



## OCCURRENCE OF INTESTINAL PARASITES IN PAEDIATRIC AGE GROUP AMONG PATIENTS TMMC & RC IN MORADABAD

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Article Received on 23/08/2017

Article Revised on 12/09/2017

Article Accepted on 01/10/2017

### ABSTRACT

**Introduction:** The burden of intestinal parasitic infection varies in different region of the country. In developing countries like india, such infections are major health problem specially affecting school going children, approximately 3.5 billion people are infected by intestinal parasites. For these various programe run by government organizing to control these parasitic infection. Studies have demonstrated a common relationship between parasitic infections and lower socioeconomic status of the region. Low socioeconomic conditions, lack of access to potable drinking water, poor personal hygiene and environmental sanitation are the factors associated with intestinal parasitic infection. These infections can cause iron deficiency anemia & growth retardation in children. **Objective:** To study the occurrence of intestinal parasites among paediatric age group patients. **Material & Methods:** The study was performed in parasitology section of department of microbiology TMMC & RC Moradabad on 50 clinically suspected cases of intestinal parasitic infection, between Sep. 2016 to feb 2017. Stool samples were collected and examined by standard parasitological examination including saline amount and iodine preparation along with stool concentration method (Saturated salt solution & Formalin ether) in microscopy negative cases. **Result:** Out of 50 stool sample 20 samples were positive for intestinal parasite in which egg of Taenia species (45%) was most common among all followed by egg of Hook worm(35%), Trichuris trichiura(10%), Giardia lamblia(5%) & Strongyloides stercoralis(5%). **Conclusion:** In our study most of population come from rural area and has low socioeconomic status with poor hygiene in which leads to faeco-oral contamination, as a result there are infestation of intestinal parasites.

**KEYWORDS:** Intestinal parasites, paediatric age group.

### INTRODUCTION

- Intestinal parasitic infections are the most common infections in the world, and are responsible for considerable morbidity and mortality. It is estimated that 3.5 billion people are effected globally and 450 million are ill as a result of these infections, the majority being children.<sup>[1]</sup> Sympathetic climatic, environmental and sociocultural factors enhancing parasitic transmissions. These parasites dwell in the gastrointestinal tract in humans. In urbanized countries, protozoan parasites commonly cause gastrointestinal infections.<sup>[2]</sup>
- The epidemiology of intestinal parasitic infections shows that these parasites are found in every age group and in both sexes.<sup>[3]</sup> two epidemiological factors distinguish parasitic diseases from other infections. the first factor is high prevalence of these infections, the second factor is high rate of incidence in poor and disadvantaged communities which specially seen in school going children.<sup>[4]</sup>
- In addition, poverty, malnutrition, high population density, the unavailability of potable water, low health status and a lack of personal hygiene provide optimal conditions for the growth and transmission of intestinal parasites. as india is considered a developing country, intestinal parasitic infections are a major health issue. epidemiologic surveys of these infections are important because the reflect the sanitary conditions of the community and provide basic data for the control of future infections.<sup>[5]</sup> Intestinal parasitic infections are more common in children and leads to nutritional deficiency, anemia, growth retardation and impaired learning ability.<sup>[6]</sup>
- The most common parasite causing infections globally are *Ascaris lumbricoides* (20%), *Hookworm* (18%), *Trichuris trichiura* (10%) and *Entamoeba histolytica* (10%).<sup>[7]</sup> Poor sanitation, potable drinking water and substandard personal hygiene practices may contribute to the rapid spread of such types of infections. With increasing population, poor socioeconomic conditions, continuous urbanization and industrialization with unplanned reforestation

and the climatic changes may be the various reasons for the emergence of previously unrecognized diseases.<sup>[8]</sup>

- World health organization control strategy involves regular deworming of preschool and school age children. Periodic treatment reduces the intensity of infection and protects those already infected.<sup>[9]</sup> Stool analysis is a common laboratory test used for screening of parasites in cases of diarrhea and other gastrointestinal disorders. sometimes the test is used to confirm the presence of specific parasites related to a specific clinical condition.<sup>[10]</sup>

## MATERIAL AND METHODS

**Study area:** This study is conducted in parasitology section of department of microbiology at TMMC & RC mooradabad on 50 clinically suspected cases of intestinal parasitic infection.

**Study Design:** the study was conducted between september. 2016 to february 2017. Subjects were children aged less than 12 years old who underwent stool examination. Verbal informed consent was obtained from each individual before the study. Name, age, sex, education and nutrition status detail etc.

**Collection of sample:** stool samples were collected in labeled clean, dry, wide mouthed, leak proof and sterile 50 ml capacity plastic container with wooden scoop.<sup>[11]</sup>

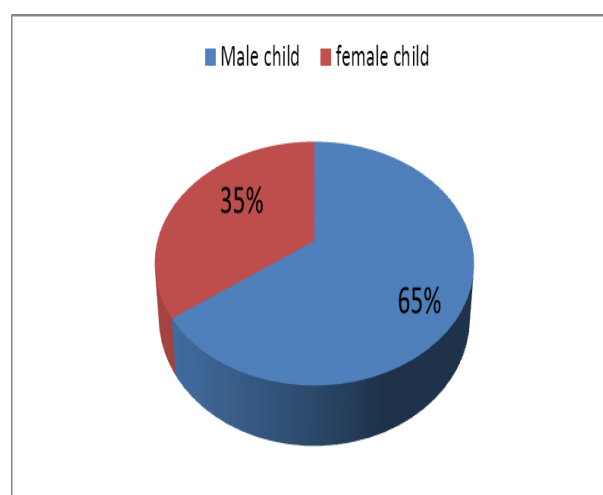
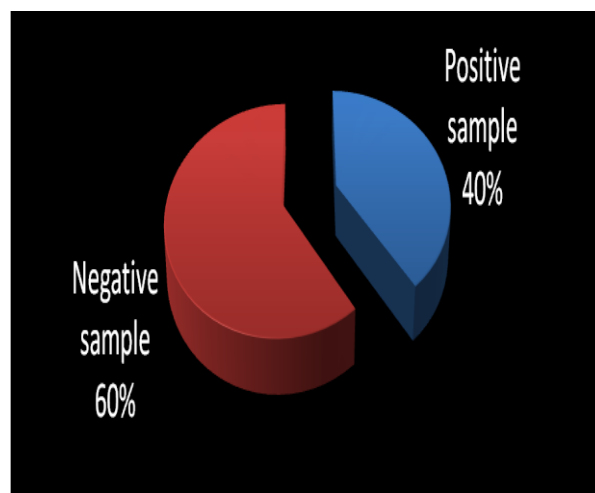
**Macroscopic examination:** the stool sample were examined for the presence of mucus, blood and any segments or adult worm.

**Direct microscopic examination:** A drop of normal saline was placed at the centre of one slide and a drop of lugol's iodine on same slide for detection of protozoan trophozoites, ova and cysts. About 1-2 mg or pea sized stool sample was taken and emulsified in saline and iodine using an applicator stick. A thin film was prepared on slide by mixing the stool sample with a drop of normal saline or lugol's iodine solution. A coverslip was then placed on each preparation and the slide was scanned under 10x and 40x objective lenses of a light microscope.<sup>[12]</sup>

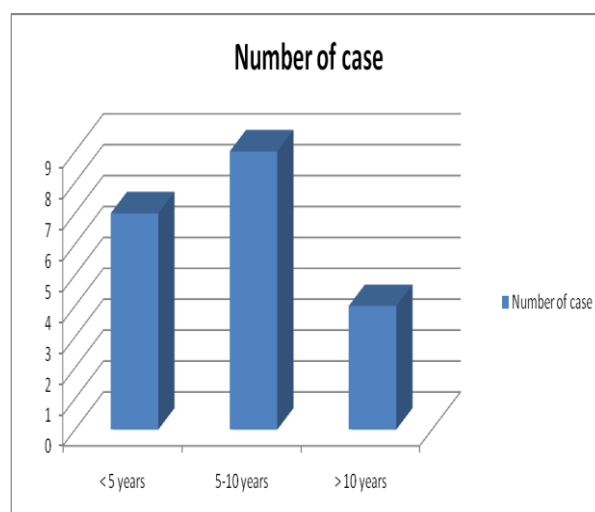
**Formol- ether concentration:** Negative sample were re-examined by concentration technique like formalin ether method and saturated salt solution technique in which the protozoan cyst and worm ovum are sought in larger amount of stool.<sup>[13]</sup>

## RESULT

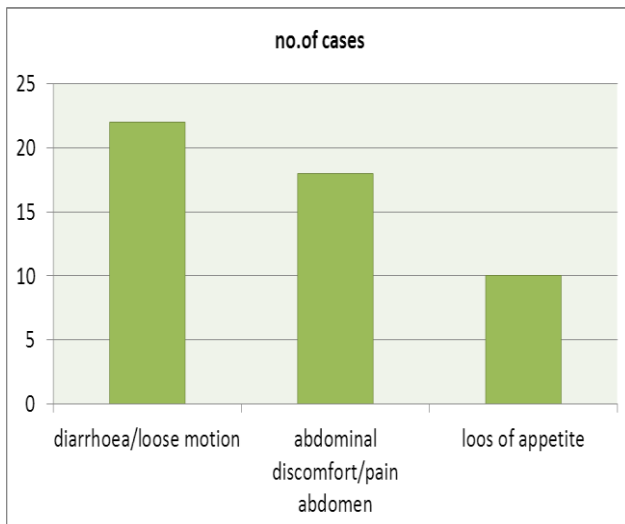
A total of 50 stool sample were included in present study, out of which 20(40%) were positive for intestinal infections. Peak incidence was observed during the month of september and october while months november to february showed minimum incidence.



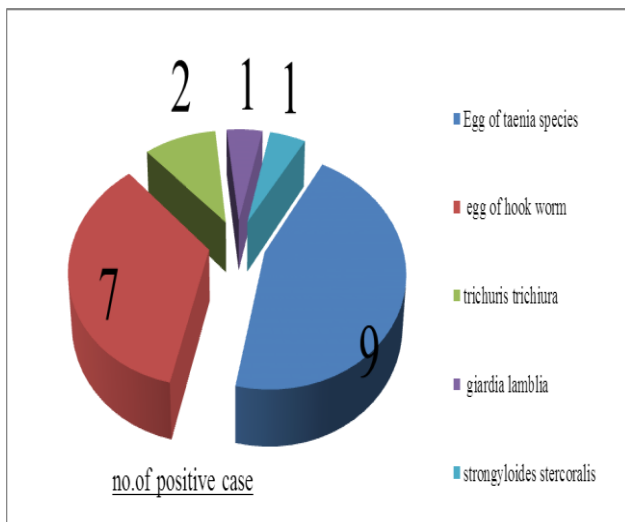
The infection was more in male child 13 (65%) then of female child 7 (35%)



The infection was more prominent in the <5 years age group accounting for 7 (35%) cases, followed by the 5-10 years age group which accounted for 9 (45%) cases and >10 years age group which accounted for 4 (20%).



Diarrhoea/loose motion (n=22, 44%) was the most common symptom followed by abdominal discomfort/pain abdomen (n=18, 36%), loss of appetite (n=10, 20%).



The overall occurrence of intestinal parasite infections are 20 (40%) in which egg of *taenia* species 9 (45%) was most common among all followed by egg of *hook worm* 7 (35%), *trichuris trichiura* 2 (10%), *giardia lamblia* 1 (5%) & *strongyloides stercoralis* 1 (5%).

## DISCUSSION

Intestinal parasitic infection are the major cause of morbidity and mortality (in pediatric patient) in developing countries like india. Various studies from rural, urban and semiurban region have shown different prevalence rate ranging from 6.63% to 46.7%.

But in india few study reported prevalence higher than our study this might be due to improper waste disposal, unsafe water supply, seasonal and geographic variation.<sup>[14]</sup>

In this study the overall prevalence of intestinal parasites are 20/50 (40%), which was much higher than the previous studies conducted in different parts of india; haryana (7.8%) by beena jad et al., South gujarat (5.56%)

by mandakini M patel et al.<sup>[14,15]</sup>

Worldwide high prevalence rates were reported from developing countries such as southern india where the overall period prevalence of intestinal parasites was 97.4%.<sup>[16]</sup>

The most common parasite encountered in present study was *taenia* species (45%) followed by *hookworm* (35%). In india different studies showed different prevalence rate, ryan et al. Showed higher prevalence of *E. Coli* (25.3%) followed by *giardia lamblia* (17.9%), mandakini et al. Showed higher prevalence of *giardia lamblia* (28.99%) followed by *H. Nana* (20.29%).<sup>[15,17]</sup>

The same result was also reported by omar hassan amer et al.<sup>[18]</sup>

## CONCLUSION

The present study showed high prevalence of intestinal parasites which suggest that is due to improper sanitary particles, personal hygiene, unsafe drinking water and health awareness. Integrated drug treatment and hygiene education is required in children and their parents.

This study, confirms sanitation programmes as a valid measure to reduce the prevalence of intestinal parasites especially soil transmitted helminths.

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