

60. **PREVALENCE OF INTESTINAL COCCIDIA: FIRST DESCRIPTION OF CYCLOSPORIDIOSIS ASSOCIATED WITH DIARRHEA IN CHILDREN IN COLOMBIA.**

Maria Camila Cortes Montoya¹, Humberto Alejandro Nati Castillo², Jessica Triviño², Ana Sofia Orozco Cano¹, Simon Gonzales Naranjo¹, Juan Felipe Caicedo Olaya¹, Juan Francisco Amaya Amezquita¹, Karen Sofía Ayala Girón¹, Laura Losada¹, Davidshon Steven Montes¹, Yimmi Pinto Valencia¹, Marcela Fama Pereira¹, Nancy Yhomara Cabeza¹, Fabiana Lora Suarez¹, Jorge Enrique Gómez Marín¹.

¹ Third-year Medical Student. University of Quindío, Armenia, Quindío, Colombia. GEPAMOL research group, Biomedical Science Research Center, Faculty of Health Science, University of Quindío.

² MD. GEPAMOL research group, Biomedical Science Research Center, Faculty of Health Science, University of Quindío.

INTRODUCTION: In Colombia, the studies about the etiology of acute diarrhea disease (ADD) in children by using standard stool culture techniques methods and DNA detection tools for intestinal virus show that viral origin was the most frequent, however still between 16 to 45% of the cases of unknown etiology. Specific staining techniques or high sensitivity molecular methods for the intestinal coccidia *Cryptosporidium sp* and *Cyclospora sp* have been not applied in the Colombian studies, for this reason, the current situation of these intestinal coccidia in Colombia as cause of diarrhea is unknown. **OBJECTIVE:** To estimate the frequency of *Cryptosporidium sp.* and *Cyclospora sp.* and to analyze the association between infection and clinical manifestations on children with acute diarrhea consulting the pediatrics emergency service of a third level Hospital. **METHODS:** An observational descriptive study was performed in 150 children that consulted the emergency service at the Hospital San Juan de Dios in Armenia, Colombia, in the period between April 1st and May 31st of 2022. We applied questionnaires and collected primary data from clinical records of children, as well as stool samples of each child after receiving informed consent from the parents and/or legal guardian of the minors. To identify the pathogenic intestinal coccidia (*Cryptosporidium sp.* and *Cyclospora sp.*), we used stool fresh preparations with 1% iodine and stained by a modified Ziehl Nielsen coloration protocol (Kinyoun stain). Samples were examined by expert microbiologists on a light microscope with a 40x objective. Prevalence and odds ratios were estimated. For statistical analysis differences in proportions among groups were compared via the X2 test and Fisher exact test. For non-parametric data, differences of means between two groups were analyzed through a Kruskal-Wallis test. Differences of medians were analyzed via Kruskal-Wallis test for non-parametric variables and analysis of variance (ANOVA) for parametric variables; statistical significance was considered when $p \leq 0.05$. Statistical calculations were made by using software factors in Epi Info 7.2 Epi-Info version 3.5.1 (CDC, Atlanta). **RESULTS:** The prevalence of infection in the children that went to the urgency service was of 19.7% by *Cryptosporidium sp.* and 10.9% by *Cyclospora sp.* The 59.2% of children with cryptosporidiosis and 66.6% of children with cyclosporidiosis were hospitalized. There was a statistically significant association between the presence of parasite in stools and fever in cyclosporidiosis (93.3% of children with cyclosporidiosis vs. 56% by other causes, OR 10.7 IC95% 1.3-84; $p= 0.004$). **CONCLUSION:** The study results indicate the need to use specific diagnostic techniques to identify *Cryptosporidium sp* and *Cyclospora sp* in children with diarrhea, because they are frequent and are treatable with specific antiparasitic medication. We recommend that its search should be done systematically.

Table. Sociodemographic, Clinical and Qualitative Laboratory Characteristics and the Analysis of Their Association with the Presence of *Cryptosporidium sp.* and *Cyclospora sp.* Detected by Kinyoun Staining in Stool Samples from Children Compared to Children with Negative Tests who Consulted the Emergency Department of the San Juan de Dios Hospital in Armenia (Quindío, Colombia) in the Period from April to May 2022.

Characteristics	n/N (%) in children with (+) tests vs. children with (-) tests for <i>Cryptosporidium</i> in stools	OR (95% CI)	p	n/N (%) in children with (+) tests vs. children with (-) tests for <i>Cyclospora</i> sp in stools	OR (95% CI)	p
Contributory vs. subsidized	16/31 (51.6%) vs. 62/119 (52.1%)	1.0 (0.4-2.2)	1.0	7/15 (46.6%) vs. 65/135 (48.1%)	0.9 (0.3-2.7)	1.0
Male vs. Female	15/31 (48.3%) vs. 81/119 (68%)	0.43 (0.1-0.9)	0.057	15/31 (48.3%) vs. 81/119 (68%)	0.43 (0.1-0.9)	0.057
Urban vs. Rural	31/31 (100%) vs. 114/119 (95.8%)	Indefinido	0.58	15/15 (100%) vs. 130/135 (96.3%)	Indefinido	1.0
Dehydration grade II or III at the time of consultation vs. No dehydration or grade I	14/31 (45.1%) vs. 40/119 (33.6%)	1.6 (0.7-3.6)	0.29	5/15 (33.3%) vs. 49/135 (36.3%)	0.8 (0.2-2.7)	1.0
Abdominal pain	11/31 (35.4%) vs. 44/119 (36.9%)	0.9 (0.4-2.1)	1.0	6/15 (40%) vs. 49/135 (36.3%)	1.1 (0.3-3.4)	0.7
Fever	21/31 (67.7%) vs. 72/119 (60.5%)	1.3 (0.5-3.1)	0.53	14/15 (93.3%) vs. 79/135 (58.5%)	9.9 (1.2-77.6)	0.0096
Vomit	13/31 (41.9%) vs. 66/119 (55.4%)	0.5 (0.2-1.2)	0.22	5/15 (33.3%) vs. 74/135 (54.8%)	0.4 (0.1-1.2)	0.17
Hospitalized	20/31 (64.5%) vs. 66/119 (55.4%)	1.4 (0.6-3.3)	0.41	7/15 (46.6%) vs. 79/135 (58.5%)	0.6 (0.2-1.8)	0.41
<i>Cryptosporidium</i> (+) vs. <i>Cyclospora</i> (+)	2/31 (6.4%) vs. 13/119 (10.9%)	0.5 (0.1-2.6)	0.73			
Increased bacterial flora	16/30 (53.3%) vs. 61/116 (52.5%)	1.0 (0.4-2.3)	1.0	10/15 (66.6%) vs. 67/131 (51.1%)	1.9 (0.6-5.8)	0.28
Yeasts	12/23 (52%) vs. 27/96 (28.1%)	2.7 (1-7)	0.045	5/14 (35.7%) vs. 34/105 (32.3%)	1.1 (0.3-3.7)	0.77
Mucus in stool	10/31 (32.2%) vs. 35/119 (29.4%)	1.1 (0.4-2.6)	0.37	6/15 (40%) vs. 54/133 (40.6%)	0.9 (0.3-2.8)	1.0
Blood in stool	8/31 (25.8%) vs. 23/119 (19.3%)	1.4 (0.5-3.6)	0.45	4/15 (26.6%) vs. 27/135 (20%)	1.4 (0.4-4.9)	0.51
Leucocytes in stool	11/30 (36.6%) vs. 56/118 (47.4%)	0.6 (0.2-1.4)	0.31	11/30 (36.6%) vs. 56/118 (47.4%)	0.6 (0.2-1.4)	0.31

Key words: Diarrhea; Colombia; Cryptosporidiosis; Cyclosporidiosis; Pediatrics.