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RESEARCH ARTICLE
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PARASITIC INFECTION AMONG CHILDREN LESS THAN 5 YEARS IN RURAL POPULATION OF EASTERN UTTAR PRADESH

Chandrim Sengupta[1*], Sarver Jahan[2], Shreya Singh[3]

[1*]Assciate Professor, Department of Microbiology, Dr. KNS Memorial Institute of Medical Sciences, Ayodhya Road, Barabanki, Uttar Pradesh
[2]Associate Professor, Department of Microbiology, Prasad Institute of Medical Sciences, Banthara, Kanpur Road, Lucknow, Uttar Pradesh
[3]MBBS (Intern), Dr. KNS Memorial Institute of Medical Sciences, Ayodhya Road, Barabanki, Uttar Pradesh

***Corresponding author:** Chandrim Sengupta
*Assciate Professor, Department of Microbiology, Dr. KNS Memorial Institute of Medical Sciences, Ayodhya Road, Barabanki, Uttar Pradesh

Introduction

Parasitic infections affect around 3.5 billion people worldwide hence one of the most common causes of infectious disease. They cause health problem ranging from abdominal pain, diarrhoea, general malaise and weakness along with impaired growth. [1,2,3] An approximately two lakh deaths are reported each year due to intestinal parasitic infection. [4] Infections like giardiasis, ascariasis, amoebiasis, hookworm infection, and trichuriasis are the commonest infections that leads to iron-deficiency anaemia, chronic diarrhoea, seizures, portal hypertension, and impaired physical development in children along with other comorbidities [5,6] The magnitude of the parasitic infection among children needs to be carefully monitored. There have been multiple studies regarding parasitic infection among school going children but limited data is involved in children less than 5 years specially in rural area. This study was performed to identify the spectrum of intestinal parasitic infection in children less than 5 years in the rural population of eastern Uttar Pradesh.

Materials and Methods

The study was carried out in the Barabanki district, situated in eastern Uttar Pradesh. Children less than 5 years of age visiting the IPD/OPD of Dr KNS Memorial Institute of Medical Sciences with diarrhoea/acute gastroenteritis were included in the study.

1. Inclusion and exclusion criteria

Inclusion criteria: Children under 5 years with acute gastroenteritis, diarrhoea and dysentery were included in the study.

Exclusion criteria: Children under five years whose parents did not accept to participate were excluded from the study

Institutional Ethical Committee approval was taken before initiating the study.

A total of 261 samples were collected for the study.

2. Sample collection

Patients were provided with a universal container which was properly labelled for

collection of samples. They were asked to collect around 5 grams of solid stool or 10ml if the consistency of the stool was liquid. The stool samples hence collected were examined within 1-2 hours of collection.

3. Microbiological examination

Each stool specimen was examined by the following techniques.

Macroscopic examination

The colour, consistency, presence of blood and mucus were observed.

Direct microscopic examination by using saline and iodine preparations

On a 1mm thick microscopic slide, a small amount of stool sample was emulsified in 1 - 2 drops of Normal saline (to demonstrate helminthic egg and larvae, motile trophozoites of intestinal protozoa) and Lugol s iodine solution (to demonstrate protozoan cysts). A cover slip was placed on the top ensuring the preparation to free of air bubbles and macroscopic debris.

The sample which was negative for direct microscopic method of saline and iodine mount was further processed using Formol ether concentration method.

Result

1. Out of 261 stool samples collected, the number of males were 157 (60.2%) and females were 104 (39.8%).
2. Majority of the patients i.e. 189 (72.4%) were OPD whereas 72 (27.6%) children were IPD.
3. Out of 261 samples, parasite was found in 44 (16.9%) of the patients.
4. Out of the 44 samples positive for intestinal parasite, the number of boys were 26 (59.1%) and girls were 18 (40.9%).
5. Majority of the infection out of the 44 positive samples was caused by Entamoeba hystolytica which constituted of 21 (44.7%) patients followed by Giardia which was 17(38.7%) in number. Eggs of Taenia and Ascaris were seen in 3 (6.8% each) of the samples.

Conclusion

Protozoal infections were seen to be higher as compared to helminthic infections in the present study group. Intestinal parasites serve as an indicators of the socioeconomic as well as sanitation conditions of a population. The study will help in identifying the burden of parasitic infection among children less than 5 years as such data is not available in this part of the country.

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