

Original article

“Prevalence of intestinal parasitic infections in patients with diarrhea of a teaching hospital”

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Abstract:

Objectives: Intestinal parasitic diseases constitute a global health burden in numerous developing countries mainly due to fecal contamination of water and food. To assess the prevalence of intestinal parasites in patients with diarrhea of a teaching hospital.

Materials & Methods The records of 720 stool samples from routine stool examination carried out during the study period from the same number of patients complaining of diarrhea and pain abdomen. Microscopic examination was performed by wet mount preparations and after the concentration of stool samples by formol-ether concentration technique. Modified Ziehl-Neelsen (ZN) staining was also performed in seropositive patients on clinician's request.

Results : In our study the prevalence of intestinal parasitic infection is 112(15.5%). Age group 30-40 were infected with one or more intestinal parasites. The most common parasites identified were *E.histolytica* Giardia lamblia , E.Coli. , H.nana, *A.lumbricoides*, *Ancylostoma duodenale*, Taenia species and cryptosporidium parvum and mixed infection of *E.histolytica* and *A.lumbricoides* *A.lumbricoides* and *Taenia spp.* were also found.

Conclusion: In this study Protozoan infection are more common than Helminths as it is an important public health problem, data on the prevalence of parasites in a given region are fundamental in planning any rational control or eradication programme for parasites in human populations.

Key words: Prevalence, intestinal , parasite

Introduction

Intestinal helminths and protozoan parasites are major public health problems in developing countries. These infections have common characteristics - they are highly endemic in populations with low socio-economic status and poor hygiene, favouring larval skin penetration and oral-faecal transmission. Intestinal parasitic infestation represents a large and serious medical and public health problem in developing countries. It is estimated that some 3.5 billion people are affected, and that 450 million are ill as a result of these infections. Human intestinal parasitic infections are among the most common infections in the world and are responsible for considerable morbidity and mortality [1].

Apart from causing mortality and morbidity, infection with intestinal parasites has been associated with malnutrition, stunting of linear growth, mental function, verbal ability, physical weakness and low educational achievement in school children [2]. Furthermore, chronic intestinal parasitic infections have become the subject of speculation and investigation in relation to the spreading and severity of other infectious diseases of viral origin, tuberculosis and malaria [3].

Materials & methods

It is a retrospective study conducted in the Department of Microbiology, from January to December 2016 at the Department of Microbiology Rama Medical College Hospital & Research centre, Kanpur. The records of 720 stool samples from routine stool examination carried out during the study period from the same number of patients complaining of diarrhea and pain abdomen received from various OPD's and IPD's of the hospital were analyzed. Microscopic examination was performed by wet mount preparations and after the concentration of stool samples by formol-ether concentration technique. Modified Ziehl-Neelsen (ZN) staining was also performed in seropositive patients on clinician's request.

Results : In our study the prevalence of intestinal parasitic infection is 112(15.5%). Age group 30-40 were infected with one or more intestinal parasites. The most common parasites identified

were *E.histolytica* (35.71%), *Giardia lamblia* (8.9%), *E.Coli*(22.32%), *H.nana*(14.28%), *A.lumbricoides*(9.8%), *Ancylostoma duodenale*(3.57%%), *Taenia species*(4.46%) and *cryptosporidium parvum* (1.78%) and mixed infection of *E.histolytica* and *A.lumbricoides* (2.8%), *A.lumbricoides* and *Taenia spp.* (4.7%) were also found.

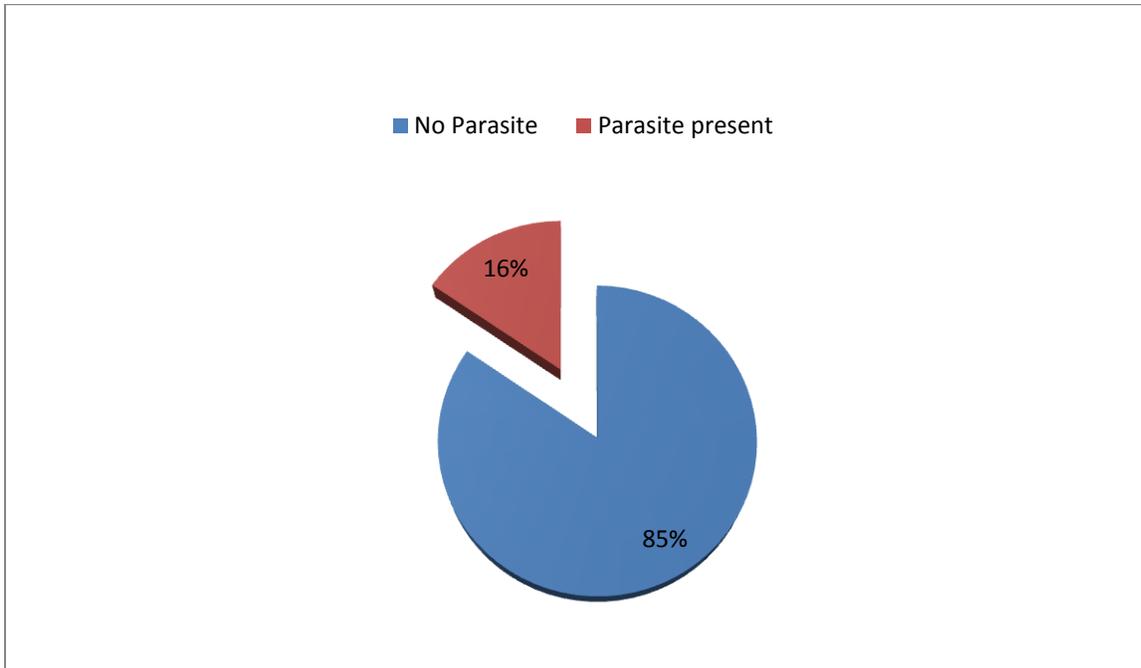


Fig 1: Prevalence of intestinal parasite

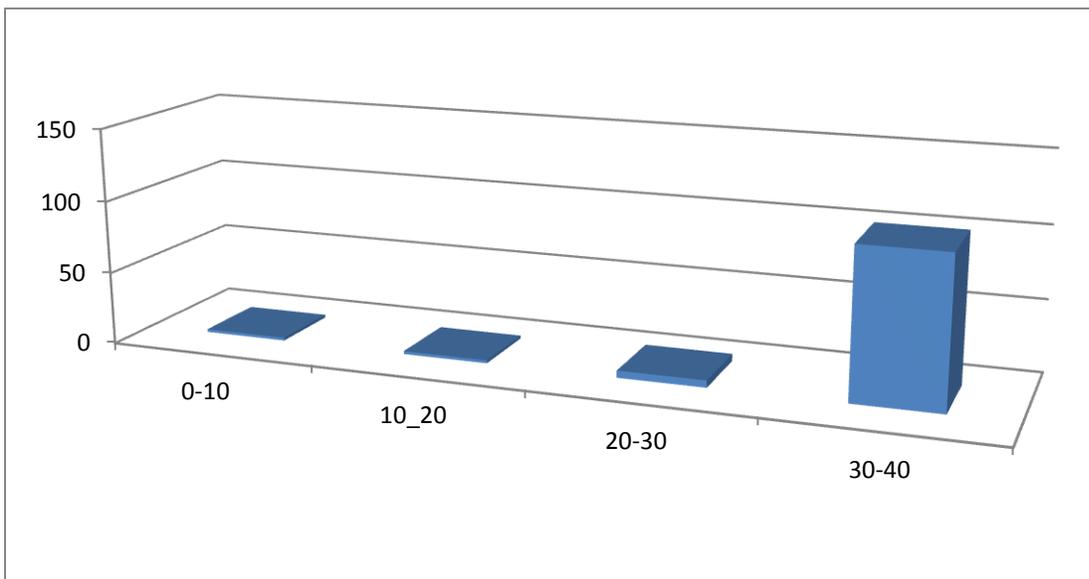


Fig 2: Age wise distribution of intestinal parasites detected in stool samples

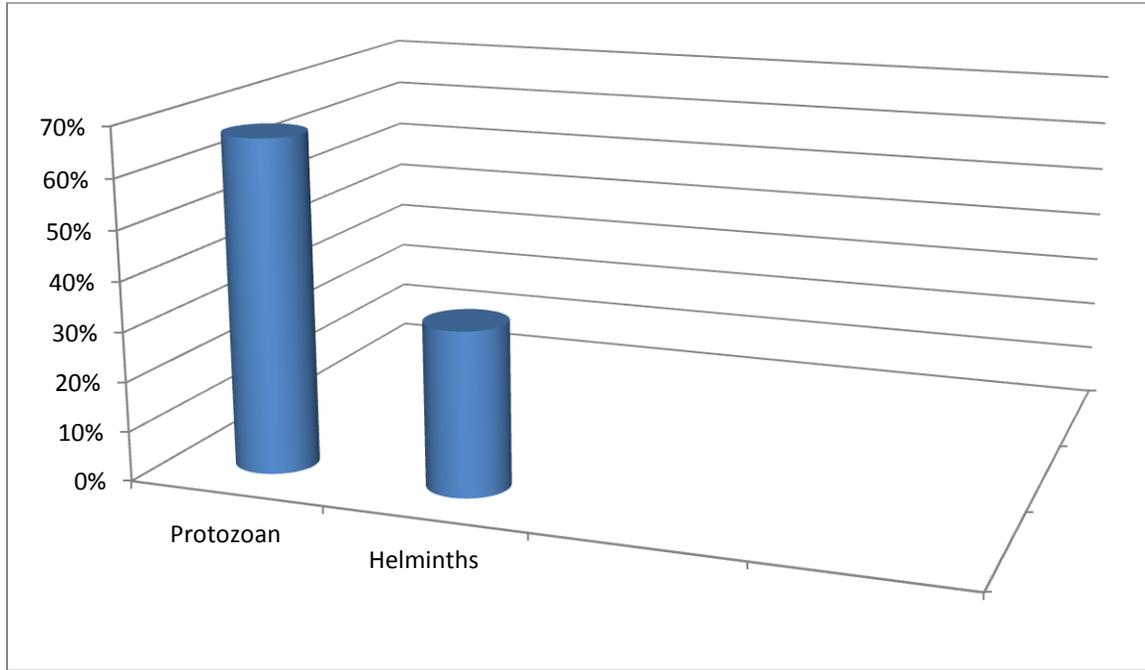


Fig 3: Percentage of protozoans and helminths

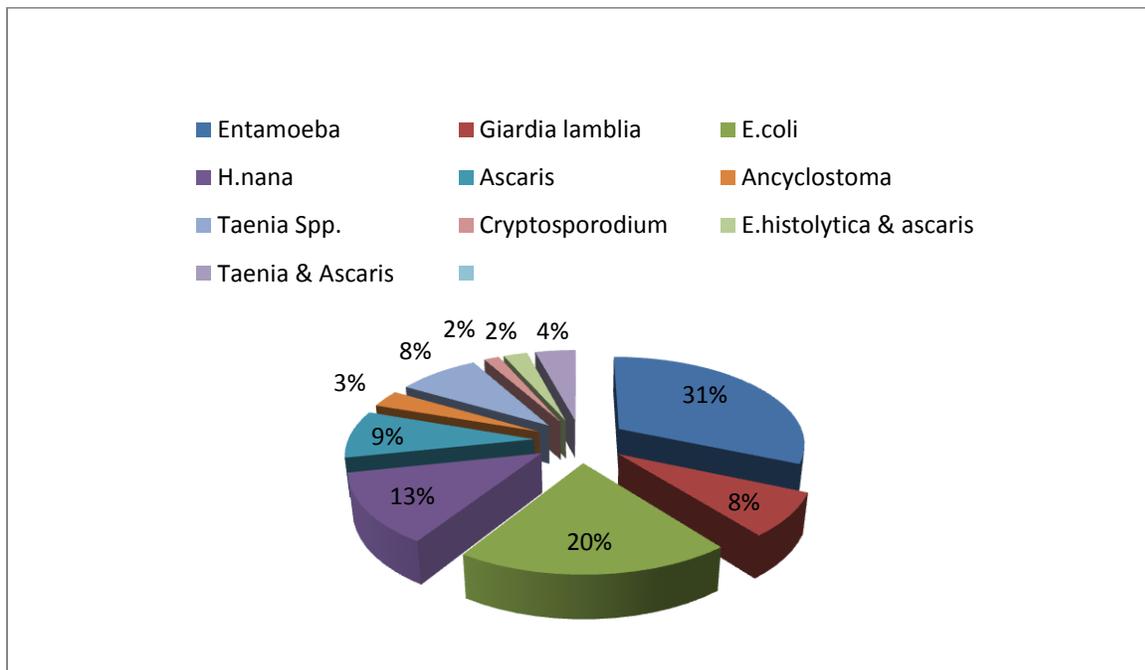


Fig 4: Distribution of intestinal parasites in stool samples

Discussion

In our study, the results revealed that the prevalence of Intestinal parasitic infection was elevated. In our study the prevalence of intestinal parasitic infection is 112(15.5%). Age group 30-40 were infected with one or more intestinal parasites. Thirty four percent of the children were identified as having one or more of the following parasites present in their stool samples as *Ascaris lumbricoides*, *Ancylostoma duodenale*, *Trichuris trichiura*, *H. nana*, *Entrobilus vermicularis*, *Entamoeba histolytica*, *Giardia lamblia*. These results are consistent with those of previous studies conducted in subtropical areas.

The most common parasites identified were *E.histolytica* (35.71%), *Giardia lamblia* (8.9%), *E.Coli* (22.32%). *H.nana*(14.28%), *A.lumbricoides*(9.8%), *Ancylostoma duodenale*(3.57%%), *Taenia species*(4.46%) and *cryptosporidium parvum* (1.78%) and mixed infection of *E.histolytica* and *A.lumbricoides* (2.8%), *A.lumbricoides* and *Taenia spp.* (4.7%) were also found. Other Indian studies have reported prevalence ranging from 7.5- 15.5% in Chandigarh and 16.8% in Delhi. , The prevalence of intestinal parasite in the study was 73 (22.81%) in Bareilly district. The prevalence of intestinal parasite in this study was 34% which is less when compared with the findings of Rao *et al.*[4]

The discharge of untreated household waste-water into the local river and streams should be discouraged as well as the frequent practice of defecation on the open ground and near these drinking water sources. Sustainable health, especially for children, is not possible without good environmental sanitation.

Conclusion:

In this study Protozoan infection are more common than Helminths as it is an important public health problem,data on the prevalence of parasites in a given region are fundamental in planning any rational control or eradication programme for parasites in human populations. The study data suggest that one low-cost solution to reducing intestinal parasitic infection in this particular group is by decreasing the proximity of one putative reservoir to homes in order to reduce contamination of inside and outside play areas, water and food supplies. Other low

technology, low-cost solutions include the covering of open water sources, improving sanitary food and water storage and handling, and basic personal hygiene.

References

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