



**ROLE OF ABSOLUTE EOSINOPHIL COUNT AS A MODALITY OF INVESTIGATION IN SUSPECTED CASES OF HELMINTHIC INFESTATION IN CHILDREN AGED BETWEEN 5 TO 15 YEARS WITH COMPARISON TO STOOL ROUTINE AND MICROSCOPY**

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**ABSTRACT**

**Introduction:** Eosinophilia is a well-known host immune response in helminthic infestation. This study was carried out to investigate whether a correlation exists between absolute eosinophil count in children with stool specimen positive for helminthic infestation.

**Aim And Objective:** To determine average raised absolute eosinophil count in children who were having various helminthic infestation with stool specimen positive.

**Materials And Methods:** A hospital based cross sectional study done at Navodaya medical college hospital and research centre during 2019 October to 2020 September for a period of 12 months. Both blood and stool samples were obtained from a total of 69 suspected children after examined, categorised into 2 groups. Among them 24 cases were positive of helminthic infestation and 45 cases were negative. T-test and descriptive statistics were used to analyse the data.

**Results:** The study revealed that children infested with helminths found to have higher absolute eosinophil count (mean 4644/ $\mu$ l (95%CI; 3474-4212) than not infested (mean 801/ $\mu$ l (95%CI; 616-945) with p value <0.001. In this helminth's family; nematodes, trematodes, cestodes showed mean values of absolute eosinophil count were 5206/ $\mu$ l (4806-7151/ $\mu$ l), 4930/ $\mu$ l (4500-5382/ $\mu$ l) and 2179/ $\mu$ l (2500-1669/ $\mu$ l) respectively.

**Conclusions:** Raised absolute eosinophil count has been observed in stool specimen positive cases of helminths, especially more in nematodes. Therefore, should be considered for a single dose of albendazole.

**KEYWORDS :** Absolute eosinophil count, Helminths, Infestation, Stool specimen.

**INTRODUCTION**

Host immune system produces eosinophils in response to helminthic infestation [1]. it is also a known fact that eosinophilia occurs in variety of other conditions,[2] but in parasitic infestation raise of eosinophil count is proportionally higher [3]. This knowledge suggests that, raised absolute eosinophilic count can be used as a modality of investigation where trained personnel are not available for investigation of stool routine microscopy to confirm the presence of parasitic larvae, ova or adult forms.[4]

**AIM AND OBJECTIVE**

To determine the average absolute eosinophil count in children who were having various helminthic infestations with stool specimen positive.[5]

**Inclusion Criteria:**

Children who are aged between 5 to 15 years and presented with signs and symptoms of parasitic infestation.

**Exclusion Criteria:**

Children who are known to have allergies, Asthma, Atopic dermatitis (eczema), Cancer, Crohn's disease, collagen vascular diseases and associated respiratory conditions.

**MATERIALS AND METHODS**

This study was carried out at Navodaya medical college hospital and research centre for the duration of 1 year between 2019 October to 2020 September. Blood samples were obtained and evaluated by DxH 800 cellular analysis system [6] and also fresh faecal specimens of approximately large teaspoon amount or about 10 ml of liquid stool samples collected and examined within 1 hour [7]. T-test and descriptive statistics were used to analyse and interpret the data.

**RESULTS**

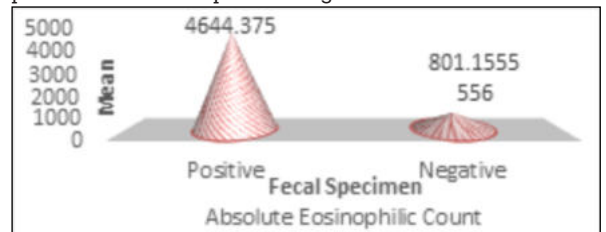
Based on the findings a total of 69 suspected children were categorized in to 2 groups. Among them 24 cases were positive of helminthic infestation and 45 cases were negative.

**Table 1**

Fecal Specimen		Absolute Eosinophilic Count		
Result	Number	Mean	Std. Deviation	
Positive	24	4644.375	1240.939	
Negative	45	801.1556	101.7443	
" t " Test	95% Confidence Interval of the Difference		P Value*	
	Lower	Upper		
	20.779	3474.05	4212.39	0.000 < 0.001

\*P value <0.05 is significant

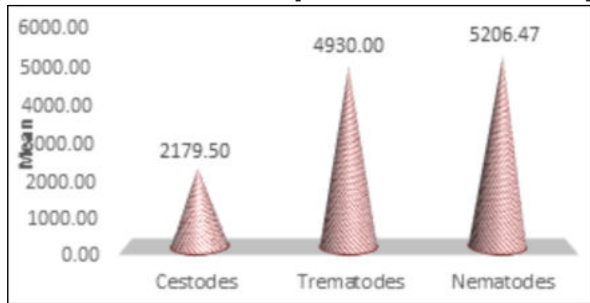
Table 1 shows Absolute eosinophil count in faecal specimen positive children compared to negative.



**Table 2**

Helminths	N	Absolute Eosinophilic Count			
		Min	Max	Mean	SD
Cestodes	4	1669	2500	2179.5	357.11
Trematodes	5	4500	5382	4930	378.3
Nematodes	15	4806	7151	5206.47	598.44

Table 2 shows absolute eosinophilic count in helminthic family



## DISCUSSION

Out of 69 suspected children 24 of them had stool specimen positive for helminthic infestation, among which it is found that absolute eosinophilic count proportionally elevated with mean value of 4644.375 cells/microlitre. Among the helminths, nematodes showed greater proportion of raised AEC. Jiero *et al* study showed similar results [8].

## CONCLUSIONS

Other than helminthic infestations, absolute eosinophilic count elevation can be seen in various other conditions but in less proportion compared to helminthic infestation. Therefore, in suspected cases a single dose of albendazole should be considered. But this study is limited due to small sample size and there is no defined cut off criteria established for raised absolute eosinophil count.

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