5y human neuroblastoma cells. Potential mechanism of toxicity includes the activation of AMPK. The pharmacological AMPK activator (AICAR) does not lead to better survival of cells exposed to neurotoxic effects of MPP+. Treatment with AICAR, then with MPP+ decrease cell viability in comparison to cells exposed to the effects of neurotoxin MPP+, suggesting that the activation of AMPK mediates the process of increased cell death.

**109 Evaluation Of Time Until Reperfusion In Patients Who Underwent Primary Angioplasty After Myocardial Infarction With ST Segment Elevation: Experience In A Central Hospital In Portugal**

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**Aims:** Our objectives were: 1- See the state of art in treatment of STEMI in a central hospital in Portugal 2- Study the delays in the reperfusion chain to improve and transform ER in a more efficient service. **Introduction:** The treatment of ST Segment Elevation Myocardial Infarction (STEMI) is urgent, in order to avoid irreversible damage of the muscle, and should therefore take place in the shortest time possible. This study aimed at evaluating the delays in the reperfusion chain in STEMI treatment, in order to optimize the various forms of admission (F.A.) of patients in Centro Hospitalar do Porto

(CHP). **Methods:** Retrospective study of all patients admitted with suspected STEMI who performed a primary percutaneous coronary intervention (PCI) in CHP during 2015. **Results:** In 2015, 167 patients performed PCI with the suspected diagnosis of a STEMI. Most patients were male (70.9%). The average age of patients was higher in women than in men (68.8 vs. 61.6 years; p=0.002). The greatest delay in reperfusion chain occurred in the time between the onset of symptoms and first medical contact (FMC), regardless of F.A. The FMC-PCI average time in the emergency room (E.R.) was 160 minutes, whereas in the pre-hospital emergency service (VVC) was 119 minutes. The biggest difference between these two F.A. was observed in the time between the FMC and the realization of ECG (VVC: 8.55 min vs. E.R: 45.4 min). **Conclusion:** The present study shows that only pre-hospital emergency service meets the international recommendations for the treatment of STEMI in CHP. In order to comply with international recommendations for the treatment of this condition, the E.R. of CHP needs to introduce several improvements in its current procedures. To achieve this goal the implementation of a new screening protocol is proposed: CSAPS.

**110 Anxiety And Depression In Blepharospasm Patients**

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**Aims:** The first aim was the assessment of correlation between demographic and clinical parameters, with anxiety and depression in the population of blepharospasm patients. The second was to compare the clinical features of blepharospasm, including depression and anxiety, with a group of patients with hemifacial spasm. Final aim was to establish the determinants of quality of life among patients with blepharospasm. **Introduction:** Blepharospasm is a disorder characterized by involuntary contractions of orbicularis oculi. It is the most common form of focal dystonia after cervical dystonia. Anxiety and depression have major impact on clinical course of blepharospasm and strongly affect health related quality of life. **Methods:** We examined a group of 17 patients with blepharospasm, and a control group of 17 patients with hemifacial spasm. Clinical evaluation comprised age, disease duration, botulinum toxin treatment duration and subjective assessment of therapeutic effect. Jankovic Rating Scale was used for severity of disease, and Beck's Depression Inventory and Hospital Anxiety and Depression Scale were used for assessment of depression. Quality of life was determined by Cranio-cervical Dystonia Questionnaire in Serbian. **Results:** There was no difference in the scores of anxiety and depression between the groups of blepharospasm and hemifacial spasm. Marital status correlated with scores of depression, and was strongest predictor of both anxiety and depression. Subjective assessment of therapeutic improvement correlated with better activities of daily living. Age, anxiety and depression were predictors of stigma, emotional wellbeing and global quality of life score. **Conclusion:** Anxiety and depression scores were similar in the groups of blepharospasm and hemifacial spasm. Marital status was the parameter that showed best correlation with anxiety and depression in blepharospasm patients. In line with other studies, strongest predictors of quality of life in blepharospasm were anxiety and depression.

**111 Cancer-Associated Splicing Misregulation: Assessing The Potential Therapeutic Effect Of Clk1 Inhibition**

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**Aims:** The aim of this work was to assess the effect of CLK1 inhibition on cancer-associated splicing patterns. **Introduction:** Recent studies highlight the role of alternative splicing (AS) in cancer progression and identify some components of the splicing machinery as potential therapeutic targets [1-3]. Namely, members of the SR protein family of splicing factors are extensively phosphorylated by kinases such as the cdc2-like kinases (CLKs) [4-6], that appear up-regulated in cancer [7]. Since kinases can be targeted by specific inhibitors, we hypothe-

sized that modulation of CLK1 activity may regulate the formation of cancer-associated splicing isoforms. **Methods:** Human clear cell renal carcinoma (RCC) cell lines expressing different levels of CLK1 were treated with two alternative strategies: selective chemical inhibition of CLK1 activity, and down-regulation of CLK1 expression by RNAi. The effect on CLK1 expression itself was studied at the transcript level by RT-PCR and at the protein level by WB. At the same time, purified total RNA from treated cells was used to access AS with specifically designed probes, through the NanoString nCounter System. This innovative technology enables direct digital readout of each mRNA and its relative abundance, without requiring cDNA synthesis or enzymatic reactions. **Results:** Our results show that the NanoString nCounter System can be used as a novel tool to study alternative splicing in cancer. We also observed that treatment of cells with CLK1 inhibitors caused no major changes in the majority of splicing events analyzed. However, splicing of CLK1 mRNA was affected by CLK1 inhibitors. **Conclusion:** We developed a quantitative assay to study alternative splicing that is independent of cDNA synthesis. We have adapted the assay to interrogate the effect of chemical inhibitors on cancer-associated splicing patterns. We anticipate this assay will be useful to further explore the potential of splicing modulation as a therapeutic target in cancer.

**112 Virulence Factors, Antibiotic Resistance, Phylogenetic Groups And In Vitro Biofilm Formation By Uropathogenic Escherichia Coli Strains Isolated From Community-Acquired Urinary Tract Infection Patients In Poland**

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**Aims:** The primary purpose of this investigation was to assess the presence of virulence factors among UPEC and determine their correlation with antibiotic patterns, biofilm formation and phylogenetic groups. **Introduction:** UPEC are the most frequent etiological agent of urinary tract infections (UTIs) and can possess a number of virulence factors which play an important role in crucial stages of infections 1, 2, 3, 4. **Methods:** The present study was conducted on UMB, Poland. The total of 113 of E. coli were isolated from community-acquired patients with symptomatic UTIs. The identification of bacteria was performed by mass spectra of peptide obtained by MALDI-TOF-MS (BRUKER). Bacterial DNA was extracted using the magnetic beads technology. The PCR (Bio-Rad) was used to assess the prevalence of the genes encoding for pili, iron acquisition systems, toxins and other VF. The standard disc diffusion method was done to evaluate the antibiotic susceptibility (EUCAST criteria). The ability of isolated E. coli strains to form biofilm were studied by Confocal Laser Scanning Microscopy (OLYMPUS). The results were analyzed using Chi-square and Mann-Whitney U tests. **Results:** The most abundant pattern of virulence genotypes among UPEC strains was: fimH+, papC+, sfaDE+, afaBC-, irp2+, iron+/-, vat+, hlyA+, cnf+, usp+, agn43+, traT +/- . E. coli represented mainly (83.3%) phylogenetic groups B2 and D. The following virulence genes: papC, sfaDE, iron, irp2, hlyA, cnf1, vat, agn43, usp, traT were statistically associated with the group B2. Significant differences in the occurrence of the number of genes among resistant strains were observed. Moreover, adhesins, agn43 genes and resistance to antibiotics were more common in strong biofilm producers (82.3% of E. coli). **Conclusion:** In conclusion, these findings indicate, that uropathogenic E. coli strains resistant to various groups of antibiotic may be less virulent. Furthermore, UTIs caused by E. coli which formed biofilm promote the colonization and increased the incidence rate of UTIs.

**113 Levels Of Coagulation Factors Vii, X, Xi And Xiii In Pediatric Meningococcal Sepsis**

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**Aims:** To study levels of factor VII, X, XI and XIII in pediatric meningococcal sepsis as well as the association between these coagulation factors and mortality of pediatric meningococcal sepsis. **Introduction:** Meningococcal sepsis is characterized by purpuric rash and disseminated intravascular coagulation (DIC), leading to a high mortality and morbidity. A deregulated coagulation cascade is an important determinant of outcome. However, information about the role of coagulation factors VII, X, XI and XIII in meningococcal sepsis is scarce. **Methods:** We conducted a retrospective laboratory study in 28 children with meningococcal sepsis. Citrate plasma was collected at admission (n=20), at 24 hours (n=9) and at 1 month (n=13). Levels of factor VII, X, XI, and XIII were measured with the Sysmex CS-5100. **Results:** Levels of factor VII, X, XI and XIII were lower at admission compared to levels at 1 month (factor VII: median 0.18 vs. 1.01 U/ml, p<0.01; factor X: 0.49 vs. 1.03 U/ml, p<0.01; factor XI: 0.44 vs. 0.93 U/ml, p<0.01; factor XIII: 0.68 vs. 1.23 U/ml, p<0.01). Survivors and non-survivors had no statistically significant difference in median levels of factor VII, X, XI and XIII (factor VII: 0.15 vs. 0.30 U/ml, p=0.11; factor X: 0.48 vs. 0.42 U/ml, p= 0.42; factor XI: 0.42 vs. 0.83 U/ml, p=0.28; factor XIII 0.73 vs. 0.49 U/ml, p=0.28). **Conclusion:** Levels of coagulation factors VII, X, XI and XIII were decreased at admission, presumably due to an increased consumption of coagulation factors in a pro-coagulant state like meningococcal sepsis. At one month, levels of all coagulation factors were normalized. Non-survivors show a trend for higher factor VII levels than survivors. Future studies in a larger cohort of patients should study the prognostic value of factor VII level in pediatric meningococcal sepsis.

**114 Thoracoscopic Epicardial Ablation In Patients With Persistent Atrial Fibrillation - Long- Term Observation.**

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**Aims:** The aim of this study is to assess long-term efficacy of epicardial thoracoscopic ablation in patients with persistent atrial fibrillation (AF). **Introduction:** Atrial fibrillation (AF) is a serious medical state that affects nearly 2% of population and leads to ravages as heart failure, stroke or death. Thoracoscopic epicardial ablation may be the new efficient way of treatment. **Methods:** Thoracoscopic epicardial ablation of the right atrium, pulmonary veins, and left atrium was performed on the beating heart using the Cox MAZE III based diagram in 25 patients in 2006. After procedure, anticoagulation therapy was continued for 3 months. Follow-up visits were performed 1, 3, 6, and 12 months after the procedure, included medical history updating, physical examination and 12 lead ECG. Mean age of patients was 56,4 y.o. (42-77), mean AF duration was 8,6 years. The last phone call follow up visit was performed after 10 years after procedure. **Results:** One year after the procedure 84% of patients presented stable sinus rhythm, 8% presented AF, 4% of patients had implanted with DDD pacemaker due to sinus bradycardia. 10 years after the procedure, 22% of patients presented sinus rhythm with

episodes of paroxysmal AF 2-4 times a year. In those patients no other ablations were performed. 30% of patients had another ablation due to recurrence of AF in the time between last visit and last phone call. 28% of patients died due to reasons not correlated with the procedure. 20% of patients were lost to follow-up. **Conclusion:** 10-year observation showed recurrence of the rhythm disorders in 30% of patients undergoing epicardial thoracoscopic ablation. Method seems to be effective and safe for patient. However, due to the small number of cases in the study, method needs further investigations.

**115 Inter-Dialytic Weight Gain, Ultrafiltration Rate And Diabetes As Independent Indicators Of Long-Term Total And Cardiovascular Mortality In Hemodialysis Patients Under 60 Years.**

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**Aims:** The aim of the study was to assess the effect of hemodialysis (HD) parameters: inter-dialytic weight gain, ultrafiltration (UF) rate, dry weight, duration of the dialysis session, blood flow, HD period and age, diabetes mellitus (DM) on total and cardiovascular (CV) mortality in HD patients during 6-year follow-up. **Introduction:** Patients treated with HD have a 5-year mortality rate about 40-50% due to CV complications. **Methods:** The study included 223 patients (pts) (90 F and 133 M, mean age: 34.5 - 75.0) treated with HD. Median duration of HD - 70.0 months (24.0-120.0). The data on mortality was collected over a period of six years. All deaths occurred in hospital and causes of death were determined using history documentation. We divided patients in 4 groups: <60 (123), >60 years (yrs) (100 pts), with DM (33) and without DM history (190 pts). **Results:** During 6-year observation period, 100 pts (44.8%); 32 <60 yrs, 68 >60 died, including 83 (37.2%) due to CV cases (myocardial infarction, stroke) in 64 [28.7%] pts [17 <60 yrs, 47 >60], heart failure in 19 (8.5%) pts [2 <60 yrs, 17 >60]. Mean follow-up was 2,015.0 days (946.0-2463.0), the mean time to death was 1,166.0 days (654.5-1631.0) and the median time to transplant the kidney was 978.5 days (452.5-1735.0). The factors negatively affecting patients' survival in univariate Cox regression included: for all-cause death: the inter-dialytic weight gain (hazard ratio [HR]=1.60; p=0.01), UF rate (HR=3.63; p=0.01) for group <60 yrs; for CV death: UF rate (HR=4.20; p=0.03), diabetes mellitus (HR=5.11; p=0.00) for group <60 yrs; for HF death: diabetes mellitus (HR=2.93; p=0.027) for group >60 years. **Conclusion:** Increased inter-dialytic weight gain, UF rate and diabetes can be independent indicators of higher long-term total and CV mortality in HD patients under 60 years.

**116 Anti-Proliferative Efficacy Of New Steroidal Ais On Sensitive And Resistant Breast Cancer Cell Lines**

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**Aims:** The aim of the present work focused on the study of the biological effects of four new steroidal compounds (57, 58, 59 and 60), designed and synthesized based on structural modifications on the aromatase substrate androstenedione [1], and from other steroids that demonstrated to be potent AIs in human placental microsomes. **Introduction:** Breast cancer is the most common cause of cancer death in women worldwide, being the most prevalent the estrogen receptor-positive [ER+] breast tumors [2]. The aromatase inhibitors (AIs) represent one of the best options for the treatment and prevention of these tumors by blocking the enzyme aromatase, responsible for estrogens biosynthesis. Besides their efficacy, AIs cause serious

side effects such as bone loss and the development of acquired resistance. For this, the search for novel potent compounds, with fewer side effects, is currently needed. **Methods:** The aromatase activity evaluation and the biological effects were analyzed in an ER+ human breast cancer cell line that overexpresses aromatase (MCF-7aro). Cell cycle progression was studied by flow cytometry and caspases-7 and -9 activities were evaluated by a luminescence assay. It was also explored the action of the compounds in an AI-resistant breast cancer cell line that overexpresses aromatase (LTEDaro), by MTT assay. **Results:** All the AIs inhibit aromatase in MCF-7aro cells, caused cell cycle arrest in G<sub>0</sub>/G<sub>1</sub> and increased the activity of the initiation and execution caspases. Moreover, all compounds induced a significant decrease in LTEDaro cell viability. **Conclusion:** These results suggest that all the studied steroids are potent AIs and have anti-proliferative effects in sensitive breast cancer cells, causing cell cycle arrest and apoptosis. In addition, they re-sensitize AI-resistant cancer cells. This work provides new information about the most favorable structural modifications in androstenedione structure in order to design effective AIs and clarify the mechanisms underlying the anti-tumor activity.

**117 Comparison Of Results Of Hcc Surgical Treatment Due To Viral Etiology. One Center Experience.**

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**Aims:** The aim of this study was to compare the outcome of surgical treatment of Hepatic Cell Carcinoma (HCC) according to its etiology in order to evaluate postoperative prognosis. **Introduction:** About 2000 new HCC tumors are reported yearly in Poland and systematic increase is observed. In most of cases HCC appears in cirrhotic liver mainly associated with HCV or HBV infection. There is a need to evaluate the possible outcome of the surgical treatment before the operation. **Methods:** The retrospective analysis of the 203 HCC cases treated in years 2006-2015 was made. 104 (51.2%) patients had cirrhosis caused by HCV, HBV or both viruses. The surgical treatment, based on Barcelona Clinic Liver Cancer (BCLC) staging classification (transcatheter or laparotomy radio frequency ablation or not anatomical resection) was performed in 72 cases (69.2%). There were 13 (18.1%) patients with HBV, 59 (72.2%) with HCV and 7 (9.7%) with mixed HBV+HCV cirrhosis in observed population. **Results:** The recurrence of the neoplasm was observed in 39 cases (54.9%). Recurrence appeared in 5 cases of HBV group (38.5%), 29 cases of HCV (55.8%) and 5 of mixed HBV+HCV (71.4%). **Conclusion:** The rate of HCC recurrence maintains on a high level. The highest percentage of the cancer relapses was observed in the group of patients co-infected with HBV and HCV. Fewer in the HCV group. The trial is statistically significant. Although recurrence rate may be related to many factors such as tumor diameter, number of lesions, operation method, the etiology is also a significant factor and should be considered as a predictor for further treatment and follow up strategy.

**118 New Endosonographic Methods In Evaluation Of Mediastinum Changes- Ebus-Tbna, Eus-Fna And Cus-Na Complication Rate.**

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**Aims:** The aim of our study was to identify the complication rate of EBUS-TBNA, EUS-FNA and CUS-NA. **Introduction:** Endoscopic ultrasound-guided fine needle aspiration (EUS-FNA), endobronchial ultrasound-guided transbronchial needle aspiration (EBUS-TBNA) and combined ultrasound needle aspiration (CUS-NA) are becoming

methods of choice in the diagnosis of mediastinal and pulmonary lesions, as well as nodal staging in lung cancer and sarcoidosis assessment. Though safety of these medical procedures is taken for granted, serious complications have been reported. **Methods:** We designed a retrospective study of 6536 patients, who underwent EBUS-TBNA, EUS-FNA and CUS-NA between January 2009 and December 2015 at our department. **Results:** The complication rate after EBUS-TBNA and EUS-FNA was 4.21%. The most common complication was increased body temperature. The diagnosis of primary lung cancer was the strongest predictor for occurring fever (OR=1.6726, P=0.0203, CI 95% [1.0832-2.5829]) and hemoptysis (OR=2.4324, P=0.0243, CI 95% [1.1225-5.2709]). Three severe adverse events of pneumothorax were identified. No mortality was observed. **Conclusion:** Endosonography is becoming a gold standard in the diagnosis of pulmonary and mediastinal lesions. The EBUS-TBNA, EUS-FNA and CUS-NA should be considered as safe but invasive procedures with a significant complication rate. Considering the observed development of new endosonography techniques, further monitoring for adverse events occurrence is essential.

**119 The Effect Of The Synthetic Cannabinoid Win 55,212-2 In Human Endometrial Stromal Cells**

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**Aims:** The aim of this study was to elucidate the effects of the synthetic cannabinoid WIN 55,212-2 (WIN) in human endometrial stromal cell proliferation/death, using a telomerase-immortalized cell line (St-T1b) and primary cultures of term decidua fibroblasts (HdF). **Introduction:** Cannabinoids are characterized as molecules that can interact and activate the cannabinoid receptors CB<sub>1</sub> and CB<sub>2</sub>. The production of synthetic cannabinoids started given the possibility of these new drugs has lower effects than phytocannabinoids [1]. However, its ambiguous legal status and high affinity for cannabinoid receptors caught the attention of consumers. Besides the known psychotropic effects, peripheral organs may also be affected by cannabinoids, namely the endometrium [2]. **Methods:** Cells were treated for 24 and 48h and cell viability was assessed by MTT and LDH assays, whereas cell morphology was analyzed by Giemsa and H&E staining. Analysis of caspase -3/-7 activities were performed by using a specific luminescence assay and the involvement of the cannabinoid receptors was studied using the specific CB<sub>1</sub> (AM251; AM281) and CB<sub>2</sub> (AM630) antagonists. **Results:** WIN caused a 50% decrease in cell viability at 5 μM after 48h of treatment. By Giemsa staining it was observed morphological alterations, such as chromatin condensation, suggesting apoptosis. Thus, H&E staining was performed and apoptotic nuclei were observed accompanied by an increase in caspase -3/-7 activities. Pre-treatment of either St-T1b or HdF cells with selective CB<sub>1</sub> antagonists were able to attenuate the reduction in cell viability and increase in caspase -3/-7 activities induced by WIN. **Conclusion:** The synthetic cannabinoid WIN induces endometrial stromal cell death through CB<sub>1</sub> activation, which may impact female reproductive cycle and pregnancy establishment.

**120 Sex Steroid Influence On Endocannabinoid System Expression In The Rat Uterus**

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**Aims:** The aim of this study is to elucidate whether E2 administration induce changes in the expression of endocannabinoid system elements, as well as if these changes can be reversed by tamoxifen, a selective estrogen receptor modulator. **Introduction:** Anandamide

(AEA), the major endocannabinoid, is known to be involved in the modulation of several neuroendocrine functions, including the hypothalamic-pituitary-gonadal axis [1]. Given the ability of AEA, under sex hormone control, to suppress the release of LH in ovariectomized (OVX) rats [2] as well as modulation of the endocannabinoid system in central nervous system [3], it appears that changes in estradiol (E<sub>2</sub>) levels can influence cannabinoid signalling in a region specific way. **Methods:** OVX rats were allocated to one of four injection treatment groups: 1) 0.1ml oil; 2) 10mg estradiol benzoate; 3) 2mg tamoxifen followed by 10mg estradiol or 4) 2mg tamoxifen. The expression of endocannabinoid system was studied by western blot, qRT-PCR, immunohistochemistry and Masson's trichrome staining, whereas AEA levels were determined by LC-MS/MS. **Results:** The E<sub>2</sub> administration to OVX rats significantly increased CB<sub>1</sub>, CB<sub>2</sub>, NAPE-PLD and FAAH expression, which was confirmed by the qRT-PCR results. Moreover, these effects were absent with tamoxifen treatment and were not reverted by the administration of E<sub>2</sub>. The histological analysis also illustrated that the two receptors, as well as the AEA-metabolic enzymes are located mainly in the epithelial cells of both lumen and glands and, to a lesser extent, in myometrium. AEA quantification showed no changes in its levels in all the treatments. This may be due to the similar rise of AEA metabolic enzymes. **Conclusion:** These data collectively indicate that the expression of endocannabinoid system in rat uterus is regulated by E<sub>2</sub>. Based in these results, along with the existing data, sex hormones, such as E<sub>2</sub>, may have a direct regulatory role in the modulation of endocannabinoid system in female reproductive tissues.

**121 The Effects Of Caffeinated Drinks On Sleep Cycles Of Medical Students In Mangalore: A Cross Sectional Study.**

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**Aims:** To assess various parameters of sleep quality among college students. • To evaluate the extent to which caffeinated beverages and intake of energy drinks are associated with sleep quality. **Introduction:** Caffeine is known to be the most widely consumed stimulant in the world, used commonly for increasing mental alertness and performance, usually resulting in sleep deprivation. Moderate doses cause insomnia, lethargy and agitation as a result of stimulating the cortex and other areas of the brain. Sudden stoppage can cause withdrawal symptoms like headaches, loss of energy and alertness, anxiety and depression. High doses have shown positive inotropic and chronotropic effects on the heart. **Methods:** A proforma and the Pittsburgh Sleep Quality Index (PSQI) questionnaire were used to collect data from 350 students from 2nd and 3rd year students of KMC Mangalore, in 2013 after approval from the Institutional Ethics Committee. The collected data was analyzed using SPSS v.17.0. Chi-square test was performed and p<0.05 was considered to be statistically significant. **Results:** Of the 350 students evaluated it was seen that 59% of students suffered from bad sleep as per PSQI. It was observed that 45% of female medical students had good sleep quality in comparison to 35% in males as per PSQI. Consumption of caffeinated energy drinks had the highest incidence of bad sleep (67.1%) followed by cola and cola like beverages (62.9%), and lastly coffee and coffee products (61.5%). It was noted that 44.4% of medical students who didn't consume caffeinated beverages had good sleep compared to 27.3% who consumed 5 or more cups a day. Most common side effects noted were headache (46%), insomnia (43.1%) and fatigue (42%). **Conclusion:** Among various caffeinated beverages energy drinks and cola containing beverages affected sleep quality the most with worsening of side effects on increased consumption.

**122 Investigation Of Camk Ii Mrna Expression In Genetic Absence Epilepsy Rats From Strasbourg**

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**Aims:** Aim of this study was to investigate the expression of CAMKII mRNA levels in GAERS and control Wistar rats. **Introduction:** Calcium calmodulin kinase II (CaMK II) regulates many cellular functions response to increased intracellular calcium. It is most commonly found in the brain and associated with the neurotransmitter synthesis, release, long-term potentiation and spatial learning. Phosphorylation of CaMK II has been shown to occur only in neurons in kainic acid induced epilepsy seizure. This data suggest that neuronal CaMKII phosphorylation could play a role in kainic acid induced epilepsy model. Genetic Absence Epilepsy Rats from Strasbourg (GAERS) is one of the well validated genetic models of typical absence epilepsy. **Methods:** 3-4 month aged, 230-290 gr weighted GAERS and Wistar rats are used in experimental groups. The brain cortex and hippocampus tissues of rat brains were isolated and were frozen at -80 C degree. We performed transcription analysis of CAMK II gene with designed specific primer and probes for leptin genes. Quantitative SYBR green real-time PCR reactions were performed. Data analyzed by REST software. **Results:** We found that CAMK II is upregulated in cortex of GAERS group compared with control Wistar rats. We also found that the increased CAMK II levels in hippocampus of the GAERS group. These increases were statistically significant ( $p < 0.005$ ). **Conclusion:** These results have shown that enhanced gene expression of CAMKII may contribute to epileptic phenotype in this strain. Further experiments will be performed to investigate the implication of CAMK II in other experimental epilepsy models.

- 123 **Does Ghrelin Induce Relaxation Of Bovine Ciliary Muscle?**  
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**Aims:** Study if ghrelin (and its desacylated form) induces relaxation of pre-contracted bovine ciliary muscle. **Introduction:** Ghrelin promotes the relaxation of both iris sphincter and dilator muscles[1]. Also, this peptide decreases the intraocular pressure in animal models of acute intraocular hypertension[1]. In humans, its aqueous humor levels are reduced in patients with open-angle glaucoma[2]. Tension of ciliary muscle influences the outflow of aqueous humor - while its contraction increases the trabecular route and decreases the uveoscleral one, the converse occurs with its relaxation[3,4]. **Methods:** 2,5x2,0mm radial strips (n=49) of the outermost region of the ciliary muscle were dissected from bovine ocular globes, mounted horizontally in a tissue bath system containing continuously oxygenated freshly-made PSS solution (37°C, pH=7,4) and connected to an isometric transducer. After stabilizing, contraction was induced with carbachol (10-5 M) and the tension of each sample at least duplicated. The effects of increasing concentration every 3 minutes of ghrelin (n=14) and des-acyl-ghrelin (n=8) were compared to their controls (DMSO, n=12; H<sub>2</sub>O, n=15, respectively). **Results:** Mean pre-contraction tension of all samples was 2,68±0,09mN, mean carbachol-induced peak tension was 7,94±0,21mN and mean stabilization tension before adding the testing substances was 6,77±0,19mN. The maximum concentration used of ghrelin led to an increase in muscle tension of 6,29±2,01%; its control (DMSO) produced a variation of 4,14±0,89% - this difference was not statistically significant. Regarding des-acyl-ghrelin, its maximum concentration was associated with a change in 4,28±2,73%, similar to the 3,94±0,93% variation due to water. Also, there was no difference statistically significant between the effects of ghrelin and des-acyl-ghrelin. **Conclusion:** Although ghrelin is capable of modulating the kinetics of iris sphincter and dilator muscles and appears to be related to the pathophysiology of glaucoma, this peptide's effects were no different from its control in bovine ciliary muscle.

- 124 **Emergency Department Readmissions After Spontaneous Intracerebral Hemorrhage In Sotavento Algarve**  
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**Aims:** To describe the frequency and the reasons of Emergency Department (ED) readmissions within the first one-year period of survivors of spontaneous intracerebral haemorrhage (sICH). **Introduction:** sICH is known to be the most severe form of stroke with the highest one-year mortality and morbidity. There is increasing evidence that good transitional care and post-acute follow up can reduce this burden. ED readmissions after sICH index, which is an indicator of sICH burden, impacts negatively the prognosis. Data on the topic is inexistent in Portugal. **Methods:** Observational retrospective cohort study of sICH patients admitted between January 2014 and June 2015. Using the hospital electronic database and the national platform for data collection, all ED visits after hospital discharge were manually extracted and analysed. **Results:** The number of cases was 122 and 34 (27.9%) died while hospitalized. The mean age of survivors (n=88) was 70 years; most n=55 (62%) were males. The mean mRankin score at discharge was 4 and showed positive correlation with the ICH score (index of severity) ( $p=0,000$ ). Depending on the relative time of follow up, ED readmissions occurred in 78% of the survivors (once), 19% (twice) and 23% (3 times or more). These episodes resulted in hospitalization in 52% of patients. The most common causes of ED visits were: falls (n=10/9,90%), systemic complications (n=9/8,9%) and neurologic complications (n=8/7,9%). Of the 2014 and 2015 sICH survivors, 6(10%) and 3(12%) respectively, died after index hospitalization. **Conclusion:** Morbidity of sICH survivors is high in our reality. The majority of survivors are admitted to ED in the first year after stroke. It is possible to prevent part of these readmissions with good transitional care and post-acute follow up management. Further studies to identify predictors or patients at risk of ED readmissions after sICH are needed.

- 125 **Fecal Microbiota Transplantation As A Tool For Modulation Of Susceptibility To Chemically Induced Colitis In Mice**  
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**Aims:** The aim of the study is to determine whether susceptibility to chemically induced colitis is transferable via fecal microbiota transplantation. **Introduction:** Inflammatory bowel disease (IBD) is a chronic condition affecting gastrointestinal tract. Pathogenesis is still not completely understood. It is known that gut microbiota plays a role in developing the disease. Transferring fecal microbiota might clarify the role gut microbiota plays in pathogenesis of IBD, which may indicate possible strategy of prevention or treatment. **Methods:** Experiment was conducted on CD1 male mice. After antibiotic pretreatment recipient mice were orally gavaged with fecal bacteria obtained from donor mice that were pronounced as either resistant or sensitive to colitis (based on clinical parameters). Colitis was induced with dextran sodium sulphate ad libitum in drinking water for 7days. Intestinal permeability was measured with fluorescein isothiocyanate (FITC). Concentration of extracellular DNA (ecDNA) and FITC was evaluated from plasma. Myeloperoxidase activity (MPO) was evaluated from colon tissue. **Results:** Albeit not statistically significant, there were clear trends pointing towards decreased weight loss and longer colon lengths in group of mice that received sensitive microbiota compared to those with resistant microbiota. FITC showed similar trend suggesting that sensitive group had lower intestinal permeability than resistant group. MPO, colon weight to length ratio and stool consistency did not differ between groups. Analyses of ecDNA did not show differences between groups. However, there was strong correlation between ecDNA concentrations and total weight loss. Similarly, FITC concentrations correlated with amount of nuclear DNA in plasma. **Conclusion:** The results show that there were some differences between groups. However, the effect of transplanted microbiota cannot be concluded, since the analysis of microbiota composition has not been performed. These preliminary results show future pers-

pective in studying FMT as a tool for modulation of colitis development and progression and in evaluating the role of ecDNA in colitis.

- 126 **3D Printed Models Of The Eye With Uveal Melanoma For Planning Of Stereotactic Radiosurgery On Linear Accelerator**  
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**Aims:** The aim of our work is to develop a new modality for visualization of intraocular tumors in three dimensional space for planning of stereotactic radiosurgical procedure on linear accelerator. **Introduction:** Uveal melanoma is the most common malignant tumor of the eye. Stereotactic radiosurgery on linear accelerator is the method of treatment requiring precise planning. However, sometimes it is very difficult to imagine the structures using only two-dimensional CT and MRI scans. For the team of specialists planning the procedure are 3D printed models the way how to perceive the real shape of the tumor. **Methods:** In a software for segmentation (3DSlicer) we created virtual 3D model of eye globe with tumorous mass based on tissue density from CT and MRI data. We made a sharp cut of the model to uncover the inner surface of the globe, preserving important structures. Virtual model was then processed in a slicing software (Simplify3D) and printed on 3D printer using FDM (fused deposition modeling) technology. Material used for printing was polylactic acid. **Results:** We fabricated 4 accurate eye models from CT/MRI data of patients with uveal melanoma. Two models were made for retrospective analysis, two were made before the stereotactic radiosurgery of a patient. Volume of the tumorous mass was between 0,1 - 0,8 cm<sup>3</sup>. Three models were made in real size, one of them was 3 times enlarged. **Conclusion:** Planning of stereotactic surgery is based on CT and MRI data. In each slice are manually drawn borders of tumorous mass and critical neuroanatomical structures (optic nerves, lenses, chiasma opticum and truncus cerebri). Accuracy of defining all these structures in a planning software depends on understanding of their collocation. By creating a new modality for tumor visualization we provided real model of the eye for the specialists which enabled them more effective planning of the stereotactic radiosurgery.

- 127 **Exercise Preconditioning Prevents Skeletal Muscle Wasting By Modulating Inflammation In Experimental Pulmonary Arterial Hypertension**  
Mariana Barros<sup>1</sup>, Sónia Barros<sup>1</sup>, Rita Ferreira<sup>2</sup>, José Alberto Duarte<sup>3</sup>, Adelino F Leite-Moreira<sup>1</sup>, Tiago Henriques-Coelho<sup>1</sup>, Daniel Moreira-Gonçalves<sup>1,3</sup>  
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**Aims:** The current work aims to investigate the impact of exercise preconditioning on inflammatory process which conduce to skeletal muscle wasting in an animal model of PAH induced by monocrotaline (MCT). **Introduction:** Skeletal muscle wasting contributes to the poor functional status and quality of life of patients with pulmonary arterial hypertension (PAH). Although the exact mechanisms remain unidentified, there is cumulative evidence suggesting an important role for inflammation as an upstream trigger of anabolic/catabolic imbalance in the skeletal muscle. **Methods:** After 4 weeks of training or cage living, male Wistar rats were injected with MCT (60mg/kg) (ExMCT and SedMCT, respectively) or saline (ExC and SedC, respectively), and sacrificed after an additional 4week-period of movement confined to cage's space. Gastrocnemius and blood samples were collected for analysis. **Results:** Exercise preconditioning prevented the decrease of body weight, cross sectional area and MHC-I isoform reduction in ExMCT. These changes in ExMCT were paralleled by reduced circulating levels of C reactive protein, myostatin and IL-1beta. All these inflammatory markers were elevated in the plasma of Sed-MCT. **Conclusion:** The present study provides evidence that exercise

preconditioning prevents cardiac cachexia by averting inflammation.

- 128 **Pre-Transplantation Analysis Of Kidney-Receiving Pediatric Population In North-Eastern Poland**  
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**Aims:** In our study we aimed to investigate medical records for pre-transplantation clinical data - time of dialysis and waiting time, age at transplantation and cause of renal failure. **Introduction:** Kidney transplantation is known to be the most effective and end-step of replacement renal therapy. Kidney transplantations are the most common - in 2014 in Poland 1064 renal and 37 combined renal-pancreatic transplantation per all 1531 deceased-donor and 55 living-donor transplantations were performed. Patients qualified to the procedure are classified as ESRD (end-stage renal disease G5) or kidney failure in the course of AKI (acute kidney injury). **Methods:** A retrospective analysis of medical records of Medical University of Białystok Children Hospital patients who underwent the kidney transplant surgery between 1994 and 2014 was conducted. The study covered 44 patients: 26 boys and 18 girls, 6 of whom underwent the procedure in the adult age. **Results:** 4 patients received living-donor graft, 36 deceased - donor transplantation and 4 patients had died during pre-transplantation dialysis. One patient rejected the graft presenting symptoms of acute graft versus host reaction. Mean age of patients qualified to dialysis renal replacement therapy was 11,5 years (girls 12,6y.; boys 10,7y.). 2 years and 8 months was the mean time of dialysis and waiting for kidney transplantation (2y. 4months and 2y. 10months in girls and boys respectively). Patients underwent the surgery at mean age of 13,9 years (14,7 y. for girls and 13,1 y. for boys). The most common disorder leading to ESRD in boys was posterior urethral valve (PUV) and polycystic kidney disease (PKD) among girls. 75% patients underwent the transplantation due to congenital malformations at mean age of 13 years. **Conclusion:** The leading cause of kidney failure among children are various congenital defects. Still deceased-donor transplantations state the majority of all transplantations.

- 129 **3D Printing In Reconstructive Surgery Of The Facial Skeleton**  
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**Aims:** The presented work describes use of 3D printing technology and its benefits in diagnostics and therapy of 42-year-old male patient diagnosed with malignant tumor of the base of the oral cavity indicated for radical resective surgery with reconstruction. **Introduction:** The reconstruction is performed by forming a new lower jaw from modifiable titanium plate as a support for autologous fibular graft. This technique has its limitations, risks and requires a large team of professionals and around 20 hours in the operation theater resulting in long anesthesia and high costs. In regular method, the titanium plate is bent during surgery according to the patient's mandible which takes time and is rather invasive. **Methods:** To obtain high quality virtual model for 3D printing, Cone-beam CT scan of the head was performed. Data from the CBCT were imported into open-source software InVesalius for segmentation. Differentiation between soft and hard tissues using Hounsfield scale was performed and a virtual polygonal model of the mandible was created. This model was virtually edited and prepared for 3D printing. Customised low cost FDM printer was used with polylactic acid filament material for its low printing deformation. **Results:** By creating an exact 3D model of the patient's mandible a thorough presurgical planning could be performed, as well as bending of the titanium plate prior to the surgery. This method saved approximately 2 hours in the operation theater, patient was less exposed to the risks of general anesthesia and implanted plate was more precise. This method was less traumatizing for the patient and supported faster postoperative recovery. **Conclusion:** 3D printing has significant benefits in maxillo-facial surgery as it is seen from the published case reports. For example, in this case, creating and individualised 3d printed guide for precise cutting of the fibula could be made, which could possibly shorten

the surgery even more.

- 130 Development Of Novel 4-azasteroid Derivatives As Potential 5 $\alpha$ -Reductase Inhibitors: Synthesis, Biological And Computational Evaluation**  
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**Aims:** Development of new 4-azasteroid derivatives and evaluation of their effects in different cell lines and their affinity to 5 $\alpha$ -reductase by molecular docking. **Introduction:** The enzyme steroid 5 $\alpha$ -reductase (5AR) is responsible for the NADPH-dependent reduction of testosterone to 5 $\alpha$ -dihydrotestosterone (DHT). The abnormally high 5AR activity in humans results in excessively high DHT levels in peripheral tissues, which has been implicated in the pathogenesis of prostate cancer and benign prostatic hyperplasia[1]. Therefore, steroidal and non-steroidal compounds have been synthesized and tested as 5AR inhibitors. As the compounds in the clinic (finasteride and dutasteride) have relatively low potency and can originate side effects, there is the need for more potent and safe drugs[2]. **Methods:** Several novel 4-azasteroid derivatives were synthesized from testosterone and progesterone, considering the pharmacophore of finasteride and dutasteride. Additionally, to introduce a bulky group and potentially improve the affinity to 5AR, an aldehyde was added in 16-C and 21-C positions of testosterone and progesterone, respectively. Then, the antiproliferative effects of these compounds was evaluated by the MTT assay in NHDF, LNCaP and T47D cells. Cell viability was also analyzed in LNCaP cells using propidium iodide staining and flow cytometry. Moreover, to understand the affinity of these compounds to 5AR, molecular docking studies were performed with 5 $\beta$ -reductase, since coordinates of 5AR are not available. Finally, docking simulations with androgen receptor, estrogen receptor- $\alpha$  and CYP17A1 were also accomplished. **Results:** The fourteen novel 4-azasteroid derivatives were obtained in reasonable yields. MTT assay showed that several compounds have important antiproliferative effects in LNCaP cells. Molecular docking results showed that the majority of the compounds have high affinity to 5AR, and generally low affinity for other targets. **Conclusion:** MTT and flow cytometry assays as well as molecular docking studies showed that 16-[(4-methylphenyl)methylidene]-4-azaandrost-5-ene-3,17-dione can be a promising compound, having effects in LNCaP cells similar to the observed with finasteride.

- 131 Health Behaviour And Lifestyle Practices Among Doctors Practicing In A Coastal City Of South India**  
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**Aims:** To evaluate health behavior, lifestyle and morbidities amongst doctors practicing in Mangalore and assess whether doctors implement their knowledge of health and its association with various morbidities. **Introduction:** The importance of obesity as a risk factor for the development of various chronic illnesses is well established in the medical field. Doctors themselves are vulnerable candidates to the lifestyle-associated morbidities. Interventions or guidelines should be put in place in order to improve the health and well-being of doctors. Despite awareness, there is limited evidence of research conducted on health amongst doctors in India. **Methods:** A 2 week, descriptive cross-sectional study was conducted in hospitals and private clinics in Mangalore. Study approval was obtained from the Institutional Ethics Committee of Kasturba Medical College, Mangalore. All doctors (excluding Interns and Post-Graduate students) currently in clinical practice were included and selected by convenience sampling. Data was collected using self-administered, semi-structured questionnaire. Study variables included were socio-demographic profile, self-reported practice on standard precautions and factors

affecting health. **Results:** Large proportion of the sampled population reported limiting intake of refined sugars/saturated fats while consuming high dietary fiber all known to promote healthy living. Despite this, 61% of the medical personnel were overweight or obese with a significant percentage being male doctors (p=0.034), indicating lack in physical activity. Statistically significant associations were obtained between obesity-associated morbidities, Hypertension (88.2%, p=0.034) and Diabetes Mellitus (100%, p=0.006). **Conclusion:** Doctors are well aware and are constantly exposed to life-style associated morbidities affecting a wide range of the global population. However, from the results of this study, doctors, themselves, do not follow healthy life-style guidelines that they promote amongst their patients. Further research is required to identify lifestyle practices as risk factors for obesity and assess these parameters early before the onset of obesity in order to find an association.

- 132 Sources And Proportion Of Stress And Burnouts Among Medical Postgraduates In Mangalore, Karnataka, India**  
 Sawartha S.<sup>1</sup>, Kulkarni V.<sup>2</sup>, Madhu A.<sup>1</sup>, Senthil S.<sup>1</sup>, Ibrahim L.<sup>1</sup>, Amarasekera S.<sup>1</sup>  
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**Aims:** To determine the proportion, sources of stress and occurrence of burnouts among medical PGs. **Introduction:** Postgraduate (PG) medical training environment has been regarded as highly stressful and challenging for students. Firstly, the huge disparity between the number of aspiring undergraduate students and the lack of available PG seats compels them to go through stressful periods of intensive preparation. Secondly, once in the field the long working hours and pressure from superiors precedes to stress. However, limited studies have been conducted among medical PGs unlike undergraduates. **Methods:** A 1 month, descriptive cross-sectional study was conducted in 2 hospitals in Mangalore. All medical PGs enrolled into clinical disciplines (excluding PGs into pre and para clinical disciplines and non clinical background) were included and selected by convenience sampling methodology. Study approval was taken from the Institutional Ethics Committee (IEC) of Kasturba Medical College, Mangalore. Data was collected using Postgraduate Stressors Questionnaire (PSQ) and Maslach Burnout Inventory (MBI). **Results:** The major stressors were found to be performance pressure followed by academic pressure, both with an intensity of mild to moderate stress. The participants were least stressed about job prospects. Majority perceived that stress impacted their work efficiency (93.3%). Stress busters included listening to music (23.8%), talking to a friend/family (22.8%) and watching movies/TV (18.8%). Improving manpower (18.8%), decreasing working hours (15.4%) and recreation (12.4%) were measures identified to reduce stress. **Conclusion:** PGs undergo immense levels of stress both prior to and during the training period, which impacts their working efficiency. The results of this study imply that a majority of the PGs were stressed and to handle the pressure required various coping mechanisms. Therefore, it is important to emphasize the need of the institute to implement necessary measures in order to improve their efficiency and provide better patient care.

- 133 The Impact Of Physical Performance On The Quality Of Life Of Young People**  
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**Aims:** To study the relationship of the quality of life of young people with their level of physical performance to motivate them for self-correction and exercising. **Introduction:** Individual physical fitness has a significant contribution in health formation, in the body's ability to effectively perform muscular work. But rapid civilization development has contributed to the deterioration of the motor areas of life through social problem number one-lack of physical exercises. Comprehensive valuation of health is based not only on objective

data, but also on the subjective perception by man of psychological, emotional, social and economic aspects of life, namely quality of life and physical performance. However, their relationship is insufficiently studied. **Methods:** 136 medical students, 21,8 $\pm$ 0,3 years old, were assessed by pulse value of standard (Patent UA34351A) and questionnaire of the quality of life-SF-36. **Results:** Among the surveyed students there were 48,5% (percent) of students with reduced physical performance, 19,1%-with average physical performance and 32,4%-with increased physical performance. General health of students with high level of physical performance was significantly better compared with students with reduced physical performance and was 54,5 $\pm$ 1,7 and 48,6 $\pm$ 2,0 points respectively (p<0,05). Role functioning caused by emotional state significantly was the best of students with low and average physical performance and amounted to 59,1 $\pm$ 2,6 and 46,2 $\pm$ 5,0 points respectively (p<0,05), apparently because these students justified that physically less active, but anyway their lives quite diverse and their physical level are more than appropriate. Physical functioning, role functioning due to physical condition, intensity of pain, vitality, social function and mental health were not significantly different between these groups (p>0,05). **Conclusion:** Quality of life of young people depends on their level of physical performance scaled for general health and role functioning, due to emotional state, creating the need to modify their physical activity by developing individualized recommendations.

- 134 The Influence Of Diet On The Metabolic Effect Of Ileal Transposition In Sprague Dawley Rats.**  
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**Aims:** To investigate the influence of LC/HFD on the metabolic effect of IT, with or without diet changing after surgery in Sprague Dawley rats. **Introduction:** Metabolic surgery is increasingly recognized to have benefits for glycemic management in patients with type 2 diabetes mellitus. The preoperative nutrition history as well as postoperative diet could influence significantly on surgery effect. Moderate low carbohydrate/high fat diets (LC/HFD) are widely used to induce weight loss in overweight subjects. **Methods:** For 7 weeks before surgery, rats were fed ad libitum a high fat diet (HF, n=24) or control diet (CD, n=24). The HF and CD rats were randomly assigned to two types of surgery (ileal transposition-IT, and SHAM surgery). On day 3 after surgery, HF/IT, and HF/SHAM operated animals were randomly divided into two groups: ad libitum high-fat fed rats (HF/IT/HF and HF/SHAM/HF) and control diet pair-fed IT, sham-operated rats (HF/IT/CD and HF/SHAM/CD). IT and SHAM operated, CD-fed rats were divided in the same manner. **Results:** AUC after OGTT in IT group compared with SHAM operated animals did not reveal any significant differences. Within the groups preoperatively maintained on control diet, the CD/IT/CD group characterized lower fasting glucose level compared with CD/SHAM/CD group (63,16 $\pm$ 20,0 vs. 100,53 $\pm$ 22,3 mg/dL; p=0,009). GLP plasma level in 20 min. after OGTT in IT rats was significantly higher comparing to SHAM, but the preoperative HF diet significantly attenuated this effect (CD:138,59 $\pm$ 37,19 vs. 83,74 $\pm$ 14,61; HF:87,67 $\pm$ 7,53 vs. 60,65 $\pm$ 9,71 pmol/L). The significant increase of PYY concentration was observed after OGTT in IT group. The effect was more visible in the groups primarily fed CD diet and later on HFD, than originally HFD. **Conclusion:** Effects of ileal transposition may be significantly attenuated in patients with obesity resulting from a high fat diet on early stage of organism development. Low carbohydrate-high fat diet in our model ameliorate glucose tolerance.

- 135 Deepening The Characterization Of The Cuprizone Multiple Sclerosis Mouse Model - Relevant Steps Towards Remyelination**  
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**Aims:** This study aimed to characterize behavior and biochemical profiles associated with cuprizone-induced demyelination and spontaneous remyelination in an animal model of multiple sclerosis (MS). **Introduction:** MS is a chronic immune-mediated disease of the central nervous system characterized by degeneration of myelin sheath (demyelination). Recently, it has been suggested that glucagon-like peptide-1 (GLP-1), one of the main substrates of dipeptidyl peptidase 4 (DPP4), exerts neuroprotective and neurotrophic properties. However, changes on the DPP4-GLP-1 pathway remain to be characterized in MS and in animal models of the disease, such as the cuprizone-induced demyelination mouse model. **Methods:** Two male C57BL/6 mice groups (n=10 each) were fed with an oral solution of 0.2% cuprizone during 5 weeks (W5). Afterwards, half of them (n=10) continued on water for two more weeks (W7), which allowed the definition of two relevant milestones: W5 for the peak of demyelination and W7 for the early stage of spontaneous remyelination. At weeks 5 and 7, animals were subjected to behavior experiments (Y-maze, open-field and splash tests). Additionally, expression of GFAP, PLP, IL-1 $\beta$ , DPP4 and GLP-1R, in corpus callosum and/or cerebellum tissue, were evaluated through RT-PCR, WB and IHC. **Results:** Behavioral tests confirmed the existence of neurological changes in this model, regarding the different pathophysiological stages of demyelination and remyelination. Corpus callosum and cerebellum protein and mRNA levels of GFAP and IL-1 $\beta$  were increased at W5 and decreased at W7. PLP and GLP-1R expression was decreased at W5, but recovered at W7, while unchanged DPP4 levels were observed at those timepoints. **Conclusion:** The behavioral and biochemical profiles analyzed are consistent with the temporal profile of demyelination and remyelination processes, suggesting an involvement of the DPP4-GLP-1 pathway on disease development and recovery. The precise mechanisms still need to be clarified.

- 136 Synergistic Effect Of Photodynamic Therapy In Combination With Chemotherapy: An Option In Osteosarcoma**  
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**Aims:** in vitro and in vivo evaluation of the potential synergistic effect of Photodynamic Therapy (PDT) combined with Doxorubicin (Dox) in Osteosarcoma (OS). **Introduction:** OS arises from primitive mesenchymal cells being characterized by spindle cells and osteoids. Dox remains among the most widely used antineoplastic agents in the treatment of a wide variety of solid tumors such as osteosarcoma. Combined treatments (CT) are an important strategy in oncology. PDT is a non-mutagenic therapeutic modality indicated for several cancers. **Methods:** MNNG-HOS (Human OS cell line) cells were submitted to chemotherapy with Dox during 72 hours, or to PDT based in a photosensitizer (PS; 5,15-bis(2-bromo-3-hydroxyfenil)por-

phyrin) previously synthesized by us or to the CT. To evaluate the types of cell death, the mitochondrial membrane potential (MMP), cell cycle and oxidative stress, flow cytometry studies were performed. Superoxide dismutase (SOD) was evaluated with WST-SOD Kit. For in vivo studies MMNG-HOS cells were inoculated in the skull of Balb/c nu/nu mice and during several days body weight and tumor size were monitored. **Results:** A combination index of 0,541 suggests the synergistic effect. There was a sharper loss of MMP in cells subjected to CT to (4,77±2,34)% (p=0,003) being later apoptosis/necrosis the predominant type of cell death. There was a retention in G2/M phase in cells subjected to CT (29,38±12,16)% (p=0,005). It was observed a significantly higher intracellular production of ROS, namely peroxides, that that significantly increased to 2,19±0,37% (p<0,001) and superoxide anion, increased to 4,09±1,17% (p=0,002). The preliminary in vivo results of the combination PS+DOX group show that the volume of the tumors was the lowest. **Conclusion:** PDT and DOX act synergistically against human OS cells. In vivo studies suggested the combination inhibited tumour growth. These promising results will lead to further studies to verify if this approach might be an alternative in OS treatment.

- 137 **Pro- And Antiinflammatory Cytokines In The Brainstem And Hypothalamus Of Normotensive And Hypertensive Rats.**  
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**Aims:** In the present study, we aimed to determine if concentrations of TNF-α and IL-10 in the brainstem and hypothalamus differ between spontaneously hypertensive (SHR) and normotensive Wistar-Kyoto (WKY) rats. **Introduction:** Increasing evidence suggests a role of neuroinflammation of the brain nuclei involved in cardiovascular regulation in the development of hypertension. Tumour necrosis factor (TNF) is a proinflammatory cytokine implicated in cardiovascular diseases and sympathoexcitation. Interleukin 10 (IL-10) is a major anti-inflammatory cytokine. **Methods:** We conducted our study on adult male SHR (n=12) and WKY (n=12) rats. Systolic blood pressure was measured with tail-cuff method. Then rats were deeply anesthetized with urethane (1.5 g/kg b.w., i.p.) and blood and brains snap frozen in liquid nitrogen were collected. Coronal slices of the brain were obtained with a rat brain matrix and then the hypothalamus (HTS), the rostral ventrolateral medulla (RVLM) and the nucleus of the solitary tract (NTS) were isolated. After homogenization and centrifugation of the tissues, the ELISA method was used to determine concentration of TNF and IL-10 in the serum and in the obtained supernatants of HTH, RVLM and NTS. Student's t-test was used for statistical analysis. **Results:** SHR rats had significantly higher systolic blood pressure than WKY rats (p<0.001). Protein expression of both TNF and IL-10 in RVLM and NTS was significantly higher in SHR rats than in WKY rats (TNF: p=0.001, p=0.002; IL-10: p=0.005, p=0.001; for RVLM and NTS respectively). Concentration of the cytokines TNF and IL-10 in HTH and serum did not differ significantly between SHR and WKY rats. **Conclusion:** Our results show that expression of TNF and IL-10 is increased in the brainstem regions involved in cardiovascular regulation in SHR rats. These results suggest that proinflammatory and antiinflammatory cytokines in the central nervous system may be involved in the pathogenesis of hypertension.

- 138 **Evaluation Of The University Fast Ultrasound Courses By Medical Students**  
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**Aims:** The Cognition of subjective evaluation of the FAST Ultrasound courses quality conducted as part of teaching and academic research groups. **Introduction:** Ultrasound examination in the FAST

protocol allows fast, non-invasively detection fluid in the body cavities without the use of expensive equipment. This is particularly important in the case of traffic accidents, since ultrasound in this situation reduces time of patient's diagnosis and advances the time between event and appropriate therapeutic actions. **Methods:** There was analyzed 1008 questionnaires completed by medical students in training who completed the FAST Ultrasound course as part of training. The study concerned their opinions on the course's quality and its results. **Results:** The level of respondents knowledge before the course amounted to average of 2.1 (scale of 1-10) and after its completion 6.7 (6.6 for women, 7.0 for men). The average increase of knowledge was 4.7 (by 430%). Toughest structure for examination in the study was pericardial sac (56.1%). Barely 38.2% of persons after the course declared the ability to conduct research in a reliable manner. 80% consider the FAST ultrasound examination as equivalent to MRI / CT in diagnosis of fluid presence in the body cavities, and almost 90% of respondents believe that the course was too brief. **Conclusion:** According to students in training FAST ultrasound has high diagnostic potential, and despite of this the quality of education on the subject is not satisfactory, and the courses last for too short. Regardless the relatively high progress of knowledge (4.7 / 430%) and its relatively high level after the completion of the course (6.7) it turns out to be theoretical knowledge. Subjects were having difficulty with practical ultrasound examination (the most in the field of pericardium) and only one third consider to be able to reliably detect fluid in the body cavities.

- 139 **The Combined Effect Of Photodynamic Therapy And Acetylsalicylic Acid Against Colorectal Cancer: An In Vitro And In Vivo Study**  
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**Aims:** To evaluate the effect of photodynamic therapy (PDT) in combination with acetylsalicylic acid (ASA) in human colorectal carcinoma in vitro and in vivo. **Introduction:** Colorectal cancer presents one of the higher incidences and mortalities worldwide. Frequently high expression of cyclooxygenases occurs. PDT is a therapeutic approach effective in various cancers with low side effects. ASA is an inhibitor of cyclooxygenase-1 and 2 which has shown antitumor potential on colon cancer cells. Based on this the combination PDT with ASA might be an approach to increase the efficacy of colorectal cancer treatment. **Methods:** WiDr cells were incubated with increasing photosensitizer (0-200 nM) concentrations and ASA (2,5mM) following irradiation. 24h after treatment metabolic activity and cell viability were evaluated through MTT and SRB assays. Flow cytometry was performed to evaluate the types of cell death, mitochondrial potential and ROS production. Western Blot technique was performed in order to evaluate the expression of the p53 protein in the treated cells. In vivo studies were conducted with WiDr inoculated subcutaneous xenotransplanted Balb/c nu/nu mice with monitoring of body weight and tumor size during 12 days of after treatment. **Results:** The in vitro results following the MTT and SRB assays suggest that

the combination PDT+ASA diminishes both metabolic activity and cell viability in a manner dependent of photosensitizer concentrations in WiDr cells. It was also observed cell death by apoptosis and necrosis and alterations in ROS production. Preliminary results of western blot showed p53 protein expression remained unchanged after treatment. The in vivo studies shown an inhibition in of tumor growth by PDT+ASA combination. **Conclusion:** The combination PDT+ASA has shown some potential in vitro and in vivo against colorectal carcinoma. This approach might be an option to improve the treatment in colorectal cancer patients that deserves further studies.

- 140 **The Prevalence Of Food Hypersensitivity In Preschool Children- Results From A Pilot-Study**  
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"Carol Davila", University of Medicine and Pharmacy

**Aims:** The objectives of our study were to investigate the prevalence and the pattern of self-reported adverse reactions to food among pre-school children living in urban areas. **Introduction:** Food hypersensitivity (FH) can be defined as all the adverse reactions to food products, most likely triggered by an immunological mechanism (Johansson, 2003). Depending on the method of assessment, the prevalence of FH varies greatly worldwide. **Methods:** A cross-sectional study was performed in a group of 164 children, with a mean age of 4.57±0.9 years, of which 50% (82 out of 164) were girls. A number of 250 questionnaires were distributed to the parents and we had a 65.6% response rate. The data has been analyzed with the Epi Info statistical software. **Results:** In the studied group the frequency of FH reported was 15.24% (CI95%=10.11-21.68%). The most common FH reactions reported were associated with cow's milk, eggs, meat and fish (16.0%, 12.0%, 12.0%, and 8.0%, respectively). Other foods reported to be associated with FH clinical manifestations were corn, peanuts, celery, honey and seeds in 4.0% cases for each. The most common clinical aspects reported were angioedema and digestive symptoms (each with 40.0%, CI95% = 21.13-61.33%). The most frequent association of FH was reported to be with atopic dermatitis (16.0%, CI95% = 4.54-36.08%) followed by allergic rhinitis (12.0%, CI95% = 2.55-31.22%). In only 24% of the cases, the children underwent an exclusion diet. In 48% of the cases, children had repeated reactions to food intake. **Conclusion:** The prevalence of self-reported FH in pre-school children was 15.24%. The most common foods associated with FH were cow's milk, eggs and meat. These results need to be confirmed on larger groups.

- 141 **Psychiatric Comorbidity Of Epilepsy: Time-Course Study In An Experimental Model Of Seizure**  
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**Aims:** Aim of this study was to assess time course of anxiety-related behavioral changes in postictal period of generalized seizure, using light/dark and open field test upon seizures induced by lindane. **Introduction:** Epileptic seizure is consisted of preictal, ictal and postictal period. Two major comorbidities: anxiety and depressive disorder, occur mainly in postictal phase. Lindane model is characterized by generalized seizures, enabling the deeper inquiry into different phenomena accompanying epilepsy. **Methods:** Wistar albino male rats were randomly divided to: control (dimethylsulfoxide 0,5 ml/kg, i.p.) and experimental (lindane, 8 mg/kg, i.p.) group (n=8 in each). In order to determine level of anxiety-linked behavioral alterations the time spent in the light compartment of light/dark test was measured. Additionally, number of rearings, time spent in the central area of the open field arena and index of thigmotaxis were analyzed, using the open field test. Seizure intensity was assessed using the descriptive rating scale (0-4 gradus). After appropriate adaptation, basal values of anxiety-related behavior were determined. Hereupon, light/dark test, followed by open field test, took place immediately after evoking seizure (PIP1), one (PIP2), two (PIP3) and approximately 24 hours (PIP4) after. **Results:** Results of this study showed the appearance of anxiety-linked behavior in postictal phase of generalized seizure. This was corroborated by the significant decrease in

time experimental group spent in light compartment of light/dark test, as well the significant elevation of thigmotaxic index, decrease of rearing's number and time spent in central area compared to both controls and basal values, in PIP1, PIP2, PIP3. On the other hand, values in PIP4 were similar to the basal values in all examined parameters. **Conclusion:** Postictal period of lindane-induced model of generalized seizure is accompanied by anxiety-related behavioral changes lasting up to 24h upon the seizure onset. Psychiatric comorbidities could be effectively studied using our lindane model of seizures.

- 142 **Cardiac Impact Of Chronic Stress In A Highly-Susceptible Rat Strain**  
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**Aims:** To characterize the impact of chronic psychological stress and depression in the cardiovascular system of two different rodent strains, Wistar Han (WHan) and Wistar Kyoto (WKyoto). The latter has been described as an animal model of depressive behavior. **Introduction:** Epidemiological studies have shown that chronic stress is implicated not only in the pathophysiology of psychiatric diseases such as depression but also in cardiovascular diseases. The physiological response to psychological stress involving the hypothalamic-pituitary-adrenocortical (HPA) and sympatho-adrenomedullary axes (SAA) is well characterized; however, its link to the cardiovascular system is not well understood. **Methods:** Wistar Han (WHan) (n=14) and Wistar Kyoto (WKyoto) rats (n=14) were randomly subdivided into two additional groups which were submitted to chronic unpredictable stress (CUS), thus resulting in WHan Stress (n=7) and WKyoto stress (n=7). Before and after CUS, the animals were submitted to metabolic evaluation by metabolic cages and blood was collected through cava vein. After CUS and prior to tissue harvest at the time of animal sacrifice, cardiac structure and function was assessed by in vivo echocardiography. The biological fluids and tissue collected were used to perform morphological and molecular studies. **Results:** Despite reduced body, gastrocnemius, perirenal and perigonadal fat weights, WKyoto rats showed cardiac dilated hypertrophy. Functionally, WKyoto rats presented slower heart rate and increased stiffness (increased E/e'), probably associated to higher myocardial fibrosis. When submitted to CUS, WKyoto and WHan showed increased Tei index, denoting worsening of myocardial performance. Both rat strains showed an increase in corticosterone levels as well as oxidative stress parameters. The stress-response was more evident in WKyoto rats, as observed by in situ detection of superoxide anion, as well as NOx2 upregulation and NOx4 downregulation. **Conclusion:** The results suggest that despite the CUS-related increase in both strains in stress levels and impaired cardiac function, WKyoto rats were more prone to increase oxidative stress.

- 143 **Free Triiodothyronine (Ft3) And Free Thyroxine (Ft4) As Potential Prognostic Factors In Sepsis.**  
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**Aims:** The aim of our study was to evaluate thyroid hormones (Ft3, Ft4) predictive value in patients with sepsis. **Introduction:** Sepsis is a life-threatening organ dysfunction caused by a dysregulated host reaction to infection. Despite recent developments in intensive care, sepsis remains one of the leading causes of mortality worldwide. Sepsis causes hypoxia which reduces cells' ability to produce ATP what is also influenced by thyroid hormones. Some studies revealed

connection between mortality rate in sepsis and thyroid hormones levels. **Methods:** We enrolled 38 adult patients admitted to the Intensive Care Unit (ICU) of the Jagiellonian University Medical College with sepsis. Blood samples for FT<sub>3</sub> and FT<sub>4</sub> levels measurements were obtained from septic patients immediately after establishing diagnosis. Primary endpoint was patient's 30 days survival rate. Secondary endpoint was death anytime during ICU stay. Statistical analysis was performed using logistic regression models including FT<sub>3</sub> level and age as predictive factors of survival. **Results:** Patients who died in 30 days had significantly lower levels of FT<sub>3</sub> (1,55 vs. 2,16; p=0,013) and FT<sub>4</sub> (10,03 vs. 12,89; p=0,0034) in comparison to patients who survived. Secondary endpoint confirmed primary finding and revealed that FT<sub>3</sub> (p=0,0046) and FT<sub>4</sub> (p=0,0019) levels were lowered among patients who died anytime at ICU stay. Logistic regression proved that FT<sub>3</sub> level was significant predictor of 30 days survival [FT<sub>3</sub> (OR 1,33; 95%CI 1,03-1,71; p=0,028; AUC 0,76), age statistically insignificant]. Moreover, FT<sub>3</sub> level predicted rate of survival during ICU stay [FT<sub>3</sub> (OR 1,35; 95%CI 1,05-1,75; p=0,02; AUC 0,8), age statistically insignificant]. **Conclusion:** Thyroid hormones levels are significantly higher among patients who survived. Results suggest that FT<sub>3</sub> and FT<sub>4</sub> may be taken into consideration as new prognostic factors in sepsis. In the future their replacement may play some role in sepsis management.

**144 Analysis Of Gender And Age-Specific Kidney Dimensions**  
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**Aims:** The goal of this research was to analyze dimensions of right and left kidney and there locations in connection to sex and age, on CT scans of abdomen. **Introduction:** Knowing the dimensions of the kidney and their location is of great importance for clinical practice. It is known that differences in dimensions of the kidneys depending on sex and age. **Methods:** On CT scans of abdomen of 313 patients aged 20-84 be analyzed length, width, thickness of the kidneys, thickness of parenchyma, distance of upper and lower pole and rotation of the right and left kidney. We examined sex differences and influence of age on mentioned morphological parameters. **Results:** The left kidney was significantly longer than the right one (10,94±1,2 vs. 10,50±1,22 cm), while the right kidney was significantly thicker (5,32±0,87 vs. 5,02±0,73 cm). The angle between frontal plane of the kidney and sagittal plane of left kidney was bigger (52,41±15,11 vs. 43,51±15,38°). Absolute length, width, thickness and volume of the kidney as well as the distance between their upper and lower poles were significantly bigger in men in comparing to women. Length of the kidneys depends mostly on body height while width and thickness were mostly in correlation with body mass and body surface area. Aging is inversely correlated with lengths, width and volume of the kidneys. Thickness of the parenchyma decreased with age. **Conclusion:** Findings have clinical significance in evaluation of the kidney dimensions for certain sex, age and body constitution.

**145 Glucocorticoid-Receptor Inhibits Tgf-β Induced Epithelial To Mesenchymal Transition In Mammary Cells. Does Diabetes-Associated Alostasis Disruption With Impaired Stress Responsiveness Promote Tumor Metastasis?**  
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**Aims:** To address the potential non-genomical modulation of glucocorticoid receptor upon TGF-β signaling pathway involved in epithelial to mesenchymal transition (EMT) and its pathophysiological impacts.

**Introduction:** Pathological EMT is associated with metastatic dissemination, involving the loss of epithelial phenotype and acquisition of mesenchymal characteristics. TGF-β1 signaling has been implicated in the phenomenon, thus correlating cancer progression and metastasis with proinflammatory conditions. Flattened diurnal cortisol rhythmicity is associated with poor prognosis in breast cancer patients, thus predicting a short survival in metastatic ones. Diabetes, besides being a proinflammatory condition, is associated with an increase in allostatic load and impaired cortisol slopes upon diabetics. The potential modulation of TGF-β1 mediated EMT by glucocorticoid receptor was never addressed. **Methods:** MCF10A breast non-neoplastic cell cultures were established and the phenotypical switch induced by exposure to TGF-β1, following a transient model. MCF10A vehicle-treated cells were compared with the conditions of TGF-β1 standalone, TGF-β1+100nM dexamethasone, TGF-β1+100nM dexamethasone+5μM RU486 glucocorticoid receptor antagonist, and 100nM dexamethasone singly. Immunocytochemical analysis was performed to characterize epithelial markers (E-cadherin, β-catenin), mesenchymal markers (vimentin) and F-actin cytoskeletal alterations. Biocomputational studies were performed in order to analyze and quantify the diversity of cell distribution patterns. Internuclear areas, triplet areas, length distortion and angle distortion upon different conditions were estimated. **Results:** TGF-β induces EMT in MCF10A cells, which acquired a fibroblastoid morphology and loss of epithelial markers with the up-regulation of mesenchymal ones. Dexamethasone reversed the ability of TGF-β to induce the phenotypical switch and also the topological alterations observed with the phenomenon. RU486 allowed TGF-β1 to act even when associated with dexamethasone. **Conclusion:** Results support a cross-regulation between glucocorticoid and TGF-β signaling pathways. Lifelong increase in allostatic load (such as in diabetes) and impaired response to stress may act as a contributing factor for pathological EMT and thus tumor metastasis.

**146 Bax And Cleaved Caspase-3 As Apoptotic Markers At Experimental Inducible Dcm-Like Pathology**  
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**Aims:** The aim was to investigate apoptotic processes in experimental model of DCM. **Introduction:** Apoptosis is a pivotal form of cell death at dilated cardiomyopathy (DCM) as final stage of heart failure. However studying cardiomyocytes death in humans is difficult due to lack of experimental material. Thus the establishment of adequate models of heart failure is essential. Previously in our lab the unique experimental inducible model of DCM was developed. **Methods:** Experimental models of DCM was carried out using BALB/c mice [1]. Following groups were studied: control (healthy BALB/c line mice) and experimental one – after 2, 4, 6 months after disease induction. Protein levels of Bax and cleaved caspase-3 were examined by Western blotting. Statistical analysis was performed using Prism 6 software (Graph Pad, USA) using One-Way ANOVA unpaired t test. **Results:** Analysis of mice myocardium cell lysates revealed significant increase in apoptotic markers. There is a major increase in cleaved caspase-3 in myocardium of mice with induced DCM-like pathology by about 60% compared to control. Activation of caspase-3 could be mediated by increase expression of Bax. We found that level of Bax increases by 120% compared to control. Control cells also contain small amounts of cleaved caspase-3 and Bax. This can be explained by the fact that apoptotic processes present in certain physiological level in each cell population. **Conclusion:** The data we received suggests increasing level of cardiomyocytes apoptosis in developed model of heart failure. This data is similar to those revealed for human samples. Noting our previous histological results and results obtained in this study we suggest that developed model of heart failure is safe, reliable and convenient model that can be used for investigation of signaling pathways at different forms of cardiomyocytes death, studying and analyzing various approaches for treatment of heart failure.

**147 Blood Oxidative Stress Biomarkers And Genetic Susceptibility In Cardiovascular Risk Associated To Psoriasis**

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**Aims:** To study blood oxidative stress biomarkers and its association with MTHFR and COMT polymorphisms in psoriasis and controls (with and without hypertension). **Introduction:** Hyperhomocysteinaemia is a recognized cardiovascular risk biomarker and psoriatic patients share this characteristic. MTHFR and COMT polymorphisms can modulate the levels of homocysteine. The skin may be a regulator of systemic blood pressure, as well as, erythrocytes enzymes. **Methods:** In a sample of 59 psoriatic patients and 423 controls, being in latter 75 (56.0%) hypertensive (HTA), were determined MTHFR-C677T and COMT-G158A polymorphisms by PCR-RFLP. TMR, MHBR and ACP activities in erythrocytes were determined by spectrophotometric methods. Statistical analyses were qui-square, binary logistic regression and student t-test (or Mann-Whitney test). The results were significant for P<0.05. **Results:** We found that there were significant differences in genders between psoriasis and controls, being more men in psoriasis (71.2%) and women (W) in controls (60.9%) (P<0.0001), even when considered HTA-subgroup (W=63.2%, P<0.0001). There were no significant differences in age between psoriasis and controls (51.98±13.19 vs.53.61±14.09 years old, P=0.459), however psoriatic patients were younger in relation to HTA (51.98±13.19 vs.61.30±9.06 years old, P<0.0001). For blood oxidative stress biomarkers, psoriatic patients presented significantly lower levels of TMR, MHBR and ACP activities relatively to controls (P<0.0001), even when adjusted for age (P<0.0001). There were no significant differences in MTHFR and COMT genotypes distribution between psoriasis and controls or psoriasis and HTA (P>0.05). In psoriasis, considering genotype-phenotype interaction, we found that subjects with MTHFR-TT genotype (vs. CT+CC genotypes) had significantly higher values of MHBR activity (P=0.010) and subjects with COMT-GG genotype (vs. GA+AA genotypes) had significantly higher values of ACP activity (P=0.025). **Conclusion:** Blood oxidative stress biomarkers (TMR, MHBR and ACP activities) were associated to psoriasis, being its interaction with MTHFR-TT and COMT-GG genotypes a possible indicator of metabolic and cardiovascular risk in psoriasis.

**148 Measuring Abdominal Aortic Aneurysm Calcification – Can We Make It Easier?**

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**Aims:** To compare the performance of 3 methods of measuring AAC with a goldstandard method based on the Agatston score. **Introduction:** Computed tomography (CT) is frequently used to measure abdominal aortic calcification (AAC) in patients with Abdominal Aortic Aneurysms (AAA). However, a method that is fast, valid and non-dependent on workstations is missing. **Methods:** This is a cross-sectional study of 196 consecutive AAA patients admitted for elective AAA repair. Of those, 42 were excluded because a 5mm-slice preoperative CT was not available in the hospital records. Aneurysm volume, maximum aortic diameter and the severity of vascular calcification assessed by the AAC-8, AAC-24, Aortic Calcification Index (ACI) and Agatston scores (AS) were undertaken. Spearman's correlation

coefficient was used to compare these methods. **Results:** Among the 154 patients included, 146 (95%) were male and the mean age was 71 (±8) years. The median and interquartile range (IQR) of maximum aortic diameter and aneurysm volume were, respectively, 5.85 (5.38-7.00) cm and 167 (126-236) cm<sup>3</sup>. AS, AAC-8, AAC-24 and ACI were assessed in 103 (67%) patients and their median and IQR were, respectively, 2651 (1158-4561), 3 (2-4), 7 (5.5-9.5), 35 (21.5-51). The ACI had the highest correlation with the AS (ρ= 0.884, p <0.001), followed by the AAC-8 (ρ= 0.785, p<0.001) and the AAC-24 (ρ= 0.738, p <0.001). In 51 patients AS could not be performed because only a contrast CT was available. Secondary analysis showed that this group was not different from the rest of the study population in terms of age, maximum aortic diameter, aneurysm volume, AAC-8 or AAC-24. **Conclusion:** These findings suggest that ACI may be looked into as an alternative to the AS when the latter is unavailable, pending additional confirmation and characterization of this correlation.

**149 Psychopathological Consequences Of ASD.**

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Student scientific circle by Studio of Social Cardiology

**Aims:** The main target of our study was to estimate psychological aspect of atrial septal defect and variations of quality of life patients with that cardiac anomaly. **Introduction:** Atrial septal defect (ASD) is the most frequent type of congenital heart defect. Depending on the size of the defect this can result in a spectrum of disease from no significant cardiac murmur to right-sided volume overload. In pursuance of previous studies this type of cardiac defect has meaningful impact on patients' quality of life. **Methods:** Base of our study is the 90-symptom checklist (90-SCL) questionnaire. That test contains 90 questions focused on main psychological signs and severity of that syndromes. Results of the test was parallel with randomly chosen population. Our experiment population consist of 48 adult patients with ASD type 2 and a mean age of 46.6 +/- 14.8. The statistical analysis was performed using Statistica 10 software (StatSoft Inc.). **Results:** The mean score in the study population was considerably higher in 4 out of 9 quality of life rates: somatizations (1,2 vs 0,5), obsessions (1,0 vs 0,6), depression (0,8 vs 0,5) and anxiety (0,09 vs 0,6). In the study population females had higher scores than males in 4 quality of life indicators: somatizations (1,3 vs 0,7), obsession (1,25 vs 0,6), depression (1,1 vs 0,5 and phobic anxiety (0,4 vs 0,1). Correlativity between age and quality of life was found for females in the study group in 5 rates: obsessions (r=0,53), interpersonal hypersensitivity (r=0,62 p<0,05), depression (r=0,63), anxiety (r=0,51) and psychoticism (r=0,64). There was no meaningful correlativity in the group of males. **Conclusion:** Our study confirmed the clinical observations of patients with ASD. Patients with diagnosed atrial septal defect have significantly decreased life quality. What is more female population has much more reduced psychological rates than male one and its rates decreases with age.

**150 Recombinant Expression Of Steap1 In Escherichia Coli: Screening Of Bioprocess Parameters, Compartmentalization And Chaperones Stabilization**

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**Aims:** Produce the recombinant human STEAP1 protein in E.coli cells and perform its isolation by IMAC, allowing the recovery of pure protein fractions in order to develop structural interaction assays and design specific molecules to inhibit the action of STEAP1 in specific cancer cells lines. **Introduction:** The six transmembrane epithelial antigen of the prostate 1 (STEAP1) is member of STEAP protein family. STEAP1 is overexpressed in several human cancers, with a higher expression profile for prostate cancer (Pca). Although the role of STEAP1 in human cells is not yet entirely understood, several studies have demonstrated that STEAP1 is involved in intercellular communication, allowing tumour growth 3. Studies demonstrated that blocking STEAP1 leads to a reduction of cell proliferation. Considering the localization of STEAP1 on cell membrane, and its overexpression in

cancer cells, STEAP1 arises as a relevant protein in PCa and a promising therapeutic target. **Methods:** pET 101 plasmid was cloned with STEAP1 gene and E.coli BL21 (DE3) cells were transformed to perform fermentations in a batch mode. Globally, it was performed several experiments in order to test and optimize the medium composition, the inducer concentration, the time of induction and the use of chemical chaperones (DMSO, sorbitol and arginine). All trials were analyzed by Western Blot, after E.coli BL21 (DE3) cells have been harvested and lysed by a combined lysis method using glass beads and freeze-thaw cycles. **Results:** SOB medium, with IPTG at 1.25 mM as inducer after 5h of fermentation and using DMSO at 1.5% (v/v) combined with sorbitol 125-250 mM could be the ideal conditions for the biosynthesis of recombinant STEAP1 protein. Also, the results demonstrated that applying lactose as inducer could influence the compartmentalization of the target membrane protein and increase its solubility. **Conclusion:** DMSO and sorbitol allow the production of STEAP1. Lactose could increase protein solubility

- 151 **The Significance Of Protocol Renal Allograft Biopsies – Single-Centre Experience**  
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Medical University of Warsaw, Department of Transplantation Medicine, Nephrology and Internal Medicine

**Aims:** To compare results of a histopathological examinations of protocol renal allograft biopsies, modifications of the immunosuppressive regimen after the procedure and follow-up data. **Introduction:** Protocol biopsies after kidney transplantation (KTx) are considered useful in detecting early histopathological changes which may occur due to rejection and other pathologies and outrun biochemical and clinical symptoms of renal function deterioration, what allows to execute early therapeutical procedure and contributes to improvement of the allograft prognosis. **Methods:** 22 renal transplant recipients, 10 women and 12 men (medium age – 42.27 years) underwent protocol biopsies (N=41) in 3 (N=3), 6 (N=8), 12 (N=14), 24 (N=5), 36 (N=3) and 46 months (N=2) after KTx. The collected data included the result of a histopathological examination of the allograft tissue sample; the immunosuppressive regimen and serum concentration of creatinine at specific time points, other information e.g. number of HLA mismatches, length of dialysotherapy before KTx. The patients were divided in two groups according to the result of the protocol biopsy: 1) marginal changes or acute rejection (all types) 2) without any signs of rejection. P value <.05 was considered significant. **Results:** The first group of patients (N=10) were older than the second (N=12): 45 vs. 40 years old (non-significant); their dialysotherapy before KTx was significantly longer 52.6 vs. 28.9 months (p<0.05); the number of HLA mismatches higher: A 1.5 vs. 1.17 (p<0.05); B 1.25 vs. 1.42 (non-significant); DR 1.12 vs. 0.83 (p<0.05). The four-year follow-up revealed that serum concentration of creatinine and the tacrolimus concentration were higher: 1.38 1.25 (p=0.78) and 6.75 vs. 4.93 (p=0.67), respectively. No difference in administered doses of steroids and mycophenolans was observed. **Conclusion:** Acute rejection episodes and chronic allograft nephropathy may happen without causing a measurable decrease in renal function. The risk of the rejection may be associated with the length of dialysotherapy before KTx.

- 152 **Cervical Spine Instability Amongst Children Practicing Judo**  
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**Aims:** Evidence of a link between the training judo and cervical spine instability amongst children between the age of 7 and 12. **Introduction:** Judo is a martial art focused on the use of grasping. On examination which qualifies to practicing judo, it is mandatory to perform an X-ray scan of the cervical spine segment which is supposed to exclude contraindications to practicing this sport. **Methods:** 22 children between the age of 7 and 12, training between 2 and 5 times p.w., underwent examination. All subjects had X-ray scans of the cervical spine, using the A-P and side view. When cervical spine instability was diagnosed, additional functional examination was ordered. In case of confirmed instability, the subject was consulted with a neurosurgeon, an orthopedist and a physician specializing in sports

medicine. **Results:** In this group, there were 1 case with no cervical spine lesions found, 9 cases with lesions which did not present a contraindication to practice sport and 12 cases with instability. In case of the competitors with instability found in functional X-ray, performed examination and analysis of functional radiograms allowed to issue statement of fitness for starting or continuing trainings, with recommendation of having another X-ray scan in 2 yrs. In 2 cases, on radiological checkups after 2 yrs, instability lesions were found which were not visible in earlier examinations. **Conclusion:** In case of finding instability in stationary X-rays, it is possible to allow practicing judo in case of children below 12, on condition of undergoing comprehensive examination and confirming instability resulting only from the laxity of the capsular and ligamentous system. It is necessary to introduce general physical training to strengthen the muscles in the cervical segment, before starting training

- 153 **Targeting Retinoblastoma With Cold Atmospheric Plasma**  
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**Aims:** The aim of this work was to evaluate the effect, selectivity and mechanisms of action of cold atmospheric plasma (CAP) in human retinoblastoma. **Introduction:** Retinoblastoma is a malignant tumor of the retina highly dependent on its vascular supply. An alternative to hazardous current treatments under study is applying plasma, which is an ionized gas. **Methods:** An electronic device was designed to generate CAP, in open air, 2mm above multiwell plates where 799 cell cultures were plated. In order to evaluate the cytotoxicity of the plasma flair, Alamar Blue, MTT and SRB assay were performed. Moreover, flow cytometry was used to study the types of cell death and the cell cycle. Concerning selectivity, human fibroblasts HFF1 were treated similarly and Alamar Blue was performed. Furthermore, an aortic ring assay was carried out to test potential anti-angiogenic effects. For oxidative stress evaluation, molecular probes, DCFH2-DA and DHE, and dyes, Mercury Orange and JC-1, were used. **Results:** After CAP treatment, the metabolic activity of retinoblastoma cells decreased and after only 60s of CAP exposure, the observed metabolic activity was (37.5±19.7)% (p<0.001) and (57.2±21.2)% (p=0.047) as evaluated by Alamar Blue and MTT assay, respectively, and a protein content of (56.3±19.6)% (p=0.048) was obtained. Preliminary results reveal that early and mainly late apoptosis are greatly increased (63.8±31.2)% and mitochondrial membrane potential is reduced as the monomers-aggregates ratio was (183.7±28.1)% for the longest period tested. The concentration of intracellular peroxide increased (170.4±43.3)% and GSH reduced by more than 30%. Maximal anti-angiogenic effects were observed at 60s of CAP exposure. Regarding the fibroblasts, after 60s of CAP exposure the metabolic activity was still (74.5±13.1)% (p=0.058) and significantly higher (p<0.001). **Conclusion:** These results suggest that CAP might be a selective therapy for retinoblastoma.

- 154 **Relationship Between Heart Rate And Severity Of Obstructive Sleep Apnea In Patients With Metabolic Syndrome**  
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## Abstracts

## Abstracts

- 2 Clinical Hospital Centre, Dr Dragisa Misovic-Dedinje" Belgrade, Serbia

**Aims:** The purpose of this study was to examine the relationship between nocturnal heart rate and severity of obstructive sleep apnea in patients with metabolic syndrome. **Introduction:** Heart rate (HR) provides information about pathophysiology of regulatory mechanisms in many cardiovascular diseases and is mainly under autonomic nervous system influence. Both obstructive sleep apnea (OSA) and metabolic syndrome (MetSyn) are independent risk factors for cardiovascular diseases. Positive correlation between HR and severity of OSA has been subject to many previous investigations, but it is not well known whether MetSyn has any modifying effect on HR in OSA. **Methods:** The study included a total of 90 patients (47.8% male, mean age 58.5 years) with MetSyn and comorbid OSA who underwent overnight polysomnography with monitoring of HR. Patients were assigned into three OSA severity groups according to apnea-hypopnea index (AHI): mild OSA (5 < AHI < 15/h, n = 22), moderate OSA (15 < AHI < 30/h, n = 34) and severe OSA (AHI > 30/h, n = 34). Mean, minimal and maximal HRs were recorded and analysed. **Results:** Mean nocturnal HR in all patients was 63.2 ± 9 bpm, minimal HR was 41 ± 6.3 bpm and maximal HR was 102.5 ± 16 bpm. No difference in HRs was found between mild, moderate and severe OSA groups of patients. However, when mild OSA group was compared to moderate-severe OSA group, only maximal HR was significantly higher in moderate-severe OSA group (96.6 ± 12 bpm in mild OSA vs. 105 ± 14 bpm in moderate-severe OSA, p = 0.028), whereas mean HR (p = 0.947) and minimal HR (p = 0.125) did not differ between mild and moderate-severe OSA groups. **Conclusion:** There is no relevant correlation between nocturnal HRs and severity of OSA in our group of patients. This finding might suggest that in patients with both OSA and MetSyn nocturnal HRs are not such a useful marker of OSA severity. Further investigations are necessary in order to fully understand complex relationship between obstructive sleep apnea and metabolic syndrome.

- 155 **Health Benefits Of Sprouted Grains In Degenerative Diseases Based On Their Total Phenolic Content And Antioxidant Activity**  
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PhD, assistant

**Aims:** To determine the total phenolic content of unsprouted and sprouted grains of wheat and sunflower and to analyze comparatively the potential pharmacotherapeutic effect of the extracts. **Introduction:** Degenerative diseases are an indisputable cause of death specific for people of working age from low-income countries like Republic of Moldova. Annually cardiovascular diseases constitute 25,80 % from total numbers of deaths, cancer 18,20 % and lung diseases 6,50 %. Polyphenols of cereals prove anti-inflammatory, antiallergic, antithrombotic, antibacterial, antiviral, and vasodilatory actions. Sprouting neutralizes enzyme inhibitors, inactivates aflatoxin and increases the amount of antioxidants up to 515 times. **Methods:** The caryopsis of wheat and achenes of sunflower were harvested in the village Rădeni, district Strășeni in 2015. Total phenolic content was determined spectrophotometrically, using Folin-Ciocalteu reagent and Galic Acid as standard. For establishing antioxidant capacity were used: DPPH free radical scavenging method and FRAP - including Trolox as a standard. **Results:** For unsprouted wheat total phenolic content constitutes 17, 15 mg GAE/g dry mass, but for the sprouted it is equal to 22, 05 mg GAE/g dry mass. For unsprouted sunflower the value is 52, 96 mg GAE/g dry mass, but for the sprouted sample is 86, 14 mg GAE/g dry mass. The experimental results show clearly the increase of total phenolic content owing to germination process. **Conclusion:** The germination process majors the content of polyphenols by 28,52% for wheat and by 62,64% for sunflower. Republic of Moldova – an agrarian country can benefit tremendously from their potential in the treatment of diseases caused by oxidative stress.

- 156 **Depressive Disorders Among Students Of Medical Faculty University Of Novi Sad**  
Dukic G, Jovicic N, Dadasovic J  
Psychiatry

**Aims:** The Aim of our study was to investigate the prevalence of depressive disorders among students in all study programmes of Medical Faculty Novi Sad. **Introduction:** Depressive disorders are very common mental disorders with the frequency of about 5%. Many studies support the fact that medical students are susceptible to depressive disorders due to exposure to higher level of stress compared to the general population, also this studies showed that the current system of medical education can have a negative impact on the mental health of students, stronger than personal problems have. **Methods:** This is a descriptive study that included 216 students. The online questionnaire was containing 28 questions - 9 questions from PHQ-9, which was used for evaluation of depressive disorders and 19 questions about sociodemographic factors, substance abuse and question about previous diagnosis of depressive disorder. For statistical analysis of data we used hi square test, t test and Pearson's correlation test. **Results:** 31 (14.35%) students were positive for depression with a PHQ-9 score of . 10. 105 students (48.6%) had a PHQ-9 score greater than 4, out of which 74 students was in a score rang from 5 to 9 - subsyndromal depressive disorder, 20 students from 10 to 14 - a mild depressive disorder, 9 students were in a score range from 15 to 19 which corresponds to moderately severe depression and 2 students had PHQ-9 score greater than 20, which corresponds to severe depression. There is statistically significantly higher prevalence of depression among female students (p = 0.02). There was no statistically significant difference in the presence of depressive disorders among students with different financial status and completeness of the family. **Conclusion:** Students of the Faculty of Medicine in Novi Sad have a higher prevalence of depressive disorders comparing to the general population. Depression is more common among female students.

- 157 **Are Amyloid-Beta Mediated Degenerative Changes Dependent Upon Tau In A Novel Mouse Model Of Alzheimer's Disease?**  
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**Aims:** The aim of this work was to characterise the pathological features of a new mouse model of Alzheimer's disease (AD). Previous behavioural testing using an established novel object recognition task detected memory deficits in tau-expressing mice at nine months. This work aimed to investigate the pathology of the mice at nine months, to identify any alterations which may underlie their memory deficits. **Introduction:** AD is a devastating neurodegenerative condition affecting 46 million people worldwide. Two pathological proteins, amyloid-beta (Aβ) and tau, are heavily implicated in AD progression, however their exact roles remain elusive. The mice express human amyloid mutations (hAPP/PS1) alongside tetracycline-regulatable wildtype human tau (hTau), but lack endogenous mouse tau known to worsen the phenotypes of human APP and tau expressing mice. Four genotypes were studied: control, hTau, hAPP/PS1, and hAPP/PS1+hTau, allowing the precise interactions between the two proteins to be investigated. Critically, the bulk of AD research thus far has focused on the pathogenic roles of amyloid, so this new model will provide invaluable insight into the relatively ambiguous functions of tau. **Methods:** Cerebral volumes were measured by stereology. Aβ plaque burden, oligomeric Aβ (oAβ) halo area/diameter, and tau phosphorylation were assessed by immunohistochemistry. Synaptic Aβ42 levels were quantified by an Aβ42-specific ELISA. **Results:** No significant differences were noted in cerebral volumes, oAβ halo area/diameter, or synaptic Aβ42 levels between all four genotypes (p>0.05). Hyperphosphorylated tau surrounding Aβ plaques was evident in hAPP/PS1+hTau mice, with these mice demonstrating significantly fewer cortical (p=0.0184) and hippocampal (p=0.0335) plaques than hAPP/PS1 mice. **Conclusion:** The previously observed memory deficits are unlikely to arise due to cerebral volume, oAβ halo area/diameter, or synaptic Aβ42 alterations. However, plaque burdens changes and tau hyperphosphorylation may underpin deficits. The results of this work highlight a central role of tau protein, thus further investigations into tau may reveal much-needed therapeutic targets.



**158 Synaptic Tau Protein: An Essential Target In Ketamine's Post-Anesthesia Cognitive Deficits?**

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**Aims:** This study aims to monitor whether repeated use of anesthetics impact neuronal structure related to cognitive deficits and if Tau and its phosphorylation is involved in this process. **Introduction:** General anesthetics (GA) are widely used due to their clinical applications but repeated GA exposure has been associated with cognitive deficits and learning disabilities in the postoperative period. While the underlying mechanisms remain unknown, accumulating evidence suggests that these anesthetics' effects could be linked to neuronal and synaptic malfunction as some anesthetics are shown to induce hyperphosphorylation of the microtubule-associated Tau protein, which has been related to neuronal and synaptic atrophy. **Methods:** Mice lacking Tau protein (Tau-KO) and their wildtype (WT) littermates were subjected to a two-month set of 6 injections of saline, or Ketamine, or a mixture of ketamine and dexmedetomidine. Animals' behavior was monitored using a battery of tests for cognitive performance and anxious behavior. After sacrifice, neuronal structure was evaluated using Golgi-Cox's staining and 3D reconstruction. **Results:** We found that repeated exposure to Ketamine induced deficits on short-term memory only in WT while both genotypes exhibited reduced anxiety levels after Ketamine administration. In addition, Ketamine decreased dendritic length in CA1 hippocampal neurons of WT animals whereas Dentate Gyrus (DG) granular cells exhibited hypertrophy. Interestingly, no effect of Ketamine was found on Tau-KO neurons of both hippocampal areas. In contrast, repeated exposure to Mix anesthetics exhibited an atrophy on CA1, but not DG, neurons of both genotypes. **Conclusion:** Our findings suggest that Tau protein is essential for the neuroplastic changes of hippocampal neurons related to memory deficits caused by repeated exposure to Ketamine. These results point towards a strong role for Tau protein and NMDA receptor in the detrimental effects of repeated exposure to ketamine. Further molecular analysis is necessary towards the clarification of the cellular signaling triggered by ketamine and mix anesthetics.

**159 Effects Of Hyperbaric Oxygenation On Histological Healing Of Surgically Repaired Rotator Cuff Tears In Rabbits**

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 2 *Experimental Biology Department - Faculty of Medicine - University of Porto, Portugal*  
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 4 *Animal Facility - Medical Investigation Center - Faculty of Medicine - University of Porto, Portugal*  
 5 *Faculty of Health Sciences - University Fernando Pessoa, Porto, Portugal*

**Aims:** Evaluate the effect of hyperbaric oxygenation on healing of surgically repaired rotator cuff tears. **Introduction:** There is a growing need to develop new techniques to stimulate the rotator cuff tendon healing process and to improve the new enthesis formation after surgical repair. It is known that poor vascularization and hypoxia in this region are possibly involved in reparation failure, among other factors. Previous studies on hyperbaric oxygenation (HBO) therapy have shown that it enhances angiogenesis in various tissues, counteracts hypoxia, benefits tendon graft and bone interface incorporation, as well as, improves and speeds healing. We hypothesized that HBO therapy as an adjuvant to surgical repair of rotator cuff tears would improve histological healing criteria. **Methods:** A full-thickness transection followed by tendon to bone reattachment was performed on six rabbits' subscapularis tendons. Three rabbits were assigned to

HBO therapy and three had no further intervention. At fifteen days post-surgery, both groups were compared macroscopically and histologically. **Results:** Macroscopically, tendons of the HBO treated group were thicker and more cohesively attached to bone. Histologically, HBO treated rabbits appeared to display a better organized collagen matrix and a greater proliferation of small vessels and adipocytes in the surrounding tissue. No significant conclusions could be taken on the enthesis development. **Conclusion:** Although no assumptions can be extrapolated given the small size of the sample population, our pilot study points to a putative benefit of HBO therapy in surgically repaired rotator cuff tears' healing criteria. Further studies are needed.

**160 How To Prevent Reoperations After Cranial Neurosurgical Procedures**

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**Aims:** The aim of our study was to establish frequency and find predictors of reoperation due to complications after cranial neurosurgical procedures. **Introduction:** Complications after neurosurgical procedures which lead to reoperation are associated with poor treatment outcome and economic costs. The knowledge of risk factors for those complications might allow to implement specific preventive measures. **Methods:** We retrospectively analysed 484 patients hospitalized between January 2015 and November 2015 who underwent a cranial neurosurgical procedure. We obtained medical history, results of blood tests preceding operation and details about the operation from their medical records. We used univariate and multivariate logistic regression analysis to determine the possible predictors of reoperation. **Results:** A total of 29 patients (5.99%) underwent reoperation due to complications. Those patients had higher Mean Corpuscular Hemoglobin Concentration (MCHC) (34.37 ± 1.14 g/dl vs. 33.72 ± 1.04 g/dl; p=0.036), more often had been operated due to brain tumour (10.34% vs. 3.3%; p=0.029) and underwent frontal craniotomy (28% vs. 13.33%; p=0.042). Patients operated due to head trauma were less likely to be reoperated due to complications (10.34% vs. 31.43%; p=0.016). On multivariate logistic regression analysis frontal craniotomy remained independently associated with higher risk of reoperation (OR: 0.341, CI95% 0.133 - 0.871, p=0.024). Among patients who underwent frontal craniotomy the most common complication was liquorrhea (42.86%) then brain oedema (28.57%), nasal liquorrhea (14.28%) and haemorrhage (14.28%). **Conclusion:** Brain tumour surgeries, higher MCHC and frontal craniotomy are associated with higher risk of reoperation due to complications. Patients with head trauma are less likely to be reoperated. Frontal craniotomy is independently associated with higher risk of reoperation after cranial neurosurgical procedures.

**161 Can Polish Medical Students Examine The Urogenital Area?**

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**Aims:** Our aim was to analyse the experience of Polish medical students in urogenital examination. **Introduction:** Doctors of various specialties may encounter the necessity to examine the urogenital area. During studies, the doctors-to-be should gain theoretical knowledge as well as practical skills in this field. However, there is an ongoing discussion, whether enough emphasis is put on developing practical skills among Polish medical students. **Methods:** In the study we used a self-prepared internet questionnaire, filled by 1,073 students (69,15% females) of all years from 12 Polish medical schools. 28 questions concerned: demographics, affiliation to students' scientific groups (SSG), completed clinical courses in gynaecology, urology, number of performed examinations and approach to the procedure. **Results:** 54.05% of students have never examined genitals, 45.11% have not even been demonstrated how to perform the checkup. Only 9,69% had the opportunity to examine both males and females and 9,23% practised only on phantoms. The number of students, who have never examined the urogenital area, significantly

decreased after completion of urology or gynaecology course (from 50,33% to 3,73% vs. from 51,07% to 2,98%, respectively, p=0,0000 for both). The analysis revealed a relationship between the affiliation to SSG and urogenital examination skills (p=0,0000). Among 6th-year-students a group of 16,5% remained, who have not had a chance to practise urogenital examination on patients. 25,72% of surveyed claim they avoid performing urogenital examination, while 35,23% volunteer. **Conclusion:** A considerable group of medical students has no experience in urogenital examination. Membership of SSG as well as urology or gynaecology courses give students a chance to develop their practical skills. Although students are aware of the fact, that urogenital examination is an important skill regardless of the chosen specialty, still quarter of them avoid engaging in this procedure.

**162 Effect Of Dietary Unsaturated Fatty Acids On Human Colon Cancer Cells Proliferation And Migration Ability**

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**Aims:** Evaluate the proliferative and migration effects of elaidic acid and oleic acid in human colorectal cancer cells. **Introduction:** Cancer is a leading cause of mortality. Studies have shown that modulation of diet, specifically dietary fat, may be an effective strategy in reducing risk of some types of cancers [1, 2]. The consumption of olive oil, rich in oleic acid (OA), may have a protective role, whereas a recent study revealed elaidic acid (EA), the OA trans isomer, and the most representative in industrialized foods, as a novel biomarker of early colorectal cancer risk [3]. Previous studies, including from our group [4], have described several actions of both OA and EA in various cellular models, despite their effects on cancer cells biology remain understudied. **Methods:** Human colorectal adenocarcinoma HT-29 cells were exposed to EA and OA during 24 hours at a concentration of 50 µM and 100 µM. Cell viability was assessed using lactate dehydrogenase (LDH) release assay and migration by a wound healing test. Statistical analysis was performed using ANOVA test followed by Bonferroni's test. Results are shown as mean ± SEM. **Results:** Cellular exposure to EA and OA at 100 µM, respectively decreased (38% ± 10%; n=8) and increased (209% ± 10%; n=9) viability in comparison with controls, though at 50 µM had no effect. Migration assays have shown that there were no differences with OA at 50 µM (135% ± 20%; n=11) and 100 µM (127% ± 17%; n=9) and with EA at 50 µM (115% ± 14%; n=12) and 100 µM (89% ± 9%; n=10), comparing to controls. **Conclusion:** EA and OA differently affected colon cancer cells viability and had no effect on migration. Mechanisms underlying the effect of OA upon cancer cellular viability, point to a proliferation increase, as those involved in EA cytotoxic effect, will be further explored in future experiments.

**163 QTC Dispersion Predicts Mortality In Pulmonary Hypertension.**

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**Aims:** The aim of the study was to evaluate QTC interval and QTC dispersion in patients with pulmonary arterial hypertension (PAH) and chronic thromboembolic pulmonary hypertension (CTEPH) and to assess the potential relationship between QTC dispersion and mortality. **Introduction:** Pulmonary hypertension (PH) is a rare disease with a poor survival. Heart rate-corrected QT interval (QTC) is a prognosis factor in survival in PAH. Little is known whether QTC dispersion (QTCd) is also associated with a worse prognosis in PH. **Methods:** Patients diagnosed with PAH or inoperable CTEPH in a single pulmonary hypertension center were eligible to the analysis. Clinical data was obtained from a cohort registry of patients treated in the center between 2009 and 2016. Each patient had standard 12-lead ECG performed and analysed. Survival of the entire cohort of patients was prospectively determined, with respect to clinical data, six-minute walk test (6MWT), NT-proBNP level, WHO functional class, age, sex and

hemodynamics. **Results:** We included 170 patients diagnosed with PAH (n=156, 91,8%) and CTEPH (n=14, 8,2%). There were 23 (13,5%), 106 (62,4%) and 23 (13,5%) patients in WHO functional class II, III and IV, respectively. During observation time 27 (15,9%) patients died. The mean NT-proBNP level was elevated at 2186.4 ± 4258.9 pg/mL. The mean duration of QTC interval was 437.8 ± 41.4ms and QTCd duration was 66.2 ± 34.8ms. QTC interval was prolonged in 87 (51,2%) patients. The mean 6MWT distance was 318.0 ± 117.2m. In multivariate analysis, higher QTC dispersion duration and higher mean NT-proBNP level were associated with increased risk of death (HR 1.0138; 95% CI 1.0052-1.0225; p<0.005; HR 1.0001; 95% CI 1.0000-1.0001; p<0.005; respectively). Lower 6MWT distance was also associated with increased risk of death (HR 0.9954; 95% CI 0.9910-0.9999; p<0.05). **Conclusion:** QTC dispersion, NT-proBNP level and 6 MWT distance in patients with PH are independent predictors of mortality.

**164 Comparison Of Apache (Acute Physiology And Chronic Health Evaluation) Iv Scale And Thyroid Hormones In Risk Assessment In Patients With Sepsis.**

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**Aims:** The aim of our study was to evaluate the predictive value of thyroid hormones: free triiodothyronine (ft3) and free thyroxine (ft4) in sepsis. We wanted to assess if ft3 and ft4 could be a part of predictive scale in sepsis on Intensive Care Unit (ICU). **Introduction:** Sepsis is a systemic inflammatory response to infection. It is a life-threatening clinical entity, in which function of multiple organs can be disturbed. Thyroid hormones have a major impact on multiple processes in our body. APACHE IV scale is one of the most common predictive risk of death scores used at ICU. **Methods:** 34 patients treated due to sepsis at ICU of the Jagiellonian University Medical College, Krakow were enrolled in the study. Levels of ft3 and ft4 on admission were measured and the risk of death was stratified using APACHE IV score. We assessed incidence of one of the following endpoints: death or survival at 30 days after diagnosed sepsis and at the end of hospitalization. **Results:** We divided patients into 3 groups depending on mortality rate predicted with APACHE IV scale (I: 0-75%, II: 75-85%, III: 85-100%), we observed differences between them. The ft3 average level was getting smaller respectively for I (2,29±1,3; n=13), II (1,88±0,55; n=11) and III (1,48±0,29; n=10) group. The differences in ft4 average level were statistically insignificant. **Conclusion:** Results suggest that thyroid hormones may become new prognostic factors in sepsis in the future. Our findings indicate that assessment of these hormones levels in conjunction with APACHE IV scale could contribute to increase accuracy of risk of death patients with sepsis.

**165 Predictors And Clinical Consequences Of Traumatic Subarachnoid Haemorrhage**

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**Aims:** The aim of our study was to determine the risk factors and analyse clinical consequences of tSAH. **Introduction:** It had been proved that presence of traumatic subarachnoid haemorrhage (tSAH) can be an independent risk factor of poor outcome after Traumatic Brain Injury (TBI). However the predictors of those condition are still poorly defined. **Methods:** We retrospectively analysed 242 patients with CT-confirmed TBI, hospitalized between January 2013 and January 2015. On admission patients were assessed using Glasgow Coma Scale (GCS). Presence of tSAH was evaluated based on the CT scans. We obtained patients' medical history and details about the operation from their medical records. **Results:** A total of 32 patients (13,22%) had tSAH. Those patients significantly more often had history of hypertension (31,25% vs. 16,93%; p=0,049), heart attack (3,23% vs. 0%; p=0,014) and alcohol abuse (25,81% vs. 12,25%; p=0,37). They also more often suffered from polytrauma (21,58% vs.

9.45%;  $p=0.033$ ), especially thoracic (19.35% vs. 5.71%;  $p<0.01$ ) and pelvic trauma (6.45% vs. 0.48%;  $p<0.01$ ), and were more likely to have epidural hematoma (31.25% vs. 16.93%;  $p=0.049$ ) or Diffused Axonal Injury (9.68% vs. 1.18%;  $p<0.01$ ). Lesions located in frontal (56.25% vs. 14.17%;  $p<0.01$ ) and parietal lobe (34.38% vs. 8.66%;  $p<0.01$ ) occurred more frequently at patients with tSAH. Also those patients more often had bone flap removed during surgery (65.63% vs. 35.43%;  $p<0.01$ ). Among patients admitted to Intensive Care Unit (ICU), those with tSAH were more likely to stay there longer (14.28±16.63 days vs. 8.33±14.99 days;  $p=0.04$ ). **Conclusion:** Patients with tSAH are more likely to have history of hypertension, heart attack and alcohol abuse. They more frequently suffer due to polytrauma, epidural hematoma and Diffused Axonal Injury located in frontal, temporal or parietal lobe. Bone flap removal and longer ICU stay are more common among them.

**166 Patients' Perspectives On Transrectal Ultrasound-Guided Prostate Biopsy- A Survey Study**  
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**Aims:** The aim of this study was to analyze patients' expectations of transrectal ultrasound-guided prostate biopsy (TRUS/Bx) and their following evaluation of the procedure. **Introduction:** TRUS/Bx, used for diagnosis of prostate diseases, is frequently regarded as painful and embarrassing. **Methods:** 73 consecutive males aged 64,92 ± 7,72 undergoing TRUS/Bx at the Department of Urology JU MC in Cracow were surveyed before and after the procedure. Patients assessed, using a 0-10 scale, their anxiety about pain, embarrassment, diagnosis and possible complications associated with TRUS/Bx and their actual experience of the procedure. Questions concerned: patients' background, former urological procedures, awareness of disease and procedure. The influence of aforementioned factors on patients' expectations was analyzed. **Results:** Patients were more anxious about the possible diagnosis of cancer and complications (median 7 and 5,5; respectively) than about pain and embarrassment (median 5 and 3,5). The mean pain assessment after TRUS/Bx was lower by 2,22±3,31 than before TRUS/Bx and the mean embarrassment score decreased by 1,73±3,08 in comparison to embarrassment anxiety score before TRUS/Bx. 40% of patients said TRUS/Bx was better, 55,7% the same and 4,3% worse than expected. Awareness of PSA level decreased the anxiety about complications ( $p=0,0392$ ) and diagnosis of cancer ( $p=0,0424$ ). Patients informed about the purpose of TRUS/Bx had lower embarrassment anxiety level ( $p=0,0326$ ). Patients living in big cities feared less about embarrassment than those from smaller cities ( $p=0,0410$ ,  $OR=2,46$ ). Previous experience of TRUS/Bx decreased the pain anxiety level ( $p<0,05$ ,  $r=-0,2550$ ). **Conclusion:** Patients evaluated TRUS/Bx as less embarrassing and painful than they assumed it to be. Thorough education may successfully decrease anxiety before the procedure and increase the patients' comfort.

**167 Burn Prevention Programs in Portugal: Who Should We Target?**  
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**Aims:** To study burn epidemiology in Portugal by cause, age group, region and sex. **Introduction:** Burn injuries, with impact either physical or psychological/social, lead to approximately 1900 hospitalizations annually in Portugal. Although it is known that scalds/hot objects and fire/flames are the most common causes of burns, cause by specific populations should be assessed to allow burn prevention programs. **Methods:** A retrospective observational study was performed using the Portuguese mainland hospitalization database; all in-patients with a diagnosis of burns (ICD-9-CM: 940.xx-949.xx) bet-

ween 2011 and 2013 were analyzed. Variables studied were burns' cause (scald or hot liquid/object; fire/flames; electrical; chemical) age groups (0-4, 5-19, 20-64 and 65+ years), region of residence (by NUTS II) and sex. **Results:** A total of 4673 burn patients were hospitalized (hospitalization rate of 15.9 per 100,000 Portuguese inhabitants annually). Those at higher risk for burns were the youngest and oldest age groups (hospitalization rates of 57.6 and 24.0, respectively), mainly scald burns in 0-4 years and scalds and fire/flames burns among elderly people. Adult burns due to scald and fire/flames stand out (21.3% and 18.0% of all burns, respectively), followed by scalds among youngest (17.4%), and scald and fire/flames among oldest (12.2% and 15.0%). Fire/flames were more frequent among men, while scalds among women. Also, 5.3% of all burns were due to electrical cause in men. North and Alentejo residents were at higher risk among the youngest while Center and Alentejo were among elderly people. **Conclusion:** A burn preventive program directed to both scalds in infants or preschool children and scalds or fire/flames in elderly people would cover almost half (44.6%) of hospitalized burns in Portugal. Adult burns, frequently work-related explaining two-times higher risk among men, could also be a possible target. Prevention using health education programs, as well as product design/environmental change or legislation/regulation should be designed for high-risk groups.

**168 Chronic Pain After Hernioplasty: A Retrospective Study In CHP**  
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**Aims:** The aim of this work is to evaluate the prevalence of chronic post-hernioplasty pain (CPHP) in male patients who underwent, laparotomy or laparoscopic, hernioplasty. Additionally this study assesses its impact in patients' daily activities, and the technique's influence on its prevalence. **Introduction:** Inguinal hernia repairment is one of the most frequently performed surgeries worldwide. Considering the improvement of the techniques used, the relapse rate has stabilized and chronic postoperative pain became the late complication, most frequent and most difficult to approach. However, recent studies show it has a highly variable incidence rate - ranging from 0% to 54%. While a significant number of studies have explored the potential advantages and disadvantages of both laparotomy and open procedure, there appears to be no clear conclusion about which one is more beneficial for patients. **Methods:** For this propose an observational, cross-section and retrospective study was performed from March to May 2016. It was based on a structured phone interview applied on a sample of 829 male patients who underwent in outpatient, laparotomy or laparoscopic, hernioplasty at Centro Hospitalar do Porto (CHP), between January 2011 and October 2015. **Results:** The results show that 20.7% of the patients reported CPHP during the interview. Moreover, 24.1% experienced CPHP at some time and more than 40% of these patients described a moderate to severe impact in their daily life. No relationship was found between the surgical technique and the CPHP prevalence. However, the impact in professional activity and walking ability was significantly higher in the group of patients submitted to laparoscopy. **Conclusion:** These results indicate that CPHP occurs in a considerable number of patients and often goes undiagnosed or unrecognized as a surgical complication. Therefore, it becomes imperative the definition of initiatives for its prevention, treatment and follow-up, and to raise awareness on healthcare professionals.

**169 Cytotoxicity Of Novel 4,5,6,7-Tetrahydropyrazolo[1,5-A]Pyridine-Fused Diphneylchlorins As Photosensitizers In Human Melanoma Cells**  
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**Aims:** Cytotoxicity's evaluation of a set of four new photosensitizers for photodynamic therapy on malignant melanoma cells (A375 cell line). **Introduction:** Melanoma is the rarest form of skin cancer in which malignant cells form in melanocytes and can occur anywhere on the skin. The number of new cases of melanoma has been increasing over the last 40 years being most common in adults but it is sometimes found in children and juveniles. Photodynamic therapy is a treatment which combines a photosensitizer with light on a specific wavelength culminating in the production of reactive oxygen species leading to cellular death. A new type of stable 4,5,6,7-tetrahydropyrazolo[1,5-a]pyridine-fused tetraphenylchlorins, synthetized via an [8+2+2] cycloaddition of diazafulvenium methides with porphyrins, proved to be very active as photodynamic agents against melanocytic melanoma (A375) and amelanotic melanoma (C32) cells. Thus, looking for a new generation photosensitizers with optimize properties for photodynamic therapy treatment we synthesized new diphenylchlorins. **Methods:** The A375 cell line was cultured according to manufacturers recommendations. Cells were seeded in 48 well plates and left overnight to allow cells's attachment. The photosensitizers NAMP103A, NAMP103 (the tetraphenylchlorins monoester), NAMP263A and NAMP263B (the tetraphenylchlorins alcohol) were administered ranging 5nM to 10 µM. Irradiation was performed after 24 hours using a fluorescent light source equipped with a red filter (λcut off < 560nm). MTT assay was performed 24 hours after the photodynamic treatment. Absorbance was read on spectrophotometer at two wavelengths - 570 nm and 620 nm. **Results:** The results allowed to obtain dose-response curves and to calculate concentration that inhibit the cultures in 50% (IC50) for the four chlorines tested. Phototoxicity is dependent on the chlorines concentration. The IC50 and respective confidence interval was of 4,9[3,1;7,9]nM; 2,9[2,2;4,0]nM; 14,3[10,5;19,5]nM; 14,5[10,2;20,7]nM for NAMP103A, NAMP103B, NAMP263A and NAMP263B, respectively. Moreover NAMP103B was significantly more cytotoxic than NAMP263A ( $p=0,037$ ) and than NAMP263B ( $p=0,042$ ). **Conclusion:** According to the results the tested compounds are very promising with relevant phototoxicity in very low concentrations. This encourages more studies performed to evaluate the mechanisms of cell death induced by these set of PS.

**170 Radium-223 For Metastatic Prostate Cancer. An Attempt To See Beyond What Is Known**  
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**Aims:** To Study the direct effects and kinetics of Radium-223 (223Ra) in metastatic prostate cancer (mPCa) cell lines differing on hormonal receptors and metastatic potential. **Introduction:** In therapeutic terms, metastatic castration-resistant prostate cancer (mCRPC) is the biggest challenger for patients with PCa that frequently metastasizes to the bone. No curative treatments are available. A new alpha-emitting radiopharmaceutical 223Ra, considered an analogue of calcium, demonstrated prolonged overall survival, delayed symptomatic skeletal events, and improved quality of life in patients with mCRPC. However, molecular mechanisms and direct effects of 223Ra in metastatic PCa cells are still unclear. **Methods:** Three tumor cell lines PC3 (bone metastatic PCa), LNCaP (lymph node metastatic PCa) and MNNC/HOS (metastatic osteosarcoma cell line used as control) were incubated with 223Ra (0.5 µCi/mL) in the presence or absence of calcium channel inhibitors. Uptake, retention and internalization studies were performed. Cell survival was determined by clonogenic assay; cells were irradiated with increasing doses (0.25 to 10 mGy), seeded and stained after colonies formation. **Results:** Results demonstrate that, at 120 min, uptake of 223Ra is higher for mPCa cell lines PC3 (1.80±0.11%) and LNCaP (1.59±0.14%) comparing to MNNC/HOS (0.98±0.06%). Preliminary studies show for PC3 28.58±0.54 of internalization. Retention studies also show a higher retention for PC3 (11.72±2.92%) comparative to LNCaP (5.79±0.53) and MNNC/HOS (4.69±0.92%). The presence of inhibitors does not affect uptake profile. A LD50 (median lethal dose) of 3.98±0.01 mGy was obtained for PC3. **Conclusion:** These results suggest that kinetics mechanisms are dependent on the type of cell line. Although cells only internalize low quantities of 223Ra, cells irradiation with low doses of 223Ra decrease cell survival in a dose-dependent manner. This study enhances the great therapeutic potential of 223Ra in the treatment of metastatic PCa and the need to better understand its mechanisms of action.

**171 Role Of Nitric Oxide And Methylenetetrahydrofolate Reductase Polymorphisms In Gynecologic Tumors**  
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**Aims:** To study the association of methylenetetrahydrofolate reductase (MTHFR), nitric oxide synthase (NOS3; NOS2) polymorphisms in benign (leiomyomas) and malignant (cervical cancer) gynecological tumors. **Introduction:** Cervical cancer is a malign lesion, which HPV is a pathogenic agent, however its presence is necessary but not sufficient. On other hand, leiomyomas are well-known benign gynecological tumors in reproductive age, but their molecular pathogenesis is still unknown. Functional polymorphism on genes of MTHFR, nitric oxide NOS2 and NOS3 are involved in the modulation of events such as angiogenesis, apoptosis, reduction of hydroperoxides, cell cycle, regulation of DNA transcription factors, enzyme cofactors and others. **Methods:** In a sample of 154 cervical cancer patients (mean age 43.07±12.84 years-old), 128 leiomyomas patients (mean age 39.64±6.36 years-old) and 478 controls (mean age 44.31±14.89 years-old) were determined MTHFR-C677T, NOS3-intron4a/b, NOS2-intron16 (+88 G>T) and NOS2-exon16 (+14C>T) polymorphisms by PCR or PCR-RFLP. Statistical analyses were qui-square and binary logistic regression. The results were significant for  $P<0.05$ . **Results:** We found significant differences in the distribution of NOS3 genotypes ( $P=0.049$ ), being aa-NOS3 genotype a protective factor in cervical cancer ( $OR=0.11$ ; 95%CI [1.07-0.94],  $P=0.043$ ). For other studied polymorphisms, we did not found significant differences in cervical can-

cer compared to controls ( $P < 0.05$ ). In leiomyomas in relation to controls we found significant differences in MTHFR and, a tendency, in NOS2-intron16, being the CC-MTHFR genotype and GG-NOS2-intron16 genotype associated to almost 3-fold increased risk in leiomyomas (OR=2.21; 95%CI [1.45-3.37],  $P < 0.0001$  and OR=2.42; 95%CI [0.95-6.19],  $P = 0.065$ . Data adjusted for age). For other studied polymorphisms, we did not find significant differences between leiomyomas and controls ( $P > 0.05$ ). **Conclusion:** MTHFR, NOS3, NOS2-intron16 and NOS2-exon16 may be potential triggers for more malignant phenotypes; being untangled a possible important role of NOS polymorphisms concomitant in cervical cancer and leiomyomas.

**172 Rethinking Medical Education: Introducing A Novel Web-Based Anatomy Study Platform – Vimú**

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**Aims:** This work aims to present VIMU online platform and discuss its use as a tool for teaching/learning in medical certification/post-graduation and in continuous education in Anatomy field. **Introduction:** The role of technology in contemporary medicine is acknowledged. Technology changed the way that human body is seen and approached, interfering with the traditional concept of anatomy. In this context, the teaching and learning processes in anatomy rely increasingly in new tools, as is the case of e-learning and e-assessment. **Methods:** Following the development of "Virtual Quiz", a tool build with the objective to improve identification of anatomical structures, we proceeded with reformulation of this project by creating of a new web-based application which functions as a study manager towards the improvement of students' cognitive competences in anatomy in undergraduate medical course. **Results:** The study manager software allows students to practice their capacity to identify anatomical structures in x-ray, TC and MRI films, as well as images of sectional anatomy ("Virtual Quiz"), as well training their neuroanatomical correlations and clinical features in the format of multiple choice question examination ("Clinical Vignettes"). Using this software it is possible to evaluate the users' learning progress, which is useful to implement pedagogical actions in regard of the best knowledge acquisition. **Conclusion:** The continuous evolution of the scientific knowledge in the medical field demands for physicians to incessantly update and certificate their knowledge and skills. Technology plays an important role in medical practice, and begin also to play an important role in medical education. The present work aims to add some contribution in this regard. In fact, the study manager described aims to provide a new platform to maximize the learning process in Anatomy.

**173 Outcomes Of Laparoscopic Versus Open Distal Gastrectomy For Gastric Cancer: A Single-Center Case-Control Study**

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**Aims:** This study aims to compare the outcomes of laparoscopic versus open distal gastrectomy for the treatment of gastric cancer. **Introduction:** Laparoscopic approach for resection of distal gastric cancer has proven superiority in short-term outcomes, but there is still concern about the feasibility of a complete lymphadenectomy and acceptability of its oncological outcomes. **Methods:** A case-control study was made from a prospective database of gastric cancer cases submitted to distal gastrectomy in a single center, between January 2010 and December 2014. **Results:** In this study were included 120 cases, which were divided in two groups: 47 laparoscopic (LDG) and

73 open (ODG) gastrectomies. There weren't significant differences between both groups in demographics, clinico-pathological profile, neoadjuvant therapy or surgical aspects. Both groups presented similar oncological outcomes, without significant differences in R0 resection rate, surgical margins distance, lymph nodes harvested and recurrence rate. In LDG, D2 lymphadenectomy was performed in 34% of the cases, while in ODG was only done in 6.8% ( $p = 0.001$ ). In terms of complications, LDG was associated to less in-hospital morbidity (14.9 vs 24.7%,  $p = ns$ ) and mortality (2.1 vs 6.8%,  $p = ns$ ), with a significant lesser need for re-intervention (0 vs 13.7%,  $p = 0.006$ ) and transfusion (28.8 vs 8.1%,  $p = 0.024$ ). Operative time was significant higher in LDG (243.2±41.2 vs 189.7±40.9 minutes) and there was a non-significant trend ( $p = 0.071$ ) for a shorter LOS in LDG (7.8±3.6 vs 14.3±24 days). In survival analysis, there were significant differences both in overall survival (Log rank,  $p = 0.028$ ) and disease-free survival (Breslow,  $p = 0.042$ ), being LDG superior to ODG. **Conclusion:** According to this study, LDG appears to be superior in survival analysis, being associated with a trend for less morbidity and shorter LOS. A complete lymphadenectomy is feasible in LDG, despite being associated with longer operative time. This study points towards oncological safety of LDG, since the oncological outcomes were similar to ODG.

**174 Examining The Effects Of Large Graphene Quantum Dots On Clinical Appearance And Immunopathogenesis Of Experimental Autoimmune Encephalomyelitis.**

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**Aims:** The objective of this study was to examine the influence of large graphene quantum dots (GQDs) on immunopathogenesis and clinical appearance of experimental autoimmune encephalomyelitis (EAE), and also their potential neuroprotective effect. **Introduction:** In pathogenesis of the most used animal model of multiple sclerosis, EAE, Th1 and Th17 subpopulations of CD4+ lymphocytes, along with oxidative stress, are the two most influential causes. It was shown that GQDs have immunomodulatory effect by interfering with T cell and macrophage activation, and are also able to reduce oxidative stress. **Methods:** EAE is induced to rats of Dark Agouti (DA) strain, with spinal cord homogenate from DA rat (HKM) with Complete Freund's adjuvant (CFA). For determination of the effects which GQDs have, the evaluation of clinical symptoms was carried out, the isolation of lymph node cells (DLC) and cocultivation with oligodendrocytes and PC-12 cells to evaluate if GQDs have neuroprotective effect, isolation and flow cytometry analysis of mononuclear cells (MNC) from the spinal cord, all of that with applied GQDs versus EAE induced rats without treatment. **Results:** EAE induced rats which were given GQDs have a mild clinical case of the disease, compared to control group. GQDs decrease the percentage of IFN $\gamma$  and IFN $\gamma$ /IL-17 producing CD4+ lymphocytes in spinal cord, which are the most important cells in immunopathogenesis of the disease. Finally, GQDs increase the viability of oligodendrocytes and PC-12 cells, which viability was previously decreased by mediators that lymphocytes from DLN produce, in vitro ( $p < 0.05$ ). **Conclusion:** Results demonstrate favorable role of GQDs during the course of EAE, and their immunomodulatory and neuroprotective effects.

**175 Effects Of Antidepressant Vortioxetine On Cognition And Learning Processes In Rats**

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**Aims:** The aim of this study was to investigate the effect of a single application of increasing doses of vortioxetine on cognition and learning processes in rats in the reaction of active avoidance of aversive stimuli. **Introduction:** The World Health Organization predicts that depression will become one of the most important diseases in Europe and in the world by 2030. The depression does not represent only changes in mental function, but it is also connected with changes in cognitive functions. Therefore, the need for new antidepressant,

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which can improve cognitive function, was developed. Today, vortioxetine has a major importance beyond new antidepressant. **Methods:** In our study, we used male Wistar rats and vortioxetine as an active substance. The assessment of behavioral effects of single application of vortioxetine (V: 1.0 - 10.0 mg / kg) was examined using the active avoidance test (AA). The experiment was performed on an automatic device to perform conditional behavior AA (Campden Instruments, USA). **Results:** The statistical analysis has showed that a single application of vortioxetine on the second day of the active avoidance test affects the number of responses AA ( $F(4,30) = 6.312$ ,  $p < 0.05$ ). The dose of 10.0 mg/kg has showed that vortioxetine has the procognitive effects on AA learning (Dunnett's test). The application of vortioxetine did not affect the number of animals transit from one to the other side of the cage in the periods delay between attempts - ITC ( $F(4,30) = 0.539$ ,  $p > 0.05$ ). **Conclusion:** Obtained results suggest that vortioxetine in a dose of 10 mg/kg influences the learning reactions of active avoidance in rats and acutely facilitates learning without significant influence on the parameters of locomotor activity. In a clinical sense, vortioxetine represents a different approach in the treatment of depression and related cognitive disorders.

**176 SLC01B3 Gene Variation Rs2417940 Is Associated With Levels Of Total And Unconjugated Bilirubin Among Latvian Gilbert's Syndrome Patients**

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**Aims:** The aim is to investigate the influence of SLC01B3 gene variation rs2417940 on the bilirubin levels among patients with Gilbert's syndrome (GS). **Introduction:** GS is an autosomal recessive disorder which causes unconjugated hyperbilirubinemia. The range of bilirubin level among patients with GS varies from normal up to 90 $\mu$ mol/l. SLC01B3 gene encoded protein plays a critical role in bilirubin transport. Variations in the SLC01B3 gene has shown to influence the level of bilirubinemia among Asian population but there is no data about Caucasian population. **Methods:** Study included 154 molecularly confirmed GS patients. DNA extraction was performed by the phenol-chloroform method from the venous blood. Genotyping of the variation rs2417940 was performed by TaqMan assay using Rotorgene-Q cyclor. Data statistical analysis was performed using SPSS 22.0. **Results:** Among 154 GS patient 93 were males and 61 were females. Mean male patient age was 15.0±6.3years and mean female patient age was 14.4±5.4years ( $p > 0.05$ ). Mean total bilirubin level was 42.4±19.5 $\mu$ mol/l vs. 33.9±9.3 $\mu$ mol/l ( $p = 0.012$ ) and unconjugated bilirubin level 32.2±20 $\mu$ mol/l vs. 24.3±9.2 $\mu$ mol/l ( $p = 0.05$ ) for males and females appropriately. CC and CT were analysed as one group because there were no statistically significant difference between abovementioned genotypes and bilirubin level. Mean total bilirubin level among patients with genotypes CC+CT was 39.9±17.1 $\mu$ mol/l vs. TT genotype 29.6± 8.8 $\mu$ mol/l ( $p = 0.004$ ). Mean unconjugated bilirubin level was 30±17.5 $\mu$ mol/l vs. 29.2±17.1 $\mu$ mol/l for the patients with CC+CT vs. TT genotypes ( $p = 0.007$ ). Performing correction by gender for genotype association for total and unconjugated bilirubin the associations were still significant ( $p = 0.002$  and  $p = 0.006$  appropriately). Conjugated bilirubinemia was not associated with rs2417940 genotypes. **Conclusion:** 1. Male GS patient have statistically significant higher level of total and unconjugated bilirubin. 2. Variation rs2417940 CC and CT genotypes are associated with increased level of total and unconjugated bilirubin. 3. Conjugated bilirubin level is not influenced by the gender and/or rs2417940 genotypes.

**177 High-Sugar Diet Affects Learning Of The Adolescent Rat**

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**Aims:** To evaluate the effects of a high-sugar diet in the cognition of adolescent rats. **Introduction:** Emerging evidences bridged the gap between the brain and mental health, and it is now established that learning and memory abilities can be influenced by numerous environmental factors. The diet is a crucial environmental factor that impacts brain plasticity and behavior. Among the highly sensitive environment-responsive structures of the brain is the hippocampus, a region extensively known to regulate mood, spatial learning and memory. As the adolescent brain seems to be particularly vulnerable to external factors we aimed to evaluate the effects of a high-sugar diet in the cognitive functions of young rats. **Methods:** Animals aged 4 weeks were randomly assigned to a control diet ( $n = 10$ ) or to a high-sugar liquid diet ( $n = 10$ ) groups during 2 months. As the diet can interfere with exploratory activity, anxiety, learning and memory we have analyzed the performance of the rats in the open-field, elevated plus-maze and Morris water maze tests. **Results:** After the 2-month experimental period, we have found that the high-sugar diet affected the spatial learning process, since these animals showed worse performance during the acquisition phase of the Morris water maze. Despite this worse performance of high-sugar treated animals there were no significant differences concerning the reference memory test. The high-sugar diet did not change the exploratory activity and anxiety levels. **Conclusion:** The present data suggest that the learning processes of adolescent animals are affected by high-sugar diets. These results are important as these types of diets are very prevalent in adolescent humans and the counseling to avoid them should be reinforced as it may interfere with some hippocampal developmental events to be elucidated in future studies.

**178 High-Sugar Diet Effects On The Hippocampus Of The Adolescent Rat**

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**Aims:** To evaluate the effects of a high-sugar diet in the number of neuropeptide Y (NPY) neurons of the hippocampus of adolescent rats. **Introduction:** The diet is a crucial factor that impacts brain plasticity. Among the diet-responsive structures of the brain is the hippocampus, a region known to regulate cognition. Knowing that NPY-positive interneurons are an important population of gamma-aminobutyric acid (GABA)-ergic interneurons of the HF, and their number is influenced by dietary changes (Cardoso et al., 2014) we studied the effects of a high sugar diet characterized by unhealthy metabolic consequences in the hippocampus of adolescent rats. **Methods:** At 4 weeks of age, 20 male Wistar rats were randomly distributed into a control group ( $n = 10$ ) fed with a standard laboratory chow and a high-sugar diet group ( $n = 10$ ) fed with a high-sugar liquid diet during 2 months. Animals were deeply anesthetized and transcardially perfused with the adequate fixative. After conventional immunocytochemistry procedures the number of NPY-immunoreactive neurons in CA3, CA1 and dentate gyrus of the hippocampal formation was estimated using stereological methodology. **Results:** We have found that 2 months high-sugar diet applied to 4 weeks-old rats did not significantly alter the number of NPY-positive neurons in the dentate hilus, CA3 and CA1 subfields of the HF. **Conclusion:** These results are interesting as we have found that another nutritional model, the young-onset caloric restriction treatment also did not affect the total number of NPY-immunopositive neurons in the hippocampus. However, these results contrast with those found after late-onset caloric restriction that interfered with NPY expression in the hippocampus of aged rats. Other morphological parameters must be studied to obtain solid conclusions concerning the structural effects of high-sugar diets in the adolescent rat brain.

**179 Knowledge And Attitudes Of Medical Students About Sleeping And Their Sleep Habits**

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**Aims:** To assess knowledge among medical students about better or worse sleep hygiene-related factors, as well as personal attitudes and habits about sleep and sleeping hygiene. **Introduction:** Most of medical students with undesirable and bad sleep habits have very low sleep, and by now in Serbia and the region no one had investigated the attitude of medical students about the hygiene of sleep and sleeping. **Methods:** A total of 769 students in the University of Belgrade, Faculty of Medicine (369 of fourth year and 400 students of sixth year), had participated in cross-sectional study and were asked to complete an anonymous survey. **Results:** A total of 769 students were investigated (369(48%) students of fourth year and 400(52%) students of sixth year); 288 (37.5%) male and 481 (62.5%) female respondents. Sleeping habits: Among students of fourth year NHS (Sleeping habits and hygiene) score was 26.48±4.98, and 26.45±5.08 among sixth-year students; average 26.46±5. Statistically significant difference was not observed (p=0.918). Sleeping-related beliefs: Sixth-year showed better knowledge about actions and behavior related to better quality of sleep and sleeping (mean SBS- Sleep Beliefs Scale score 7.9±4.9) than fourth-year students (6.63±4.71) (p<0.001); average 7.29±4.85. Quality of sleep and sleeping: PSQI(Pittsburgh Sleep Quality Index) score evaluating sleeping quality was statistically significantly worse in sixth-year (6.69±3.42) than in fourth-year (6.04±3.56) (p<0.001). Of total number (769), 342 (44.5%) scored <5 (meaning a good quality of sleep); among them 189 (55.2%) students of fourth and 153(44.8%) sixth-year. **Conclusion:** Habits, knowledge and attitudes related to sleep and sleeping of medical students are not satisfying, and their sleep quality was poor.

**180 Predictors Of Survival In Merkel Cell Carcinoma Patients: Seer Based Analysis**  
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**Aims:** Our aim was to determine the factors that affect survival among MCC patients. **Introduction:** Merkel cell carcinoma (MCC) is an uncommon highly aggressive neuroendocrine carcinoma of the skin and mucus membranes. The incidence of MCC has markedly increased in the past few years in the United States. **Methods:** The Surveillance, Epidemiology and End Results database was used to identify 3281 cases diagnosed with MCC between 2004 and 2013 using SEER\*stat software version 8.3.2. We tested the impact of different factors on the relative survival (RS) by Kaplan-Meier method in patients with MCC. **Results:** Sentinel lymph node biopsy (SLNB) is the most important tool of staging and was highly associated with higher Five-year relative survival (RS) when compared to removal of Lymph nodes (84.7% vs. 61%, P < 0.001). Survival was worse in patients aged above 70 years than patients aged between 50 and 69 years (RS: 56.6% vs. 67.9%, P < 0.001). Patients with late stages of the disease had significantly lower survival (RS: 76.4%, 62.9%, 50%, 14.9% for stages I, II, III, IV respectively, P < 0.05). Regarding treatment, the survival among patients who had surgery combined with radiation was higher than radiation alone (RS: 66.3% vs 51.1%, P < 0.001) but there was no significant difference when compared to surgery alone (RS: 66.3% vs 62.5%, P= 0.26). **Conclusion:** Merkel cell carcinoma is an aggressive cancer that needs early detection and treatment. Higher survival among MCC Patients was associated with SLNB, age of below 70 years, early stage of the disease and treatment with surgery combined with radiation. Lower survival was associated with age more than 70, late stage of the tumor.

## Abstracts of Bangladesh International Medical Students' Scientific Congress (BIMSSCON)

### Original Research

**01 Autophagy Regulates Hypoxia Induced Human Mesenchymal Stem Cell Death**  
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**Background & Objective:** Mesenchymal Stem cell (MSC) based therapy is a promising approach to treat various oxidative and inflammatory disorders including stroke. Day by day numerous successes are being achieved employing stem cell as a therapeutic agent. However, the survival of these cells post-transplantation remains a major concern, as recent findings indicate that only 1-3% of the cells survives 28 days post-transplantation. However, the fate of MSCs in an oxidative and inflammatory microenvironment is largely unknown. There are multiple mechanisms by which the fate of MSCs is controlled. Autophagy is a basic cellular homeostatic process that enables cells to eliminate portions of their own cytoplasmic contents and it involves degradation of cellular components to ensure a cell's survival during stress conditions. However, whether autophagy plays a role in regulating MSC remains elusive. The purpose of this study is to elucidate the role of autophagy in MSCs survival & death. **Materials & Methods:** Human MSC under standard lab protocol were exposed to hypoxia (OGD) at different time points. Cell viability was assessed by Trypan blue, MTT 3-(4, 5-dimethylthiazol-2-yl)-2,5-diphenyltetrazolium bromide assays. Change in Morphology was also assessed at different time points. Finally, employing SOD1 and LC3 immunostaining the effect of hypoxia in human MSCs were assessed. To establish the relationship between hypoxia and autophagy, MSCs were subjected to different time intervals from 0 min to 24 hours. The best results were obtained at 12 hours of hypoxia treatment, although the MTT and cell-counting revealed that more than 50% of the cells were alive upto 4 hours of hypoxic treatment (62% cell viability). Various treatments of autophagy to MSCs suggested that autophagy regulates the fate of MSCs in hypoxia. **Results:** Our initial findings demonstrated that autophagy occurred in MSCs during their application for hypoxia treatment. Therefore, modulation of autophagy in MSCs may provide a novel strategy to improve MSC-based therapy

**Keywords:** Mesenchymal Stem cell, Stroke, Autophagy.

**02 Association of ACE Gene Polymorphism in Type-II Diabetes Mellitus with Hypertension among North Indian Population**  
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**Background & Objective:** Type-II Diabetes mellitus (T2DM) together with hypertension (HTN) is one of the biggest upcoming disease worldwide, with the number of people affected continually increasing. This study includes 40 T2DM with HTN cases and 40 controls. ACE gene polymorphisms in cases and controls were evaluated by polymerase chain reaction. Aims and objectives of this study were to investigate the association of ACE gene polymorphism in T2DM with HTN among North Indians and to study the different allele and genotype frequencies of ACE gene in T2DM with HTN and controls. **Materials & Methods:** DNA extraction was done in the following way: 5 millilitres of peripheral blood was collected from all the subjects in 0.5M EDTA tubes. Reactions were performed with 10 pmol of each primer: forward primer 5'-CTGGAGACCACTCCCATCTTCT-3', reverse primer 5'-GATGTGGCCATCTTCGTCAGAT -3', in a final volume of 20 µl containing 3 mM MgCl<sub>2</sub>, 50 mM KCl, 10 mM Tris-HCl (pH 8.4), 0.5 mM of each dNTPs and 2 U Taq polymerase. PCR amplification was carried out under the following conditions: initial denaturation at 94°C for 5 minutes, followed by 35 cycles of denaturation at 94°C for 45 seconds, annealing at 60°C for 1.15 minutes, extension at 72°C for 2.30 minutes and final extension at 72°C for 5 minutes. PCR

products were separated on 2.0% ethidium bromide stained agarose gel and visualized by UVP bioimaging gel doc system. **Results:** The products were 490 bp for allele I and 190 bp for allele D. Frequencies of ACE ID, DD and II genotypes in T2DM with HTN cases and controls were 67.50%, 5.00%; 27.50%, 62.50%, 25.00%, 12.50% respectively. Frequencies of ACE I and D allele were 60%, 40% in cases and 42.5%, 57.5% in controls respectively. Findings of this study concluded that ACE gene polymorphism is associated with T2DM with HTN. **Conclusion:** In our study among the 40 hypertensive and T2DM cases, the genotype frequency of ACE I/D, D/D, I/I was 67.50%, 5.00%, 27.50% respectively. Further investigation with larger sample size may be required to validate this study

**Keywords:** ACE gene, Polymorphism

**03 CD133 Stem Cell Marker in Cervical Cancer**  
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**Background & Objective:** Worldwide, cervical cancer is the fourth most common cause of cancer death from cancer in women. Several cancer stem cells have been detected and found to be associated with poor prognosis, resistance to chemotherapy and metastasis. Some of the markers for cancer stem cells are CD34, CD24, CD133 and NANOG. Cancer Stem cells (CSC) in various tumors can be proved by number of cell surface markers, which are useful for isolation of subsets enriched for CSC such as CD133 (also known as PROM1), CD44, CD24, EpCAM, THY1, ATP-binding cassette B5 (ABCB5) and CD200. Recent studies have found that stem cells and CSCs have some common specific surface molecular markers such as CD133, nestin, ESA. Among these important stem cell markers CD133 is proved to be the appropriate marker in many cancers, but use of CD133 marker in cervical cancer is not explored much. The objective of this study was to study the presence of CD133 marker in cervical cancer cases. **Materials & Methods:** Biopsies were collected from such cases and processed in routine manner for getting sections for haematoxylin and eosin (H & E) staining and then studied. One section each was fixed on slides precoated with Poly-L-Lysine for immunohistochemistry staining for CD133 marker. The primary and secondary CD133 antibodies were used from DAKO. **Results:** H&E staining was done along with Van Gieson's stain (VG stain) and reticulin staining in all cases. The sections taken on "Tissue Bond" coated slides were examined for the presence of CD133 marker, using commercially available monoclonal antibody kit (DAKO for CD133), through a standardized immunohistochemistry procedure in histopathology. The study comprised a total of 20 cases of which 14 cases showed positive CD133 marker with grade II staining. We had 14 cases showing cells marked by CD133 in various numbers and intensities in cervical cancer tissue. This study demonstrated that CD133 can be taken as a marker for cancerous stem cells in cervical cancer. **Conclusion:** However studies with a larger number of cases are required to clarify the position of CD133 positivity in different stages of cervical cancer to arrive at any definitive conclusion.

**Keywords:** Cancer, CD133

**04 Prevalence of Obesity among Menoufia University**  
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**Background:** Overweight and obesity are defined as abnormal or excessive fat accumulation that may impair health and which can be measured by Body Mass Index (BMI). In 2014, 39% of adults aged 18 years and over (38% of men and 40% of women) were overweight (\*WHO). Raised BMI is a major risk factor for non communicable

diseases such as cardiovascular diseases (mainly heart disease and stroke), leading cause of diabetes, musculoskeletal disorders and some cancers (endometrial, breast, and colon). **Objective:** We aimed to assess prevalence of overweight and obese students at Menoufia University and detect the main risk factors of obesity and keep it as data base for obesity prevalence at our university as an initiative to spread it all over Egypt & other universities. **Materials & Methods:** Analysis of height and weight data of about 435 students from 7 university colleges were done. Students were randomly recruited from faculties of Medicine, Law, Arts, Sciences, Engineering, Commerce, and Computer Sciences. A self-administered questionnaire of 500 was then used to assess their dietary habits, regular exercise, blood pressure, sugar levels. **Results:** 171 students were over-weight (BMI 25) with rate 39.3 % and 52 students were obese (BMI= 30) with rate 11.9 % in medicine &amp; In engineering colleges among 140 students 57 students (41%) were overweight and 18 students (13%) were obese. In Other 5 colleges among 295 students overweight =101 students ,obese = 26 students 130 overweight students did not have regular exercise. **Conclusion:** Obesity is prevalent at Menoufia University; more at scientific colleges medicine&amp; engineering due to sedentary studying life style. Lack of awareness about obesity and its hazards and importance of regular exercise and healthy life style should be increased.

**Keywords:** Obesity, BMI, Menoufia.

- 05 **Social Factors Affecting Students Mental Health: The Iranian Female High School Perspective**  
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**Background & Objective:** Adolescence is one of the most important stages of human life and there is a lot of evidence in the literature that psychiatric disorders can be transmitted through adolescence social interactions in High School. The present study aimed to assess social factors affecting Students mental health in city of Qazvin (Iran) during 2015. **Materials & Methods:** In this cross-sectional study, 600 female high school students from Qazvin were selected using cluster sampling. The General Health Questionnaire (GHQ-28) was administered to collect data. T-tests, analysis of variance (ANOVA), and Pearson's correlation analysis were applied to analyze the data in SPSS. **Results:** Mental disorders were found in 60% of the students. The participants' mean score of mental health was  $29.31 \pm 14.63$ . Somatic symptoms, anxiety, social dysfunction, and depression were present in 36%, 49.7%, 50%, and 41.3% of the students, respectively. Students' mental health was significantly related with their father's education and household income. However, students' season of birth, school grade, body mass index, mother's education, and father's occupation were not significantly related with their mental health. **Conclusion:** Poor mental health was found to be highly frequent among female students. Low income and father's low education level were identified as the risk factors of poor mental health among female students in Qazvin.

**Keywords:** Students, mental health, general health

- 06 **Effects Of Vegetarian Diet On Chronic Diseases: Dream Or Reality?**  
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**Background & Objective:** Concerning the widespread outbreak of chronic diseases, prevention has an important role in improving health in the society. Having a proper diet can prevent the disease. The aim of this study was to find out the effect of a vegetarian diet on chronic diseases. **Materials & Methods:** This article tries to study based on reliable articles of Sid, Pubmed, Webmd and Science Direct. **Results:** Diets is the cause of cancer in 30% of Western countries and 20% of developing countries. Vegetarian diet can decrease the risk of cardiovascular diseases, diabetes mellitus, hypertension, obesity

and cancer. For example, people with lacto-ovo diet have less risk of gastrointestinal cancers. Women on vegetarian diets had less risk of getting uterine and breast cancers. In some studies done in England and California, it was also observed that the rate of colon cancer was less especially in pesco group. Studies show that high fat diet increase estrogen and prolactin in body and their impact on intestinal flora bacteria that increase secretion of bile acids. Bile acids stimulate tumor growth. Grilled red meat can produce amino heterocyclic compounds. These compounds have been linked with increased risk of cancer. High-fibre foods increase sensitivity to insulin. Insulin and IGF-1 act as promoters for most normal and pre-neoplastic tissues. Their down-regulation may reduce cancer rates. Soy and its derivatives are rich in phytoestrogens that reduce breast cancer risk. In lacto group Calcium reduces proliferation and induce apoptosis in the digestive tract cells. **Conclusion:** Although vegetarianism is considered a deprivation in diet, it should be included in diet meal planning.

**Keywords:** vegetarian diet, chronic diseases, cancer.

- 07 **Effects of Propionyl-L-carnitine and L-carnitine on cardiovascular disease: Dream or Reality?**  
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**Background & Objective:** Carnitine is an essential biological material that transports fatty acids into myocytes and produces required energy of heart by beta oxidation. Propionyl-L-carnitine is a carnitine derivative that has a high affinity for muscular carnitine transferase and it increases cellular carnitine content, thereby allowing free fatty acid transport into the mitochondria. Aim of this study was to evaluate the impact of these two materials in cardiovascular disease. **Materials & Methods:** This article tries to study based on reliable articles of Sid, Pubmed, Webmd, ScienceDirect. **Results:** Carnitine has a protective effect against ischemic injury and reduces infarct area and myocardial injury after ischemia and reperfusion. These protective effects are performed by increasing glucose metabolism (improving carbohydrate metabolism), reducing the accumulation of lactate, counteracting the toxic effect of high levels of free fatty acids and removing free radicals. In addition carnitine can inhibit malignant arrhythmias because of accumulation within the myocardium of long-chain acyl-CoA and reducing the ischemia-induced apoptosis and the consequent remodeling of the left ventricle. Supplementation of the myocardium with carnitine results in an increased tissue carnitine content, a prevention of the loss of high-energy phosphate stores, ischemic injury, and improved heart recovery on reperfusion. In small short-term studies, carnitine acts as an antianginal agent that reduces ST segment depression and left ventricular end-diastolic pressure. Propionyl-L-carnitine stimulates a better efficiency of the Krebs cycle during hypoxia by providing it with a very easily usable substrate, propionate, which is rapidly transformed into succinate without energy consumption (anaplerotic pathway) and improves exercise capacity in patients with heart failure. **Conclusion:** According to what was said propionyl-L-carnitine and L-carnitine has beneficial effects on cardio vascular disease.

**Keywords:** propionyl-L-carnitine, L-carnitine ,cardiovascular disease

- 08 **Knowledge, Attitude and Practice Of Preventive Measures About Swine Flu Amongst Medical Students In Rawalpindi, Pakistan.**  
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Army Medical College, Rawalpindi, Pakistan.

**Background & Objective:** The recent 2016 outbreak in Pakistan is a remnant of the 2009 H1N1 pandemic that affected 29 countries causing many casualties(2) .Mainly, it is spread amongst humans through respiratory transmission though zoonotic transmissions were reported as well. Since, as of 17th January, 2016, 54 cases have been reported in Pakistan (5), this study intends to highlight the awareness and perception amongst medical students. This will allow

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necessary steps to be taken in order to combat the disease. The objective of the study was to evaluate the knowledge, attitude and practice of preventive measures of swine flu amongst medical students of Rawalpindi, Pakistan. **Materials & Methods:** The study was conducted in Medical institutes of Rawalpindi from February 2016 to April 2016. It was a cross sectional study using convenient sampling technique with sample size of 140 of university students. Data was collected by standard pretested online questionnaire that was distributed among students and was analysed using Microsoft Excel. **Results:** Total of 140 students were enrolled in study. Only 66.4% knew causative organism was H1N1 virus. According to them, common symptoms were fever(67.7%), muscle aches (55.6%), sever cough (43.5%), diarrhea and vomiting (20.2%). About 37.1% were in favour using antibiotics to treat it. About 71.5% agreed to the need to quarantine a swine flu patient and just 46.3% knew about vaccination of swine flu. **Conclusion:** Overall, the knowledge among university students about the disease was good considering most of the subjects were from junior years. Their attitude about the disease was up to expectations. The problem comes with the practice of preventive measures which is way less considering the level of threat. It should be increased among students by seminars and symposiums as they have to treat patients in future.

**Keywords:** Swine flu, Pandemic.

- 09 **Awareness of Pakistani Mothers About Vaccination Of Their Children According To EPI Schedule**  
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**Background & Objective:** Immunization(1) is a proven tool for controlling infectious diseases. It has estimated to avert 2-3 million deaths each year. In Pakistan, vaccination coverage is according to EPI schedule(3) and its compliance is linked to education and socioeconomic status of population(4). Vaccination preventable diseases causes 20% of 8.8 million death per year, this study intends to test a hypothesis whether better awareness of mothers about EPI and their socioeconomic status are associated with prevention of diseases in children or not. The objectives of this study were to compare awareness among mothers about vaccination in high, middle and low socioeconomic group and to study the effect of awareness of mothers on immunization status of their children. **Materials & Methods:** The research was conducted in MH and CMH Rawalpindi from September 2014 to March 2015. It was a comparative cross-sectional study using non probability convenient sampling technique. Population proportion is 0.5 with absolute precision of 0.06 and sample size is 267 calculated by WHO sample size calculator. Mothers of children under 5 years of age were selected in the sample. Data was collected using a structured questionnaire with open and close ended questions and was analysed using SPSS version 20. **Results:** Total of 267 mothers were enrolled in study. 32.2% belonged to low, 54.3% belonged to middle and 13.5% belonged to high socioeconomic group. 98% from low, 99% from middle and 97% from high socioeconomic group were aware that vaccination prevents infectious diseases. In low socioeconomic group 13.9% were partially vaccinated and 3.4% weren't vaccinated. In middle socioeconomic group 8.3% were partially vaccinated and 0.7% weren't vaccinated. In high socioeconomic group, 2.7% were partially vaccinated. **Conclusion:** Most of the mothers in CMH and MH were aware about vaccination. Vaccination status of children under 5 years in all three socioeconomic groups was generally satisfactory.

**Keywords:** EPI, awareness, mother, tertiary care hospital.

- 10 **Impediments to Seeking Dental Care in Chittagong City: Are We Making Any Progress?**  
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Chittagong Medical College, Dental Unit

**Background & Objective:** Oral diseases such as dental caries, periodontal disease, tooth loss are particularly high for the underprivileged

and poor population groups in Bangladesh. A group of studies shows, people believe that taking dental action is not very salient. Recent discovery shows oral diseases are linked to non-communicable diseases primarily. So, this paper tries to find out the reason behind failure to seek dental care to remove barriers between dental care and patients. **Materials & Methods:** A qualitative dual-methodology approach, utilizing both focus groups and individual interviews, was used in this research. Participants were recruited using purposive sampling in Chittagong city. A topic guide was utilized to guide qualitative data collection and patients were categorized in two different conditions: based on socio-economic condition; and based on perception of need which divides patients in two different groups: regularly visiting and occasionally visiting. Patients were asked about their awareness on dental treatment, monthly income, dental visit that are important to them and treatment cost. The data were transcribed and analyzed using framework methodology. **Results:** From a month long study, financial barrier was identified as an active barrier. Some other factors were fear of dental care, accessibility of dental care and dental environment. Another significant issue is perception of need pushing the lower income people to get their treatment at the last stage. Improving the individual perception of need can ensure regular dental check up. Systemic change should look into reducing costs, improving information and good patient management. **Conclusion:** Though the chance of improving oral health is great in Bangladesh, barriers to dental care are making it difficult. So, action at individual level, reducing cost, improving management skills can eliminate the barriers ensuring better dental care.

**Keywords:** Impediments, Qualitative dual method, Financial barrier, Perception of need.

- 11 **Occupational Health Status of Traffic Police Working in Dhaka Metropolitan city**  
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Armed Forces Medical College, Dhaka

**Background & Objective:** Occupational health is one of the neglected issues in our country. As occupation is a major determinant of health, the traffic police facing continuous vehicular emission, noise pollution, stress, long working hours, poor posture, repetitive movement of the body etc are exposed to multiple occupational hazards. According to population reports, approximately 2.7-3.0 million people every year die due to air pollution. There is no reliable and comprehensive estimates of noise induced health hazard. **Materials & Methods:** It was a descriptive cross sectional study conducted in Dhaka metropolitan city from February'16 to August'16. Data was collected by a community survey with face to face interview from the respondents with semi structured questionnaire by convenient sampling. The data was analyzed by SPSS 20.0 **Results:** The sample size was 56 where average age was between 30-40 years. Majority of the respondents were muslim 94.7%. Most of them (67.85%) are working for 15-20 years. 46.43% have chronic dry cough & 26.79% experience breathlessness during winter. 67.86% are diagnosed case of hypertension among which only 12.5% take antihypertensive drugs regularly. 62.5% say that they are getting irritable day by day. Some of them are also suffering from backache (39.28%) & pain in knee joint (32.14%). **Conclusion:** Studies regarding traffic police occupational health is very limited in our country. This study will hopefully draw the attention of the authority to the health aspect, periodic health checkup facilities & let them rethink about working in shifts as well as working condition of this group. Thus further large scale studies are needed to explore present health condition of them & proper interventions should be made to upgrade the situation.

**Keywords:** occupational health, traffic police.

- 12 **Electrical Burn: A Clear Study of Its Complications in the Population of Chittagong**  
Afrina Akter, Mostofa Arafat  
Chittagong Medical College

**Background & Objective:** Burn has become a common form of trauma with high morbidity and mortality rates. Recently, after looking through the patients' registry book of "Plastic Surgery and Burn Unit" of Chittagong Medical College and Hospital (CMCH), it has been found that a major portion of the patients are victims of electrical burn, which has impelled us to initiate a further observation on electrical burn and complications resulting from it. **Materials & Methods:** After conducting a three month long survey from June to August, 2016, on over 200 patients admitted to the burn unit of CMCH including 118 males, 46 females and 36 children. It was found that about 25.5% of total patients were the victims of electrical burn which possessed the highest percentage of all the burn cases. For the purpose of knowing the complications along with other effects following electrical burn, their record files were checked thoroughly which was followed by confronting patients directly with a questionnaire related to their injuries. Finally, after analyzing the data, the complications they faced were noted. **Results:** Nearly 29% of the patients were found having musculoskeletal complications in which 2, 5 and 2 patients were inflicted respectively with limb injury, head injury and auto amputation of limbs. Facial injury, gangrene and post burn contracture were also found, all in 1 number. The second most commonly occurring complications were related to the heart (about 26.53%). These patients were referred to the Department of Cardiology. Sinus bradycardia and sinus arrhythmia were the common findings. About 17.86% of the patients were found to be suffering from post-burn sepsis which was a major cause of death. Approximately 9% of the patients presented with acute renal failure (ARF). Two patients found with cataract formation were attended by ophthalmologists. Two deaths occurred due to sepsis, ARF and acute respiratory distress syndrome. Other complications noticed were nerve damage, ulcer in abdominal viscera, anaemia, hormonal imbalance and long term psychological trauma. **Conclusion:** From the study, it can be concluded that the physiological and psychological consequences of electrical burn must be prevented. The electrical systems in the industries and households must be constructed in a way that prevents burn incidents and fire safety must be ensured as well. Electrical equipments need to be handled with proper caution.

**Keywords:** Electrical Burn, Complication, Sepsis, Safety, Death

- 13 **Breastfeeding Practices in a Selected Rural Area**  
Masnoon Billah  
Shaheed Suhrawardy medical College

**Background & Objective:** Breast feeding is the fundamental right of every child. Breast milk is the only source of nutrition freely available to the newborn from the mother. It is the natural first food for babies. Recent scientific evidence reveals that malnutrition has been responsible, directly or indirectly, for 60% of all deaths among under five children annually. Over two-third of these deaths are associated with inappropriate feeding practices and occur during the first year of life. Only 35% of infants worldwide are exclusively breastfed during the first four months of life and complementary feeding begins either too early or too late with foods which are often nutritionally inadequate and unsafe. Despite the clear benefits and active promotion of breastfeeding, adherence remains low in many developing countries including Bangladesh, where it is estimated that fewer than 40% of infants younger than 6 months old are exclusively breastfed. **Materials & Methods:** This was a cross sectional type of descriptive study. This study was conducted at Kaliakair upazilla under the district of Gajipur. The study was carried out from October, 2015 to April, 2016. The work schedule is shown in the annexure. One village of Kaliakair upazilla named Sritofoli was selected purposively. The respondents were selected purposively as well. All the available mothers having children between 6 to 24 months of age who were willing to participate in the study were interviewed. Within the data collection period, 780 mothers were interviewed. A semi structured questionnaire was used to collect data. At first the questionnaire was prepared in English (annexure-2) and then translated into Bangla (annexure-3). Data was collected by face to face interview through an interviewer administered questionnaire with the respondents. At the end of the day, each questionnaire was checked

to see whether it was filled completely and consistently. Then they were stored after giving appropriate identification number. **Results:** 780 mothers having children between 6-24 months age group were selected purposively from a village of the selected area. The mean age of the respondents was 24 years ( $\pm 4.493$ ) and the mean age of the children was 16.84 months ( $\pm 5.766$ ). Most of the mothers had different levels of education (92.4%). Most (93.6%) of the respondents were housewives. Two-third of the mothers belonged to nuclear families while one-third belonged to joint families. Mean income of the families was 15380.77 Tk. ( $\pm 13593.179$ ). Ninety five percent of the respondents were from middle (10,001-30,000 Tk. monthly income) or low income group (less than 10,000 Tk. monthly income). A vast majority (90.5%) of the respondents used sanitary latrine. Among the 780 mothers, 98.8% breastfed their babies while 1.2% did not. Almost 91% of the mothers had the knowledge about the importance of breastfeeding. Among the mothers who breastfed their babies, 55.6% (429) practiced exclusive breastfeeding. Colostrum was given by 95.5% mothers to their babies. The remaining 4.5%, who did not give colostrum, gave lack of knowledge and superstition as the main causes. Breastfeeding was started right after birth by 73.7% mothers while 24.3% started within 5 days. More than half of the mothers continued to breastfeed beyond 16 months of age. 44.4% (342) of the respondents who did not practice exclusive breastfeeding gave various types of additional food to their babies. The first choice was powder milk (57%) followed by cow's milk, shuji, water and some other food, the main reason being insufficiency of milk (82.2%). Most (90.6%) of the mothers started complementary feeding between 6-10 months of age. Only 9 respondents did not breastfeed their child ever. **Conclusion:** As the present cross sectional study was conducted among only 780 mothers of a selected rural area, large scale study is essential to find out the breastfeeding practices in women of rural area throughout the country. Considering the findings of the study, following recommendations are made: Health education program may be arranged to aware people of the importance of exclusive breastfeeding. It was found that three-fourth of the mothers were using powder milk as an additional food. This powder milk is a serious health concern for the babies. The manufacturing, import and sale of this product should be banned. The main reason behind not giving additional food was insufficiency of breast milk. Appropriate measures need to be taken to aware the community of importance of mother's diet and post natal care of the mother.

**Keywords:** Exclusive breastfeeding, improper breastfeeding, colostrum, complimentary feeding.

- 14 **Study On Life Style Modification And Behavioral Risk Factors For Pre-Hypertension & Hypertension At Urban Area Of Dhaka City In Bangladesh**  
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Dhaka National Medical College

**Background & Objective:** Prevalence of Hypertension is on rise silently & slowly in Bangladesh. This cross sectional study was conducted aiming at evaluating reversal of blood pressure through reduction of behavioral risk factors & life style modification in urban community of Dhaka City. The study also aimed at finding out the socio-economic and demographic profile for pre-hypertension and hypertension. **Materials & Methods:** This cross sectional study was conducted among 300 respondents out of 1304 population aged 18 years or above in Laxmibazar, Koltabazer and Wari areas of Dhaka city. This survey was carried out at household level during the period September 2012 to October 2013. Purposive sampling was used to collect respondents with pre-hypertension and Hypertension. The respondents had neither any complication nor any co-morbidity. All data were entered and analyzed by Computer with the help of SPSS 16.0. **Results:** The prevalence of pre-hypertension was 10.7% and hypertension was 10.7% among total population. The age range was 18-64 years (mean age was 39.6), most of the respondents were 21-50 years old. Among the respondents 53.7% were male and 46.3% were female and prevalence of hypertension was found more among males 49(16.3%). Married people showed more prevalence of pre-hypertension and hypertension. Middle class respondents with

hypertension were more reflected in this study. Most of the respondents were found with positive family history of hypertension, 52.3% in first degree family members. Dietary habit showed carbohydrate and protein intake more common in the respondents, relation between use of extra-salt and blood pressure was positively finding in this study. Smoking was not a significant prediction in this particular study. Among this study only 6.7% respondents performed heavy physical activity in an average week. In the anthropometric measurement about 41% of the respondents were found overweight and 15.7% were obese by BMI. **Conclusion:** In this study the prevalence of pre-hypertension and hypertension was found to be alarming in Bangladesh in the perspective of a developing country. Reversal of hypertension is possible by structured life style and behavioral risk reduction meaning- intake of balance diet with exclusive of extra-salt, increment of physical activity along with reduction of body weight. A strong emphasis on counseling, following a hypertension programmed, gives hypertensive patients a chance to carry out life style changes and have their medication adjusted to achieve goals for blood pressure control.

**Keywords:** BMI, Hypertension, Pre-hypertension, Life style modification, Excess sodium chloride consumption

- 15 **Breast Cancer: A Comparative Study between the Presenting Stages and Call for Awareness among Underprivileged Women in Chittagong**  
Orindom Shing Pulock, Shaera Tasfia, Atiqur Rahman, Anu-tosh Sarker  
Chittagong Medical College

**Background & Objective:** Breast Cancer is the second most common cancer in the world, and by far, the most frequent cancer among women with an estimated 1.67 million new cancer cases diagnosed per year, which is 25% of all cancer types. The same scenario is applicable for Bangladesh. It is seen that, every year approximately 14,836 women contract breast cancer and 7,142 of them die [1], [2]. The purpose of the study was to evaluate the awareness of breast cancer among underprivileged women with contrast to their presenting stages. **Materials & Methods:** A cross-sectional study was undertaken among 31 underprivileged female breast cancer patients aged between 20 and 82 years from July 25 to August 28, 2016 at Chittagong Medical College Hospital. A standard questionnaire [3] was administered comprising of questions related to breast cancer and its awareness. One-on-one interviews of these patients were taken. **Results:** Of the 31 patients, mean age being 45.4, 70.97% were diagnosed with stage III and IV cancers, whereas 29.03% were of stage 0 to II. Among them, 77.42% had never heard of breast cancer and took 3 to 4 years, whereas 22.58% who had heard of it, took 1.5 to 2.5 years to consult a physician. Only 3.22% of them had known about breast cancer screening and self breast examination (SBE). Furthermore, it was found that 51.61% of them took supplements from the local pharmacists or religious priests, 41.97% had economic difficulties and 29.02% were scared of what the doctor might say, and thus avoided consulting a physician. **Conclusion:** Social contextual factors of an individual and negligence towards health check-ups result in delayed diagnosis of breast cancer. Breast cancer awareness programs have the potential to increase awareness and downstaging of the disease.

**Keywords:** Awareness, Breast Cancer, Chittagong, Staging, Underprivileged women

- 16 **Generalized Anxiety Disorder: Our daily Habit or Curse?**  
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Rajshahi Medical College

**Background & Objective:** Generalized anxiety disorder (GAD) is a common phenomenon in our life and its incidence is gradually rising at an alarming rate in the developing part of the world. Although research is going on in the developing part of the world, we are still not so advanced. Study on GAD is thus a crying need in our country. So, we planned to conduct a study on GAD among the adult

people of Puthiya Upazilla, Rajshahi. Its objective was to determine the prevalence of GAD to find its association with socio-demographic variables. **Materials & Methods:** A cross sectional type of descriptive study was conducted with a sample size of 306, selected by non-randomised purposive sampling from people aged above 18 years and willing to give consent in Puthiya Upazilla, Rajshahi. Data was collected by face to face formal interview with the help of a semi-structured questionnaire containing Hamilton 7-point Anxiety Scale. Age, gender, type of family, educational status, marital status, religion, occupation, monthly family income and socio-economic status were taken as independent variables. Anxiety status/GAD was the dependent variable. **Results:** We divided our respondents in five age categories and most of them were between 18 and 30 years, which is 33.66% of the total respondents. Among the total (306) respondents, 74.18% had GAD; where female had more (77.92%) anxiety than male (70.39%). Majority of the respondents (75.16%) were Muslim and remaining were Hindu; where GAD was more prevalent (78%) among Hindus than among Muslims (68%). GAD was more common (85.53%) in illiterate people and also in those from poor socio-economic condition (116 out of 306 respondents) and less frequent in the rich class. By occupation, housewives suffered more (82.91%) from GAD. It was less frequent in service holders (39.99%). Regarding interference of GAD in life, most of the GAD affected respondents (117 of the respondents) had mild interference and about 31 respondents had no interference at all in their life. **Conclusion:** In our study, among 306 respondents, about 227 had GAD of varying degrees of severity. As we can see, the prevalence rate is high. We recommend that health personnel should give counseling and raise awareness so that people can cope up with stress easily as part of daily life.

**Keywords:** Generalized Anxiety Disorder, Socio-demographic variables, Age, Gender, family, Education, Marital Status, Religion, Occupation, Socio-economic status

- 17 **Strategic Recommendations for Transformative Health Professional Education towards Health Equity**  
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Shaheed Suhrawardy Medical College Hospital

**Background & Objective:** Evidence based recommendations for health professional education transformation to achieve health equity was vividly pictured in the Prince Mahidol Award Conference, a leading global conference on health policy that was convened in Thailand in January, 2014 with the theme "Transformative Learning for Health Equity". **Materials & Methods:** This article was prepared by reviewing the session notes, keynote papers, conference report and WHO Guideline for transforming health professionals' education after the conference in 2014. **Results:** In 2006, WHO World Health Report addressed the global crisis of unequal distribution and incompetent human resource for health. These created some global momentum like GHWA, ANHER, AAAH advocating for sustainable policy on transformative education of health professionals. Towards the journey for health equity, reform in both health system and education is essential. This reform is based on several changing contexts of health system e.g. demographic, epidemiologic and economic transitions, labor market dynamics, shift of disease burden, health expenditure etc. There are some cross cutting issues like disproportion between generalists and specialists, integrating social accountability in the curricula, improving measurement of health workforces' performance, creating inspirational role model educators which are influencing reform in both systems. Educational reform can be explained in instructional and institutional dimension. Instructional redesign principles are based on competency based learning, inter-professional learning, experiential learning, balanced online-onsite learning and flexible designs of curriculum. Simultaneously, institutional reform includes faculty development, strengthening teaching capacity, management capacities, public-private collaboration, quality assurance, accreditation and regulation for improving education quality. WHO guideline for health professional education also suggests to draw attention to these dimensions for policy development. **Conclusion:** A global consensus has been accumulated that transformative health professional education should focus on global changing context of

health system and requires institutional and instructional reform for achieving goals of health equity.

**Keywords:** Transformative Education, Health Professional Education

**18 Knowledge on Hepatitis B Viral Infection and Vaccination among Adult Rural Population**  
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Armed Forces Medical College

**Background & Objective:** Hepatitis B viral infection is intermittently endemic in Bangladesh. Studies show patients with post transfusion hepatitis and doctors with acute hepatitis were 60% and 65.5% respectively. Moreover, hepatitis B virus (HBV) may be the cause of upto 80% of all cases of hepatocellular carcinoma. There is no effective treatment available. Prevention is regarded as the best option. The objective of the study was to assess the level of knowledge on hepatitis B viral infection and vaccination among adult population in rural community. **Materials & Methods:** A community based descriptive cross sectional study was conducted in rural communities of Gopalkrishnapur and Mahishashi villages of DhamraiUpazilla. The study period was from 2nd to 31st January, 2016. The sample size was 510 and sample technique used was non-probability purposive sampling. Data were collected by door to door survey with face to face interview of the respondents. Data was analyzed using calculator and MS Office package. **Results:** Among the 510 respondents, 72.22 % had knowledge regarding HBV. 59.01% considered blood transfusion to be the principle means of spreading. 48.04% considered massive mass campaign as the main preventative mean. 61.18% considered it to be preventive, 82% were aware of the vaccination discovery, 92.35% gave opinion that all children should be vaccinated and 88% were aware about the inclusion of vaccination in the EPI schedule. **Conclusion:** Awareness is the best way to obstruct the progression of hepatitis B viral infection towards high prevalence. The study not only reflects the current state of knowledge about HBV in the rural community and the immense need of public awareness in this regard but has also been a source of apprehension among the rural communities of Bangladesh.

**Keywords:** Hepatitis, Bangladesh, Awareness

**19 Prevalence of Birth Related Problems and Congenital Anomaly in Offsprings of Consanguineous Marriages in Bangladesh: A Cross Sectional Study**  
Srizon Roy Tirtho  
Sir Salimullah Medical College

**Background & Objective:** Consanguinity is the property of being from the same kinship as another person. Consanguineous marriage is associated with increased risks of congenital anomalies, low birth weight and other adverse perinatal outcome. In this cross sectional study, we investigated the risk of congenital anomaly and birth related problems in consanguineous marriages in Bangladesh. Our aim was to analyse the levels of consanguineous marriages and their risk on offsprings. **Materials & Methods:** The data was collected from outdoor child development centre of Mitford Hospital, Dhaka from October, 2014 to April, 2016. Sample size was 84. Secondary data was collected from hospital record book. Primary data was collected over phone through a questionnaire. **Results:** 946 child developmental diseases was reported from October, 2014 to April 2016. Amongst them 84 cases (8.87%) reported with consanguinity. All cases of consanguinity was muslims (100%). Most of the mothers (78.38%) were housewives and educational status (37.84%) was less than SSC. Most of the fathers (43.24%) had only completed primary school. Most of the families' (29.73%) incomes were between BDT 20,000-30,000. Among the cases, most of the consanguineous marriages (70.27%) were between paternal first cousins. We found congenital cataract (2.7%), low birth weight (LBW) baby (8.1%), neonatal asphyxia with HEA type 2 (27.02%), cyanotic heart disease (2.7%), microcephaly (16.22%), epilepsy (37.84%), hearing loss (5.4%), developmental delay (21.62%), speech disorder (35.14%) in offsprings. Mothers gave history of abortion (10.81%) and 8.1% gave history of intra-uterine

death (IUD). **Conclusion:** The practice of consanguineous marriages in Bangladesh is quite remarkable and most of them come from low socioeconomic conditions. So, raising awareness among them is necessary.

**Keywords:** Consanguinity, Anomalies, Offsprings, Bangladesh, Epilepsy, Developmental delay

**20 A Study on Uncontrolled Type II Diabetes Patients**  
Anika Nawar  
Army Medical College Chittagong

**Background & Objective:** Type-II diabetes mellitus is a long term metabolic disorder which is multifactorial and is caused by both genetic and non-genetic factors. This disease must be kept in control by taking necessary steps in order to prevent the complications arising from uncontrolled diabetes. The aim of this study is to analyse the causes behind uncontrolled diabetes among Type II Diabetic patients. **Materials & Methods:** It was a descriptive study performed among a 100 type-II diabetic patients at CMH Chittagong who were handed standard questionnaires for diabetic assessment along with collection of their blood glucose levels. **Results:** 47% of the patients were Type II diabetics with blood sugar levels under control. 23% of the patients had borderline diabetic blood glucose levels and the rest 30% had uncontrolled diabetes. Among these 30% of patients with uncontrolled diabetes, 69% reported non-adherence to both insulin injections and oral drugs, 15% reported non-adherence to oral drugs and 16% reported non-adherence to insulin injections. 55% among these 30% of patients were not following the standard diabetic diet and 72% among them had little to no physical activity. The study was conducted among an age group of 40-70 years. **Conclusion:** Non-adherence to anti-diabetic drugs is one of the leading causes of uncontrolled diabetes among the patients of this study. Evaluation of the drug adherence in such patients and motivating them to take drugs regularly could be considered as a pivotal step to bring their diabetes under control.

**Keywords:** Uncontrolled diabetes, Drug non-adherence

**21 Hypertensive Status and Relation of Blood Pressure with Socio-demographic and Nutritional Status in Selected Areas of Barisal District**  
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Sher-E-Bangla Medical College, Barisal.

**Background & Objective:** Hypertension is a major health problem and the leading cause of premature death among adults throughout the world. However, very few studies on hypertension have been conducted in the southern part of Bangladesh. The objective of our study was to assess hypertensive status of selected areas of Barisal district, its relation with their socio-demographic and nutritional status. **Materials And Methods:** It was a cross-sectional type of observational study. Convenience sampling method was adopted. Students of Sher-E-Bangla Medical College collected data from people of 18 years and above from the upazillas Nalchhiti, Ujirpur (representing rural population) and Barisal Sadar (representing urban population) from 16 to 18 November, 2015 by face-to-face interviews using a pretested questionnaire. **Results:** 1953 cases were studied. Mean age was 39.3 years. The study consisted of 50.1% from urban population and 49.9% from rural population. Male to female ratio was 1:1. Mean systolic blood pressure was 124.14 mm. Mean diastolic pressure was 81.43 mm of Hg. 373 (19.1%) cases had high systolic blood pressure, 618 (31.6%) had high diastolic pressure and 139 (7.11%) had both raised. Total number of cases of hypertension was 852 (43.6%). Mean BMI was 23.87 kg/m<sup>2</sup>. The study showed higher blood pressure with increasing age, BMI, tobacco use and in case of women, with menopausal state. A positive family history and male gender are two of the non-modifiable factors contributing to development of hypertension. Surprisingly, those taking extra salt and oral contraceptive pills had lower blood pressures. Those with no formal education had the highest mean systolic blood pressure (127.98 mm of Hg) followed by those who had received higher education (125.77 mm of

Hg). The case was vice-versa for mean diastolic blood pressure, the values being 82.01 mm of Hg and 81.90 mm of Hg for the highly educated and uneducated respectively. **Conclusion:** Socio-demographic and nutritional status have significant influence on blood pressure. The relation between blood pressure and extra salt intake and use of OCPs found in this study were inconsistent with that of studies carried out in other parts of the world. The relation between high blood pressure and higher education is also a matter of concern. This calls for further research in this region to determine the cause behind these findings.

**Keywords:** Hypertension, Socio-demographic status, Nutritional status, Barisal

**22 Knowledge on Hepatitis B viral Infection and Vaccination Among Adult Population in a Rural Community of Bangladesh**  
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Armed Forces Medical College, Dhaka. Research Investigator, International Center for Diarrhoeal Disease Research, Bangladesh.

**Background & Objective:** Hepatitis B is an acute systemic infection with major pathology in the liver. In approximately 5-10% of cases, HBV infection fails to resolve and the affected individual becomes persistent carrier of virus. In Bangladesh, lifetime risk of acquiring HBV is between 20-60% which causes - acute hepatitis (31.25%), chronic hepatitis (76.3%), cirrhosis of liver (61.15%) though studies are revealing that knowledge on hepatitis B awareness and vaccination is limited. **Materials & Methods:** It was a descriptive cross sectional study conducted in a rural area of Dhamrai upazilla from August, 14 to November, 14. Data was collected by a community survey with face-to-face interview from the respondents with semi structured questionnaire by convenient sampling. The data was analyzed by SPSS 20.0 **Results:** The sample size was 330 (female 44.25% male 55.75%) where average age was in between 18-30 years. Majority of the respondents were muslim (94.44%-79.79%) were literate. About 49.23% had knowledge of hepatitis B where most of the respondents (57%) considered that professional blood donors are the main reason of spreading the disease. According to them, high risk individual were drug addicts (67.50%) they considered that mass campaign (47%) was the main way of preventing it. Among the population 36.09% knew about the invention of vaccine against this. Again 45.15% were aware about inclusion of vaccine in EPI schedule but only 21.45% knew about booster dose. **Conclusion:** Hepatitis B is gradually becoming a great threat to globe. It is a must to create awareness amongst the people in order to minimize the rate of morbidities and mortalities. Although vaccine is included in EPI schedule, if people do not know about the booster dose, all preventive approaches will go in vain. Thus further studies are needed to explore the knowledge level in general by large scale studies and interventions should be made to upgrade the situation.

**Keywords:** HBV infection, vaccination, booster dose, cross sectional

**23 Qualitative Study into the Decision Making Process of Retrospective Bangladeshi Medical Tourists**  
Abdul Baseer Arham, Ananya Sarker Dhanya  
Sir Salimullah Medical College.

**Background & Objective:** Recently a trend of going abroad for treatment has been observed. Bangladeshi medical tourists constitute the 2nd highest proportion of medical tourists in Thailand(1). However no notable studies have been done in Bangladesh to either quantify the number of tourists or understand their mindset. The aim of this study is to understand their decision making process and to highlight any factor of the Bangladeshi health sector which influenced them. **Materials & Methods:** 23 persons who went abroad for treatment were selected through non-random purposive sampling through google forms using unstructured questionnaire. In depth semi structured over the telephone interviews of those who consented were conducted and were recorded for future use. **Results:** Five themes have emerged from the interview:

1. Reasons for opting treatment abroad
2. Any prior experience of treatment at home
3. Motivating factor
4. Information source
5. Reasons for choosing definite country.

Most frequently visited country is India. People having doctor in the family opted to go abroad for better treatment in spite of having option for taking treatment in Bangladesh. **Conclusion:** The Bangladeshi medical tourists opt to go abroad for mainly the following reasons: mental satisfaction, therapeutic dead end in home country, word of mouth about better treatment from others. So, our visualization is that push factors are overriding pull factors in sending patients abroad. The study demonstrates the need to improve those aspects of our health sector.

**Keywords:** Medical tourism, Decision making, Retrospective, Bangladesh

**24 Health Problems after a Recent Flood among the People of Alo'rChor : Rural Community of Bangladesh**  
Dr. Yameen Hamid, Dr. Imtiaz Hafiz, Syeda Nazmun Nahar, Dr. Zahidul Alam, Monira Ahmed  
Green Life Medical College Hospital

**Background & Objective:** Natural disasters are catastrophic events with atmospheric, geologic, and hydrologic origins. Disasters include earthquakes, volcanic eruptions, landslides, tsunamis, floods, and drought. Floods are the most common natural disaster in both developed and developing countries and they are occasionally of devastating impact. Their effects on health vary between populations for reasons relating to population vulnerability and type of flood event. Bangladesh is a flood-prone country where many people are affected by rising waters and displacement every year. Post disaster situation gives birth to many health problems. Emergency response and organized system has the ability to lower the health problems and get back to previous condition early. The health status of a country is an indicator of development of the country. Health indicator values differ from urban area to rural area as sociality is a major factor in maintenance of health. The health condition of people in a rural community after a natural disaster reflects the current health status of a country and indicates steps to be taken to improve the condition. **Materials & Methods:** A cross-sectional type of descriptive study was done on the people of Alo'rChorisland under Kurigram district from August to September 2016 with a sample size of 277 subjects. Sampling was done by purposive sampling technique. Data were collected by face to face interview method. Data were saved and analysed with Microsoft Excel 2010. **Results:** The study showed that more than half (54%) of the subjects were female and male were 46%. Among the persons presenting symptoms of illness, majority were of the subjects belonging to age group 21 to 40 years, that is, 29.2%, and almost equal in the age group 5 to 10 years accounting 28.8% . The most common presenting complaint was multiple symptoms (26%). The second most common were symptoms like limb injuries, paraesthesia, some gastrointestinal symptoms etc. (17%). Among the multiple symptoms, the most occurring complaint was abdominal pain associated with fever and cough suggesting gastrointestinal symptoms and concurrent upper respiratory tract infection (22.72%). Among the age group 0-5 years, the most common symptom was fever associated with cough, indicating upper respiratory tract infections (23.80%). For the age group 6-20 years, the frequent complaint was earache (23%) and the second most frequent complaint was earache followed by deafness (21%). And at last for the adult age group, that is, 20 years and above the mostly received symptoms were multiple symptoms (27.10%) which included limb injuries, mechanical pains, eye infections, gastrointestinal symptoms and for the women, genitourinary symptoms suggesting acute infections. **Conclusion:** The study found that the proportion of male and female patient were almost equal. The younger ones were suffering from upper respiratory tract infections whereas the older ones complained of gastrointestinal and other infective symptoms. The occurrence of diarrheal disease shows the awareness of the people towards water borne disease but at the same time a considerable

portion of children suffered from ear infection leading to deafness. This reflects the betterment of the health education system as well as indicates the specific system related awareness among the rural people. It indicates the necessity of expanded health facilities with door step services and broad heading health education.

- 25 Electrical Burn: A Clear Study of Its Complications in the Population of Chittagong**  
Sakiba Musarrat, Afrina Akter, Mostofa Arafat  
Chittagong Medical College

**Background & Objective:** Burn has become a common form of trauma with high morbidity and mortality rates. Recently, after looking through the patients' registry book of "Plastic Surgery and Burn Unit" of Chittagong Medical College and Hospital (CMCH), it has been found that a major portion of the patients are victims of electrical burn which has impelled us to initiate a further observation on electrical burn and complications resulting from it. **Materials & Methods:** After conducting a three month long survey from June to August, 2016, on over 200 patients admitted to the burn unit of CMCH, having 118 males, 46 females and 36 children, it was found that about 25.5% of total patients were the victims of electrical burn which possessed the highest percentage of all other burn cases. For the purpose of knowing the complications along with other effects following electrical burn, their record files were checked thoroughly which was followed by confronting patients directly with a questionnaire related to their injuries. Finally, after analyzing the data, the complications they faced were noted. **Results:** Nearly 29% of the patients were found having musculoskeletal complications in which 2, 5 and 2 patients were inflicted respectively with limb injury, head injury and auto amputation of limbs. Facial injury, gangrene and post burn contracture were also found, all in 1 number. The second most commonly occurring complications were related to the heart (about 26.53%). These patients were referred to the Department of Cardiology. Sinus bradycardia and sinus arrhythmia were the common findings. About 17.86% of the patients were found to be suffering from post-burn sepsis which was a major cause of death. Approximately 9% of the patients presented with acute renal failure (ARF). Two patients found with cataract formation were attended by ophthalmologists. Two deaths occurred due to sepsis, ARF and acute respiratory distress syndrome. Other complications noticed were nerve damage, ulcer in abdominal viscera, anaemia, hormonal imbalance and long term psychological trauma. **Conclusion:** From the study, it can be concluded that the physiological and psychological consequences of electrical burn must be prevented. The electrical systems in the industries and households must be constructed in a way that prevents burn incidents and fire safety must be ensured as well. Electrical equipments need to be handled with proper caution.

**Keywords:** Electrical Burn, Complication, Sepsis, Safety, Death

- 26 Emergencies for Neonatal Healthcare in Special Care Newborn Unit (SCANU) of Chittagong Medical College and Hospital, 2016**  
Mohammad Azmain Iktidar Adnan Abdullah, Nowhsin Jabin, Anika Rahman, Afsana  
Chittagong Medical College

**Background & Objectives:** The neonatal period is the first four weeks of a child's life. While efforts to reduce maternal and child mortality rates over the last couple of years have had a striking impact, stillbirths and newborn deaths over the same period have missed out on the attention they require. According to the World Health Organization (WHO), in 2015, neonatal mortality rate was 23.3 per 1,000 live births and number of neonatal death was 74,378 in Bangladesh. Although neonatal health care approaches have expanded through the years, especially in developing countries like Bangladesh, these numbers identify that there is still scope for enhancement. **Materials & Methods:** Data was collected from the Special Care Newborn Unit (SCANU) of Chittagong Medical College Hospital (CMCH). From the registry office, death certificates and patients' reports from the period of January to June of 2016 were taken. Name, address, sex, viable

age, cause of death were taken as fields and using Microsoft Excel, the result was plotted, taking cause of death as the independent and number of mortality as the dependant variable. **Results:** Results show that, the primary emergency is prematurity, causing 31% of all neonatal deaths. Others include birth asphyxia and birth trauma (22%), sepsis and other infectious conditions (19%), congenital anomalies (12%), pneumonia (4%), to name a few. **Conclusion:** SCANU provides immediate medical care for sick newborns, including management and referral health care for illness and screening. Only 16 SCANUs are present in Bangladesh. Where most facilities are devoid of special newborn care, they are treated in paediatric ward without proper quality and safety procedures leading to high fatality rate at root health care. Quality newborn care is distant from national standard in absence of SCANU. Enhancing the knowledge about hazards alongside skilled clinical staff, supervision, monitoring and mentoring can strengthen the quality care.

**Keywords:** Neonate Emergency Death CMCH

- 27 Save the Life of Someone You Love with Cardiopulmonary Resuscitation (CPR)**  
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Chittagong Medical College

**Background & Objective:** Cardiopulmonary resuscitation (CPR) is an emergency procedure that combines chest compression and artificial ventilation to preserve brain and heart functions in emergency situations. CPR is not being used to its full potential in Bangladesh. Why isn't CPR administered regularly as emergency cardiovascular care. Bridge the gap by teaching people about CPR and training them to use CPR for emergencies. **Materials & Methods:** The sample size was 200. Samples were taken from medical personnel, medical students, nurses, ambulance paramedics, police officers and general people A survey was conducted and subjects were asked:

1. Do you know what CPR is?
2. Are you trained in CPR?
3. When should you perform CPR? Have you been in a situation that required CPR?
4. Have you ever performed CPR? If not, why not?

A question-answer and discussion session was held afterwards on the benefits and potential uses of CPR. Subjects were also given a demonstration on the step-by-step guide on how to perform CPR correctly. **Results:** 34% didn't know about CPR. 47% had strong misconceptions. 11% had previously performed CPR. 2% had prior CPR training. Common misconceptions include:

1. CPR is only for drowning.
  2. It can only be performed in hospitals by trained personnel.
- CPR can be administered for many medical emergencies eg. cardiac arrest, strokes, epilepsy, heat stroke, shock, choking, arrhythmia, asthma, apnea, allergic reactions, fainting and breathing obstructions. Most cardiovascular emergencies occur when medical help isn't close-by. CPR is an effective out-of-hospital emergency treatment. CPR can be performed by anyone, anywhere. Common reasons for not administering CPR: lack of knowledge about CPR, no prior training, panic and fear of performing CPR, and fear of harming the patient, especially infants or children. The discussion and question-answer session addressed these topics **Conclusion:** It only takes 4-6 minutes after cardiac arrest for brain function to stop. Immediately administering CPR restarts blood flow in 28% cases and triples survival rates. CPR is a basic emergency procedure. Everyone should get CPR training. CPR courses can be held in schools and colleges. CPR can be the difference between life and death. If you are trained in CPR, you can save a life.

**Keywords:** CPR, cardiopulmonary resuscitation, CPR training, emergency cardiac care

- 28 Rheumatoid Arthritis (RA)-The Most Common Autoimmune Disorder**  
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Rheumatoid arthritis (RA) is a progressive inflammatory autoimmune disease with articular and systemic effects. Its exact cause is unknown but genetic and environmental factors are contributory. T-cells, B-cells and the orchestrated interaction of pro-inflammatory cytokines play key roles in the pathophysiology of RA. Differentiation of naive T-cells into Th-17 (Th 17) cells result in the production IL-17, a potent cytokine that promotes synovitis. B-cells further the pathogenic process through antigen presentation and autoantibody and cytokine production. Joint damage begins at the synovial membrane, where the influx and/or local activation of mononuclear cells and the formation of new blood vessels cause synovitis. Pannus, the osteoclast rich portion of the synovial membrane destroys bones, whereas enzyme secreted by synoviocytes and chondrocytes degrade cartilage. Antigen-activated CD4+ T cells amplify the immune response by stimulating the other mononuclear cells, synovial fibroblasts, chondrocytes and osteoclasts. The release of cytokines especially TNF-alpha, IL-6 and IL-1 causes synovial inflammation. In addition to the articular effects ( arthralgia, swollen joints, limping, polyarthritis, loss of range of movements, loss of joint functions, stiff joints, rheumatoid nodules), pro-inflammatory cytokines promote the development of systemic effects, including production of acute-phase proteins (such as C-reactive protein) anaemia of chronic disease, cardiovascular disease and osteoporosis and affect the hypothalamic-pituitary-adrenal axis resulting in fatigue and depression. The disease is diagnosed on the basis of clinical features, multiple blood tests, and sometimes X-ray may also come in handy. The drugs used for this incurable disease include non-steroidal anti-inflammatory drugs (NSAIDs), disease-modifying antirheumatic drugs (DMARDs), janus kinase inhibitors (JAK inhibitors) etc. along with physiotherapies, surgeries, inclusive arthroplasty, arthrodesis, synovectomy, or even joint replacement in severe cases.

- 29 Zika Virus and Its Association with Microcephaly**  
Wasi Ahmed Meraj, Labannaya Das Puja, Rakib Hasan  
Sir Salimullah Medical College

**Background & Objective:** In early February 2016, WHO declared the pandemic outbreak of Zika virus (ZIKV) in Central and South America. Since its outbreak in Brazil in early 2015, the transmission of ZIKV has been confirmed in 35 countries. Pregnant women are at risk the most from ZIKV infection, with it being linked to various birth defects, notably microcephaly. The aim of this research is to establish the relationship between ZIKV infection and microcephaly. **Materials & Methods:** We retrospectively analyzed the collected data from studies during ZIKV outbreak in Brazil from August 2015 to February 2016 and French Polynesia from September 2013 to July 2015. From this database, the risk of microcephaly during ZIKV infection in different trimesters of pregnancy was estimated and compared. **Results:** The data obtained from Rio showed that out of 88 women who were enrolled, 72 tested positive for ZIKV. Foetal ultrasonography was performed in 42 ZIKV-positive women that revealed abnormality in 12; fetuses of 5(12%) showed intra-uterine growth restriction with or without microcephaly and no abnormalities were seen in foetuses of 16 women who were tested Zika-negative. Another study in Brazil found 35 cases of microcephaly in 21 (74%) of which (?) women reported of having rash during first trimester, 5 in the second trimester. During the outbreak of ZIKV in French Polynesia in 2013, 66% of the population were infected and a study found 8 cases of microcephaly, of which 7 occurred in the first trimester. These findings suggest strong link between ZIKV infection and microcephaly. Another finding is the prevalence of microcephaly in ZIKV infection in the first trimester. However, we cannot exclude the risk of microcephaly from infection in other trimesters. **Conclusions:** There is strong evidence which suggests ZIKV as one of the causative factors of microcephaly. Women with suspected or confirmed ZIKV infection should be monitored closely.

**Keywords:** Zika Virus, Microcephaly, Pregnancy, Trimester

- 30 Single Nucleotide Polymorphisms (SNPs) Contribute to Common Genetic Roots to Five Major Psychiatric Disorders**  
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**Background & Objective:** Autism, attention deficit hyperactive disorder, clinical depression, bipolar disorder, schizophrenia-these five most common psychiatric disorders, traditionally considered to be clinically distinct, have in fact common genetic risk factors to develop either in childhood or in adulthood. The review provides an overview to this pragmatic evidence of shared genetic aetiology to lead the way for new treatment and for predicting these conditions. **Materials & Methods:** The papers for this review article were identified by computerized advanced searches in Pubmed database and Google Scholar using the keywords SNPs, psychiatric genetics, CACNA1C mutation, CACNB2 mutation, chromosome 3p21, chromosome 10q24. **Results:** There is a wide range of rigorous evidence that variation in a single nucleotide occurring at a specific portion in the genome, often pronounced as Single Nucleotide Polymorphisms(SNPs) at four loci regions on chromosomes 3p21 and 10q24 and SNPs within two L-type voltage gated calcium channel subunit(alpha-1C) CACNA1C and CACNB2(beta2 subunit) contribute to this disorder significantly. The risk associated single nucleotide polymorphism (SNP rs 1006737) in CACNA1C prognosticated hippocampal activity during emotional processing and increased prefrontal activity during executive cognition, whereas mutation in CACNB2(SNP atT/C in Intron 1A) showed altered time-dependent inactivation of calcium ion currents. **Conclusions:** This analysis shows that individual and aggregate molecular genetic risk factors are overlapped between the five psychiatric disorders. The finding that genetic variants have cross-disorder effects is a provisional step towards helping clinicians to understand the common co-occurrence of clinical phenotypes in individual patients.

**Keywords:** Psychiatric genetics, Single nucleotide polymorphism

- 31 Reconstructive Plastic Surgery in Bangladesh**  
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**Background & Objective:** Plastic surgery was first introduced in Bangladesh by Dr. Ronald J Garst in National Institute of Traumatology and Orthopaedic Rehabilitation (NITOR). With the help of reconstructive plastic surgery, form and function of the body and aesthetic appearance can be restored in circumstances like after an accident, cancer surgery or congenital malformations. As a result, lives can be saved and changed. Although this branch of surgery was neglected for a long time in government hospitals, recent establishment of Plastic Surgery department in medical college hospitals has boosted its activity. So in this paper, we will discuss about the revolution of reconstructive plastic surgery in Sylhet MAG Osmani Medical College Hospital (SOMCH) and give a glimpse of the kind of work going on in this department. **Materials & Methods:** The research was cross sectional study and we took convenient type samples. We retrospectively viewed 12 trauma and cancer reconstructive cases between July 2015 and June 2016. **Results:** Post operative outcome of trauma and cancer cases reconstructed with various pedicles and free flaps have been discussed here. Post operative follow up was done according to procedure. Flap survival, functional gain and restoration of form on discharge were considered as successful outcome. **Conclusions:** Plastic surgery is not only about aesthetic surgery which is only the tip of the iceberg. The important and real need in our country is reconstructive surgery. The aim of this presentation is to convey the importance of reconstructive plastic surgery in a country like ours.

**Keywords:** NITOR, form and function, cross sectional, convenient, pedicles, free flaps, flap survival, functional gain

- 32 Ultrasonographic Evaluation of Thyroid Nodules among Patients at The Center of Nuclear Medicine and Ultrasound, Sylhet MAG Osmani Medical College Campus**  
Gazi Sareem Bakhtyar Alam  
Sylhet MAG Osmani Medical College

**Background & Objective:** The nodular status among the patients at The Center of Nuclear Medicine and Ultrasound, Sylhet MAG Osmani



Medical College Campus was studied using ultrasonographic investigation. Nodular disease is a common problem in Bangladesh. It is assumed that majority of patients with enlarged thyroid should have solid nodular goitre. Maximum nodules should show benign characteristic. Nodular goitres are more common among women and the middle aged. The ultrasonographic investigation should show a similar picture. **Materials & Methods:** The nodular status of 115 patients, 88 female and 27 male, were determined using ultrasonography during the six month period of July 2015 to December 2015. After taking written informed consent, the patients' history was taken and examination was done and recorded on data sheets. Ultrasonography was performed by a real time ultrasound system, SEIMENS model 10033322, using 10 MHz linear transducer probe. Images were made on thermal imaging film and reports were made which included measurement of the thyroid gland, assessment of any nodules, and vascular status of the thyroid. **Results:** Of the 115 cases, majority showed solid multi-nodular goiter (66.09%), followed by diffuse goiter (20.87%). Females (64.83%) and older age groups (51.65%) were more prone to develop thyroid nodules. Solid nodules (89.9%) were more common than cystic nodules. Most of the nodules were benign (98.9%). **Conclusions:** The study found that the distribution of nodular disease in the study sample is consistent with that of the general population in Bangladesh. Majority of the cases were solid nodular goiters. Most nodules were benign. The condition was more prevalent among women and the middle aged.

**Keywords:** Goitre, Enlargement of the thyroid gland is called a goiter. Goiters may be diffuse, enlargement of the whole gland, or nodular, formation of nodules or lumps in the thyroid. Ultrasonography: Ultrasonogram is a diagnostic imaging technique based on the application of ultrasound to visualize internal structures of the body. Routine clinical examination of the thyroid gland can often fail to establish nodular status. It is also difficult to distinguish benign or malignant thyroid growth clinically. Ultrasonography serves as a relatively inexpensive, safe, and non-invasive investigation for better evaluation of the thyroid gland.

**33 Rational Use of Drugs in Bangladesh in Comparison to Other Countries of South-East Asia**  
Sayeda Nazmun Nahar  
Shaheed Ziaur Rahman Medical College

**Background & Objective:** Appropriate use of drugs is an essential element in achieving quality of health and medical care for patients and the community as a whole. Irrational use of medicine is widespread throughout the world and it is more common in developing countries like that of South-East Asia region and Bangladesh holds a high position in this list. Hence, the aim of this research was to assess the condition of Bangladesh in comparison to other countries of South-East Asia in terms of rational use of drugs. **Material And Methods:** Literature Review was done based on the following criteria:  
1. Average number of drugs per encounter  
2. Use of antibiotics  
3. Drugs prescribed by generic name  
4. Drugs prescribed from essential drug list  
5. Drugs prescribed as injection  
6. Use of multivitamins and multi-minerals

**Results:** According to several studies done in various hospitals, the average number of drugs per encounter in Bangladesh is 3.6 while in India and Nepal it is 2.7 and 2.91 respectively. In studies done on drugs prescribed by generic name, Bangladesh has a rate of 1.33% while India has 73.4%, Nepal 21.3%, Pakistan 12.26% and Sri Lanka 78%. In studies concerning use of antibiotics, the rate in Bangladesh is 48%, in Nepal 28.3%, in India 39.6% and in Pakistan 80%. In terms of drugs prescribed from essential drug list, Bangladesh has a rate of 43.16%, which is lower than rates in India (90.3%), Pakistan (49.81%) and Sri Lanka (70%) but higher than that in Nepal (21.7%). In terms of prescribed injection use, Bangladesh has a rate of 1.33%, being lower in comparison to Nepal (3.1%), India (13.6%) and Pakistan (57%). Use of multivitamins and multi-minerals is 39.37% in Bangladesh and 55% in Pakistan. **Conclusions:** In accordance to all the data studied, the circumstances of Bangladesh in terms of rational use of

drugs are better than Pakistan, but unsatisfactory in comparison to other South-East Asian countries, involved and assessed according to WHO recommended rates. So, it can be concluded that the drug control authorities should be better equipped and more vigilant to cope with the present situation of Bangladesh. Health professionals and drug manufacturers should be more committed to accomplish the policy of WHO Rational Use of Drugs.

**Keywords:** rational use of drugs, essential drugs, prescribing, generic name

**34 Psychiatric Illnesses in Bangladesh: The Role of Societal and Familial Factors**  
Ayat Shah  
Mymensingh Medical College

**Background & Objective:** The care of psychiatric patients in Bangladesh is negligible for two main reasons: the existence of social stigmas and society's attachment to traditional methods of care. Social stigmas exist among the general public and family members of the mentally ill. Stigmas discourage patients from expressing their problems. Furthermore, with only seven recognized mental facilities and thirty practicing psychiatrists in Bangladesh, as per a 1993 survey, there is very little scope for appropriate treatment. If families do seek help, they mostly seek traditional care, which is characterized by exorcisms and herbal remedies. **Materials & Methods:** In 2008, fifty patients in the psychiatry outpatient department of a tertiary level hospital were interviewed in a non-probability convenience sample to find out how frequently patients opted for traditional service providers before referral to a mental health professional (MHP). Further, the study intended to study the magnitude by which people delayed their visit to a MHP. **Results:** There are two pathways for seeking help: indirect and direct. It was found that 84% of the interviewees who took the direct pathway, sought non-professional help before consulting a MHP. Among those who took a direct pathway, 44% of them visited a private practitioner, 22% a native religious leader, and 12% a rural medical practitioner, before consulting a MHP. The greatest visitation delay was between 22 and 31 weeks, found in those referred from a private practitioner to a MHP. Upon interview, it was found that family members largely influenced the initial decisions for treatment. **Conclusions:** This data serves as a testament to the fact that social stigmas and misguided familial preferences for traditional methods of treatment hinder the amount of care that psychiatrically ill patients receive. Future research into these factors will increase societal awareness about appropriate media of treatment.

**Keywords:** stigmas, psychiatric care, mental health

**35 Budd-Chiari Syndrome Trapping a Bangladeshi Man in a Child's Body**  
Emiko Sultana, Dr. Tasdik Hasan Dip  
Faridpur Medical College

Budd-Chiari Syndrome (BCS) is a rare disease. The worldwide prevalence is estimated to be 1 per 100,000 population and affects 2% of the population in Bangladesh. It is defined as a congestive hepatopathy with obstruction of the hepatic venous outflow tract. Classical presentation of BCS include a triad of ascites, hepatomegaly and abdominal pain, and is usually associated with various degrees of liver dysfunction. A man of 29 years was admitted into a tertiary hospital with complaints of progressive distension and pain in the abdomen. On examination, pallor and mild jaundice was found along with tense ascites. He had no signs of secondary sexual characteristics. The routine investigations revealed anemia and latent jaundice. The total serum protein was decreased. There were no viral markers found. Ascitic fluid examination showed that the fluid was exudative in nature. Ultrasonogram of the abdomen revealed the liver was enlarged but had normal texture, the portal vein had a normal diameter, and no thrombus was noted. Doppler study of the hepatic and portal system revealed that the portal vein, hepatic artery and hepatic veins were intact, showing well-filling of blood and a normal flow velocity spectrum. No evidence of portal hypertension was found

despite clinical history of engorged superficial veins over the chest and abdomen but there was a spider web pattern seen on hepatic venography. There is visible evidence of the presence of a collateral circulation despite a normal diameter and blood flow through the hepatic vein which makes the conventional surgical techniques to reduce the clinically observed portal hypertension (by angioplasty or shunting) ineffective. Physicians are inquiring to note if there are any other methods available to reduce portal hypertension instead of resorting to a liver transplantation.

**Keywords:** Budd-Chiari Syndrome (BCS), Ascites, Portal Hypertension

**36 Case Report on Suspected Left Sided Bochdalek's Hernia**  
Dr. Saqiba Aziz, Dr. Sadeka Sultana, Dr. Antara Das  
Anwer Khan Modern Medical College Hospital

Bochdalek's hernia is a congenital anomaly usually diagnosed in neonatal and post-neonatal patients, as the patient presents with abdominal and respiratory symptoms in these periods. 90% of such hernias are left sided as was suspected in the case of this patient. Thus, we report such a suspected case of this condition in the following case report; we took a particular interest in seeing whether the preoperative diagnosis could be definitively established after thoracotomy. The patient, 1 year and 4 months old, was admitted to the hospital on 10/2/2016 with the complaints of recurrent episodes of vomiting and nonproductive cough. He also had complaints of fever for the past 5 days. It was not associated with chills and rigor, intermittent with regards to periodicity and the highest recorded temperature was 102°F. The patient had been suffering from these symptoms from 2 months of age from 2 months to 6 months, he vomited about 1 to 2 times a day following breastfeeding. However, the frequency of these complaints had decreased since 6 months of age. According to the patient's mother, he had episodes non projectile vomiting every 3 to 4 days, following breastfeeding or taking meals. It was not associated with abdominal distension. The patient had also been hospitalized 3 times in the previous 10 months with complaints of cough, respiratory distress and rhinorrhoea. He had been previously diagnosed with pneumonia during one such episode. During the period of hospitalization, he was treated with syrup paracetamol and syrup levosalbutamol. General physical examination was normal. The patient temperature was 99°F at the time of examination. Chest examination revealed slightly decreased movements on the left side in the infra-mammary area. Tactile vocal fremitus was decreased and percussion note was impaired on the lower left side. Breath sounds, All regions. Chest X-ray showed a dense, homogenous opacity in the left lower zone. The upper margin of the opacity was sharp and had a contour of a diaphragm on posteroanterior view. CT Scan of chest revealed that left hemi-diaphragm was raised compared to the right. Ultrasonography of abdomen showed no significant findings. The patient was provisionally diagnosed as a case of Left sided Bochdalek's hernia. However, there was suspicion that he might have been suffering from left sided diaphragmatic eventration. Posterolateral thoracotomy of the patient was performed on 14/2/2016. During the operation, the patient's thorax was opened along the upper border of the 8th rib without nicking the rib. The left lung was well inflated, no erosion or enlarged lymph nodes were seen. The left hemi-diaphragm was very thin, transparent suggesting that there was congenital failure of its muscular development. No intrathoracic abdominal structures were seen. The rim of the diaphragm was found to be healthy. Plication was done with 3-0 prolene; inverted plication technique was done in 2 layers. Proper haemostasis was maintained throughout the operation. Chest drain was inserted in situ. Chest was closed in layers. Bleeding was negligible. The patient's post operative diagnosis was concluded to be eventration of the left hemi-diaphragm. The patient's postoperative period was uneventful. He was discharged around 10 days following operation with appropriate advice. He was found to be healthy and had no complaints on follow up. Thus, we can conclude that for certain patients of cardiothoracic surgery, definitive diagnosis can perhaps only be made during thoracotomy. While, the radiological reports cannot be deemed to be entirely misleading, measures should still be taken to improve the quality of imaging in Bangladesh.

**Keywords:** Cardiothoracy surgery, Eventration of diaphragm, Bochdalek's hernia

**37 Severe Anaemia as a Consequence of Chronic Kidney Disease following Diabetes Mellitus with Hypertension**  
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A microvascular complication of long standing diabetes mellitus is nephropathy. High blood sugar from diabetes can destroy the tiny blood vessels of the kidney that filters waste from blood. And later on, renal failure occurs. Anaemia commonly occurs in people with chronic kidney disease as a result of erythropoietin deficiency (which is a hormone produced by healthy kidney), diminished erythropoiesis (due to toxic effect of uremia) and reduced dietary intake. Mrs Halima, a 50 years old lady was admitted to the Diabetic association Medical College (DAMC) Hospital with severe weakness for 2 months which was associated with generalized body ache and palpitation. She also complained of swelling of her right leg and scanty micturition for last 1 year. It was not associated with abdominal swelling. She was a known case of diabetes mellitus for last 12 years and hypertension for 10 years. The patient developed critical lower limb ischaemia and a non-healing left foot ulcer 5 years back and underwent an amputation below the knee joint. She gave a history of taking insulin. On physical examination, the patient was severely anaemic, pitting oedema was present in her right leg. There was leukonychia and clubbing of hand. Hypopigmentation of her face and multiple scratch marks were found on her body. There was no lymphadenopathy or thyromegaly. Bony tenderness was present in distal end of her long bones. Her pulse rate was 110 beats/minute and blood pressure was 190/110 mm of Hg. Diabetic retinopathy grade 2 was present. There was no other neurological abnormality. Her investigation report revealed Hb% 5.8 gm/dl, peripheral blood film showed normocytic normochromic red cells, serum creatinine level was 2.93 mg/dl. Albumin was present in routine microscopic examination of urine. Small kidney size was found in ultrasonogram report of whole abdomen. Her electrocardiogram (ECG) report gave evidence of left ventricular hypertrophy. She was prescribed soluble insulin (40U), anti-hypertensive drugs, lipid lowering agent (atorvastatin), diuretics (frusemide) and vitamin D3. She was also suggested 2 units of blood transfusion. As in chronic diseases, complete recovery is very unlikely. Our target was to slow down the disease progression and to improve the patient's general condition.

**Keywords:** Erythropoietin, Soluble insulin, Hepcidine, Limb ischaemia

**38 A Rare Cause of Intra-abdominal Calcification: A Lithopaedion**  
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A lithopaedion or a lithopedion is an ancient Greek word meaning a stone baby. It is a rare phenomenon which occurs most commonly when a foetus dies during an ectopic or abdominal pregnancy. The chance of abdominal pregnancy is 1 in 11,000. If the dead fetus is too large to be re-absorbed by the mother's body, it becomes a foreign body to the mother's immune system. To protect from possible infection, she encases the foetus in a calciferous substance. Lithopaedion may occur from 14 weeks of gestation to full term. This paper describes a known case of this phenomenon. Lithopaedion is a term designating an ectopic pregnancy that evolves to foetal death and calcification [1]. It is a rare occurrence, its incidence being reported as 1.5 to 2.0% of all ectopic pregnancies. As a consequence, less than 300 cases have been described in the medical literature [2]. However, many reported cases of lithopaedion corresponded to cases of skeletonalisation or collections of foetal bone fragments discovered encysted in the pelvic region at surgery or autopsy [6]. It is thus estimated that true lithopaedion is a much rarer entity. If on one side, the incidence of ectopic pregnancy is raising due to an increase in pelvic inflammatory disease, tubal surgery and intra-uterine devices, on the other lithopaedion formation should become rarer since there is nowadays an easier access to improved pre-natal care with a consequent possibility of early diagnosis and treatment of patients

[1,2,4]. **Case report:** On February, 2015, Doctors of Community Based Medical College Bangladesh (CBMCB) in Mymensingh, Bangladesh removed an 8 year old stone baby from a 60 year-old woman, admitted to the emergency department with a history of diffuse abdominal pain for five days, nausea, vomiting and constipation in the last two days. She was nulliparous. X-ray abdomen revealed a foetal skeleton extending from the right hypochondrium to the right iliac fossa suggestive of lithopaedion with spine and intact ribs. Ultrasound scan of abdomen and pelvis showed a dense calcified mass throwing an acoustic shadow extending from the right hypochondrium to pelvis. It also revealed a lithopaedion. After several checkups, it was found that the patient had a lithopaedion. The calcified foetus had made it to the abdomen in the course of 8 years or more. An operation to remove the mass (14 inches and having hands, feet and head) was performed by a team comprised of surgeons. The Stone baby sounds horribly tragic, but a rare phenomenon which results from a process that protects a mother after a failed abdominal pregnancy. The condition was first described by Albucasis, a physician in 10th century AD. Fewer than 300 cases have been reported in 400 years of medical literature. The doctors of my institution have declared this as the 261st case among those. The earliest lithopaedion is one found in an archaeological excavation at Bering Sinkhole, on the Edwards Plateau in Kerr County, Texas dated to 1100 BC. Abdominal pregnancies result from rupture of a tubal or ovarian pregnancies with implantation in the abdominal cavity[2,3]. The pregnancy continues to develop in its intra-abdominal environment until foetal death, that occurred between 3 and 6 months of pregnancy in 20% of the cases, between 7 and 8 months in 27% and a full term in 43% of the cases previously reported in the literature [2,4]. Even if generically an abdominal calcified pregnancy is called a lithopaedion, three different forms can be found: true lithopaedion (43%) in which the fetus is calcified but not the ovular membranes; lithokeliphos(26%) if the membranes are infiltrated and envelop the fetus whose calcification is negligible; and lithokeliphopaedion (31%) when both the fetus and the membranes are involved in the process of calcification. The age of patients at the moment of diagnosis ranged from over 40 years old; fetal retention varied from 4 to 60 years [2,4] Lithopaedion remains a harsh reminder of poor antenatal checkup that currently prevails in the developing world. The discovery of a lithopaedion is as dramatic as it is rare. Management approach can usually be very complicated and requires a unique treatment.

**Keywords:** Lithopaedion, Abdominal pregnancy, X-ray, Ultrasound scan.

**39 Gastrochisis- A Case Report**  
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The word Gastrochisis, freely translated from the Greek, means "belly Cleft". The principal features of this rare condition are: a defect in the abdominal wall which is extra-umbilical in location with no membranous sac covering the eviscerated mass of intestines and a normal umbilical cord insertion into the abdominal wall that is not involved in the evisceration. This anomaly is believed to result secondary to an ischaemic insult to the developing abdominal wall. There is a full thickness defect that occurs secondary to incomplete closure of the lateral folds during the sixth week of gestation. Associated anomalies occur in 10-20% of cases & most of these are in the GIT. Chromosomal abnormalities or genetic syndromes are very rare. There is an increased incidence of preterm labor (30%), fetal growth restriction (70%), oligohydramnios (25%) and fetal death. A 20 years old young woman, gravidae 2, para 0+1, presented with 8½ months of amenorrhoea, per vaginal watery discharge and labor pains. She couldn't remember her last menstrual period and according to ultrasonography report, the expected date of delivery was 24/07/2016. She was on regular antenatal checkup. On examination at this hospital, her vital signs were found to be normal. Abdominal examination showed the uterus of 30-32 weeks of gestation, with the foetus in breech presentation. Uterine contractions were at a rate of 3 per 10 minutes with relaxation in between. There was no evidence of threatened rupture of the uterus. Foetal heart sounds were absent.

Vaginal examination showed the cervix to be 4 cm dilated. The patient was obliged for normal vaginal delivery but there was hand prolapse of the child. Then under spinal anesthesia and with all aseptic precautions, an emergency caesarean section was done. The uterus was relaxed by oxytocin and placenta was removed gently. A child weighing 1.8 kg was delivered. There were no sign of life of the baby. It showed a left sided Gastrochisis. Child's genitalia didn't develop fully. The post-operative course of the patient was uneventful. Gastrochisis occurs when intestines and possibly other organs are located outside the abdomen due to a hole in the foetal abdominal wall. The severity depends upon how much of the intestine and/or organs have moved through this hole. Studies world-wide have indicated that young women (under 20 years of age) are most commonly possibly affected due to lifestyle factors like smoking, recreational drug use, increase in frequency of genitourinary infections, low body mass index (BMI), all consideration with the ischaemic disruption theory. Gastrochisis is not normally associated with aneuploidies, but other associated anomalies can be found in a small percentage of babies like intestinal stenosis or atresias, Meckel's diverticulum etc. Prenatal diagnosis is based on the demonstration of a normally situated umbilicus & the herniated intestine, which would be free floating in the amniotic fluid (0.5) The misplaced abdominal contents can make it difficult for the baby to expand the lungs, leading to breathing problems. Another complication is bowel death. This occurs when intestinal tissue dies due to low blood flow or infection. Gastrochisis can be differentiated from omphalocele as it is herniation of abdominal viscera through an enlarged umbilical ring. The origin of defect is failure of the bowel to return to the body cavity from its physiological herniation during 6th week to 10th week. The viscera are covered by amnion. Omphalocele occurs in 2.5/10,000 births, whereas Gastrochisis occur 1/12,000 births. Unlike Gastrochisis, omphalocele is associated with high rate of mortality (25%) & severe malformations, such as cardiac anomalies (50%) and neural tube defects (40%). (7) In many cases, it can be visible on prenatal ultrasound scanning, which is useful because it gives time for discussion and planning for when and where to give birth. Many children with Gastrochisis are born prematurely, often at around 35 weeks as there are increased risks after this time. Generally children are born naturally (vaginal delivery) but some may need a caesarean section for other reasons. During pregnancy, there are screening tests (prenatal tests) to check for birth defects and other conditions. Gastrochisis might result in an abnormal result on a blood or serum screening test or it might be seen during an ultrasound.

**Keywords:** Gastrochisis, Para umbilical defect, Herniated organ, Intrauterine growth retardation.

**40 Reconstructive Operations of Cancer of Head and Neck Region**  
Abu Talha Bin Fokhrul, Sirajum Munira  
Sylhet MAG Osmani Medical College

Incidences of head and neck cancer includes cancers of the lip, oral cavity, tongue, larynx, pharynx, nose with paranasal sinuses, salivary glands and neck. Appearance, mastication, chewing are the main functions of head and neck. Surgery is the best option but most ablative surgery needs reconstruction. So, in this paper, we will discuss about the reconstruction operations of cancer of head and neck region in Sylhet MAG Osmani Medical College Hospital (SOMCH) and give a glimpse of work going on in this department. It was an observational study from July 2012 to June 2016 with convenience sampling. We took 30 patients of various regions of head and neck cancer in SOMCH. Data was collected by a questionnaire through face to face interviews. The results reported that among 30 patients, 10 were female and the rest were male. The age groups were 11-20, 21-30, 31-40, 41-50, 51-60, 61-70, 71-80 years. The youngest patient was 7 years old and the oldest patient was 87 years old. Longest follow up period was 3 years. All local flaps survived. One free flap had undergone total necrosis while another one had undergone partial necrosis. One patient died in post operative period owing to the lack of reliable monitoring. Reconstruction has become an integral part of the multidisciplinary care of head and neck cancers in Bangladesh. Precise

surgical techniques, avoidance of mechanical obstruction and better monitoring of buried flaps may further improve the success rate of free tissue transfer in complex head and neck reconstruction.

**Keywords:** Ablative surgery, Reconstruction, Reliable monitoring, Multidisciplinary care

**41 Multiple Enchondromas with Haemangioma-Maffucci Syndrome: A Case Report**  
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Sir Salimullah Medical College

Maffucci syndrome is a rare disease, presented with multiple enchondromatous lesions with haemangioma or lymphangioma. It was first described by Angelo Maffucci in 1881 and till now, less than 200 cases have been reported worldwide. A 20 years old man was admitted in Mitford Hospital with multiple lesions in his left hand and left foot which was diagnosed as multiple enchondroma with haemangioma. His X-ray of left foot and left hand showed multiple lobulated soft tissue swellings with phlebolith within it. On color doppler, both arterial and venous flows were seen. After evaluation of these and rising pattern of the lesion, he was later diagnosed as a case of Maffucci syndrome. Sarcomatous change in enchondromas, haemangiomas and lymphangiomas has made Maffucci syndrome a lethal disease. After surgery, recurrence rate is higher with complications like pathological fractures, bone loss, soft tissue envelopes which can cause limb deformity. Radiological investigation is the main diagnostic tool which shows calcification in enchondroma and soft tissue swellings with phlebolith within it in haemangioma. Factor causing this disease, till now, is unspecified. Different articles give information of different types of genetic mutations. Unspecified cause and lengthy treatment process without permanent cure has made this disease a clinically interesting case.

**Keywords:** Maffucci syndrome, Enchondroma, Haemangioma, Lymphangioma, Genetic mutations, X-ray

**42 Acute Poisoning: Present Perspective in Khulna Division**  
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Acute poisoning is one of the most common emergencies in tertiary medical college hospitals in Bangladesh. In spite of emergency treatments, mortality rate is still high and so improved management is mandatory. This aspect has been previously studied. Our aim was to reflect the present perspective of acute poisoning in Khulna Division. It was a descriptive analysis in the Emergency And Medicine Department of Khulna Medical College Hospital (KMCH) over the duration of 2 months and 10 days (4 June, 2016 to 14 August, 2016). The samples were selected purposively and all types of poisoning cases were included except the cases of feigned poisoning. In this study, total reported poisoning cases over the span of 2 months (Approx.) was 154. Of them, 31 (20.13%) cases were admitted due to organophosphorus compound (OPC) poisoning and 14 (9.09%) were treated for sedative abuse. Other cases included snake bite- 32 (20.78%), drug abuse- 3 (1.95%), household antiseptics (detergents, harpic, savlon, etc.) poisoning -19 (12.34%), substance (alcohol, chloroform, TCA, acid)- poisoning 5 (3.25%), unknown poisoning -38 (28.68%), others- 12 (7.78%). Most of the patients (44.8%) were in the age group of 10 to 20 years, followed by 27.27% in the age group of 21 to 30 years ; 27.92% were above 30 years. Among them, 53.24% were male and 46.78% were female. 54.5% were married and 45.45% were unmarried. 51.3% were from urban areas whereas 48.7% were from rural areas. 62% cases were suicidal, 38% were accidental and 54% homicidal. Number of deaths during the course of survey was 6 (3.9%). Of them, 50% were teenagers. The results show that, maximum cases are suicidal and most of them were teenagers; 58% were female and 42% are male. Mortality rate in this age group was also high which is a concerning outcome of this research. We also found that rural patients (48.7%) were referred to KMCH from tertiary health complexes without treatment. Again, patients from emergency department were referred to the in-patient department

without emergency management which is time consuming. Steep rise of acute poisoning, especially suicidal is of deep concern. Moreover, deficiency in the emergency management is also responsible for high mortality rate. Logistics and manpower should be increased to maximize the treatment outcome. Public awareness campaigns and counselling programs should be introduced to improve the situation.

**Keywords:** Poisoning, OPC, Sedative, Death, Teenage

**43 Outcome of External Tibial Fixator in Open Fracture Shaft of Tibia**  
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**Background & Objective:** The treatment of high-energy fractures of lower third of shaft of tibia which are associated with severe tissue injuries remains contentious and challenging. This study was done to evaluate the result of Wagner's External tibial fixator. **Materials & Methods:** Study of 17 consecutive patients was conducted who were aged between 21 and 50 years (average 34 years) and underwent external fixation for high energy tibia shaft fractures associated with severe soft tissue injury in Orthopedics department of Community Based Medical College Bangladesh (CBMCB). Injury mechanisms were motor vehicle accidents (n=10), tractor accidents (n=2) and fall from height (n=5). **Results:** mean union time was 17 weeks with range of 14 to 30 weeks. Prospective complications were found such as pin site infections (63%) and nonunion (30%). The functional outcome was evaluated by Klemm and Borner criteria. Excellent functional outcome was observed in 80%, good in 15% and fair in 5% cases. **Conclusion:** After treating by external fixator technique and 1 year follow up, complete union is achieved almost invariably.

**Keywords:** External Fixator, Fracture, Tibia