



## Incidence of Parasitic Infection's related to Stool among the patient's attended OPD (Out Patients Department) and IPD (Indoor Patients Department) of Hi-Tech Medical College and Hospital – 2011

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### ABSTRACT

*Study of the incidence of parasitic infection's related to stool among the patients attended OPD (outpatient department) & IPD (indoor patient department). This research project is conducted between July 2010 to September 2011. A total of randomly 200 stool samples received in the parasitology section of microbiology department from the various wards. Only 40 cases were found to be positive and rest 160 cases were negative. Most of the positive cases were infected with Entamoeba histolytica (20 cases), Giardia lamblia (10 cases), Hookworm (5 cases), S. stercoralis (2 cases) and Roundworm (3 cases).*

**Keywords:** *Stool samples, parasites present in stool, microscopic examinations.*

### INTRODUCTION

Medical Parasitology traditionally has included the study of three major groups of animals:- Parasitic Protozoa, Parasitic Helminths (worms), and those arthropods that directly cause disease or, act as vectors of various Pathogens.

A parasite is a pathogen that simultaneously injures and derives sustenance from its host. Some organism called parasites are actually commensals, in that they neither benefit nor harm their host (for example, Entamoeba Coli). Although parasitology had its origins in the zoologic sciences, it is today an interdisciplinary field, greatly influenced by microbiology, immunology, Biochemistry & other life sciences.

Infections of humans caused by parasites number in the billions and range from relatively innocuous to fatal. The diseases caused by these parasites constitute major human health problems

throughout the world. (for example, approximately 30% of the world's population is infected with the nematode Ascaris Lumbricoides.)

During our relatively short history on earth, humans have acquired an amazing number of parasites, about 300 species of helminth worms and over 70 species of protozoa. Many of these are rare and accidental parasites, but we still harbor about 90 relatively common species, of which a small proportion cause some of the most important diseases in the world, inevitably, these are the ones that have received the most attention.

### MATERIALS AND METHODS

#### MATERIALS

Specimen, Clean Glass Slide, Clean Cover Slips, Sterile Container for Collection, Sterile Loop for Picking up the Sample, Freshly Prepared Saline Solution, Lugol's Iodine Solution, Microscope.

**METHODS**

Parasitic infection related to stool of laboratory diagnosis – Microscopic Study of two methods have been followed such as:- Saline Wet Mount Method & Iodine Wet Mount Method.

Prepare a thin suspension of stool on a slide at two places, one in saline and other in lugol’s iodine. Apply cover slip and observe under low power and then under high power.

Use saline preparation for demonstration of parasitic egg’s, larvae and trophozoites of protozoa because: We can comment on bile staining (yellowish – brown color) of eggs only in saline preparation. In iodine preparation all eggs appear yellowish brown. Parasitic larvae and trophozoites remain alive and motile only in saline. Use iodine preparation to demonstrate cyst. Cyst can be seen in saline preparation, but they are better visualized in iodine preparation. The nuclei and glycogen inclusion of cysts and nuclei of trophozoites are deeply stained.

**OBSERVATIONS AND RESULTS**

**TABLE – 1**

| Name of the Organisms             | No of positive Cases. |
|-----------------------------------|-----------------------|
| Entamoeba histolytica             | 20                    |
| Giardia lamblia                   | 10                    |
| Round worm                        | 03                    |
| Strongyloides stercoralis         | 02                    |
| Hook worm (Ancylostoma duodenale) | 05                    |

**TABLE – 2**

| Total No. of positive Cases. | Male | % of Male | Female | % of Female |
|------------------------------|------|-----------|--------|-------------|
| 40                           | 25   | 62.5      | 15     | 37.5        |

**TABLE – 3**

| 1 – 10 Years | 10 – 25 Years | 25 – 45 Years | 45 - above |
|--------------|---------------|---------------|------------|
| 3            | 5             | 20            | 12         |

**DISCUSSION**

This research project is conducted between July 2010 to September 2011.

During this period, it is observed that 200 cases were resistered for examination of parasitic infections. Out of the 200 cases resistered, only 40 cases were found to be positive. Among these 40

cases, 25 (62.5%) cases were males and 15 (37.5%) cases were females. Most positive cases were found 20 cases under the age-group 25-45years .12 cases were found to be positive under the age-group 45 above. Similarly 5 cases were positive under the 10-25years age-group and only 3 cases were positive 1-10years age group. Rest 160 cases were negative.

In this study, two methods were followed for examination of stool specimens in the laboratory such as saline wet mount method and Lugol's iodine wet mount method.

Most of the positive cases were infected with *Entamoeba histolytica* (20 cases), *Giardia lamblia* (10 cases), Round worm(3cases), *S.stercoralis* (2 cases) and Hook worm(5 cases).

**CONCLUSION**

This research project is conducted among patients attending (OPD) Out Patient Department and (IPD) Indoor Patient Department of Hi-Tech Medical College and Hospital-2011. This is a competitive method of diagnosis of certain parasitic infections caused by parasites found in stool in correlation with symptomatology of the patients suspected to parasitic infections.

Two methods have been performed in laboratory such as saline wet mount method and iodine wet mount method. Out of 200 cases, which is concluded in the study only 40 cases were positive for saline wet mount examinations done by freshly prepared saline and five times diluted Lugol's iodine, respectively.

It is observed that put of 40 positive cases 25 were males whereas 15 were females.20 cases were infected by *E.histolytica* followed by 10 cases by *Giardia lamblia*,5 cases by *Hookworm*, 2 cases by *S.stercoralis* and 3 cases by *Round worm* infections.

Parasitic infection is an important public health problem. In conclusion it is observed from the study that though the incidence of parasitic infection is high in rural areas but it is not so in this medical college as most of the patients are of urban origin and from agencies areas where

proper sanitation and better hygiene are maintained.

#### **BIBLIOGRAPHY**

1. Medical parasitology, 3<sup>rd</sup> edition (Rajesh karyakarte & Ajit damle)
2. Medical parasitology, 2<sup>nd</sup> edition (Bs Nagoba & Asha pichare)
3. Medical parasitology, 3<sup>rd</sup> edition (CP Baveja & V Baveja)
4. Medical parasitology, 3<sup>rd</sup> edition (Arora, D.R.)
5. Medical parasitology, 3<sup>rd</sup> edition (Ichhapujani, Rattan lal)
6. Parasitology: Protozoology & Helminthology, 13<sup>th</sup> edition (Chatterjee, K.D.)
7. Practical microbiology, 3<sup>rd</sup> edition (CP Baveja)
8. Essentials of medical parasitology, (Apurba sankar sastry, Sandhya Bhat K.)
9. Diagnostic microbiology, 13<sup>th</sup> edition (Bailey & Scott's)