63. **NEUTROPHIL-LYMPHOCYTE RATIO AND ITS ASSOCIATION WITH HYPERGLYCAEMIA: A CROSS SECTIONAL STUDY.**

Shailendra Dandge[1], B. Pooja Shivani[2].

[1] MD, Professor, Department of Pharmacology, SHARE INDIA-MediCiti Institute of Medical Sciences, India.

[2] MBBS, Final year MBBS student, MediCiti Institute of Medical Sciences, India.

INTRODUCTION: Chronic subclinical inflammation indicated by an elevated neutrophil-lymphocyte ratio (NLR) calculated from a complete blood count (CBC) test is reported to be associated with hyperglycaemia, including prediabetes and type 2 diabetes mellitus(T2DM). Current evidence on the association between NLR and glycaemic status is limited and conflicting. **AIM:** To determine if NLR was higher in those with prediabetes compared to those with normoglycemia, and To compare the NLR among individuals on treatment for T2DM stratified by glycaemic control. **METHODS:** We analysed hospital data of individuals attending a tertiary care hospital in south India between January, 2021 and December, 2021. Individuals had CBC and glycosylated haemoglobin (HbA1c) tests done at the same visit. Hospital records of only those individuals without any clinical features of inflammation at the time of hospital visit were included in this analysis. Normoglycemia and prediabetes were defined as HbA1c < 5.7% and HbA1c ≥5.7 but ≤6.4% respectively, in those without a history of T2DM. Good glycaemic control and poor glycaemic control were defined as HbA1c<7% and HbA1c ≥7 respectively in those on treatment for T2DM.CBC and HbA1c data of 109 individuals each with normoglycemia and prediabetes; and 373 individuals on treatment for T2DM were analysed. After confirming the normality of distribution of NLR, unpaired Student's 't' test was used: 1. to compare the NLR between those with normoglycemia and prediabetes and 2. to compare NLR among those on treatment for T2DM stratified by glycaemic control. **RESULTS:** Demographic characteristics including mean age and sex ratio among individuals with and without prediabetes were similar. The Mean (SD) NLR was higher in those with prediabetes compared to those with normoglycemia 1.7(1.0) versus 1.4(0.3); p=0.002. Of the 373 individuals on treatment for T2DM,121(32.4%) had good glycaemic control. There were no differences in demographic characteristics of those with and without good glycaemic control. The mean (SD) NLR between those with and without good glycaemic control, respectively was not different; 1.6(0.1) versus 1.7(0.1); p=0.46. **CONCLUSION**: In individuals without any clinical features of inflammation, a higher neutrophil-lymphocyte ratio was associated with prediabetes. However, there was no association between neutrophil-lymphocyte ratio and glycaemic control among those on treatment for T2DM.

Table. General Characteristics of the Study Participants.

Characteristic (n=247)	
Age In Years, Mean (SD)	30.6 (15.8)
Male (%)	111 (44.9)
Female(%)	136 (55.1)
Urban (%)	183 (73.9)
Semi-urban (%)	42 (17.1)
Rural (%)	22 (9.0)
Necessity of visiting a hospital on a scale from 1 to 5 n(%)	**N = 93**
1	11 (11.8%)
2	11 (11.8%)
3	36 (38.7%)
4	22 (23.7%)
5	13 (14.0%)

Key words: Neutrophil-lymphocyte Ratio; Prediabetes; Type 2 diabetes mellitus, Glycaemic control.