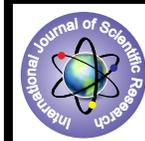


## Prevalence of Intestinal Parasitic Infections in Rural Northern Lucknow- A Prospective Study



### Medical Science

**KEYWORDS :** Helminthes, Protozoa, Intestinal parasitic infection.

<b>Mukesh Kumar Singh</b>	Tutor, Department of Microbiology, Hind Institute of Medical Sciences, Mau, Ataria, Sitapur, India.
<b>MohdShahid Khan</b>	Tutor, Department of Microbiology, Hind Institute of Medical Sciences, Mau, Ataria, Sitapur, India, *Corresponding Author
<b>Shivendra Dutt</b>	Tutor, Department of Microbiology, Hind Institute of Medical Sciences, Mau, Ataria, Sitapur, India.
<b>Mahak jain</b>	Tutor, Department of Microbiology, Hind Institute of Medical Sciences, Mau, Ataria, Sitapur, India.

### ABSTRACT

*Study of the prevalence of parasitic infection is essential to procure an accurate understanding of burden of intestinal parasitic infection in particular geographical landscape.*

**Objective:** The objective of the present study was to dictate the prevalence of intestinal parasitic infection among all age group of patients attending the hospital.

**Material and methods:** A total of 720 stool samples of patients between the age group 0 to 60 years were collected between the period of August 2015- January 2016. Naked eye examination and microscopic examination using saline and Lugol's iodine preparation was done to study the stool sample.

**Result:** A total of 720 samples was taken and examined out of which 135 were positive either for protozoal or helminthic infection with a prevalence rate of 18.7%. Cyst and trophozoites of protozoa were found in 26(19.25%) while eggs of helminthes were found in 109(80.7%) of positive samples.

**Conclusion:** Prevalence rate was found to be high in our study which is suggestive of decreased sanitation, awareness, personal hygiene, safe drinking water supply and health education.

### Introduction:

Poor sanitation and lack of personal hygiene have been a leading cause of Intestinal parasites in developing countries. Due to this around 60% of the world's population have been associated with infection of the gut due to intestinal parasites. The commonest infections include that of *Entamoeba histolytica*, *Ascaris*, Hookworm and *Hymenolepis nana*. According to previous studies, the overall prevalence rates in India range from 13% to 66%.

Most of the studies that have been done in this regard are based on samples from patient groups and controls. Community prevalence of north Indian population however has not been documented. This report is a detailed analysis of the potentially pathogenic parasites in the rural north Indian population (Amin et al., 1979).

### Materials And Methods:

This study was carried out in the Department of Microbiology, Hind Institute of Medical Sciences-Sitapur, Uttar Pradesh. A total of 720 stool samples of patients between the age group 0 to 60 years were collected between the period of August 2015- January 2016. Wide mouth containers without preservatives were used to collect stool samples. Naked eye examination and microscopic examination using saline and Lugol's iodine preparation was done to study the stool sample.

### Result:

A total of 720 samples was taken and examined out of which 135 were positive either for protozoal or helminthic infection with a prevalence rate of 18.75% (graph1). Cyst and trophozoites of protozoa were found in 26(19.25%) while eggs of helminthes were found in 109(80.7%) of positive samples (graph 2). Among all the parasites which was identified *Ascaris lumbricoides* was commonest helminth 56(51.3%) followed by *hookworm* 33(30.27%), *Taenia* species 14(12.84%) and *Hymenolepis nana* (5.50%). In protozoa infection

*Entamoeba histolytica* was commonest accounting for 17(65.3%) followed by *Giardia lamblia* 9(34.6%). Out of 135 parasitosis positive cases, females were the commonest group 83(61.4%) as compare to males which was 52(38.5%).

Parasitic infection was more common in age group of 51-60 years (28.6%) followed by age group of 11-20 (20.7%) and lowest infection was seen in age group of 31-40 years (12.5%) (graph 3).

### Discussion:

Human parasitic infection is a worldwide problem of enormous proportion with wide variation in intestinal parasites from region to region, different geographical areas, communities and ethnic groups including seasonal variation (Tedla, 1986). In the present study parasitic infection was found in 135 (18.7%) patients out of the total 720 cases which is comparable to previous studies 17.6% (Sahai and Jamali, 2015), Singh et al., (2014) 13.9%, Kotian et al., (2014) 11.62%. However, many studies have reported higher prevalence rate in the range of 22.81-55.65% and few studies have reported low prevalence of around 6.63% (Ragunathan et al., 2010, Singh et al., 2004, Rashid et al., 2011). Various studies from India have reported a prevalence rate in the range of 12.5% to 66% (Bisht et al., 2011, Ramesh et al., 1991, Singh et al., 1993). Nevertheless, prevalence rate is comparable to a previous study done by Nitin S et al., (2007) in Alambagh and Mati area of Lucknow, in which overall prevalence of intestinal parasites was 11.5%, (5.4% in Alambagh and 20.8% in Mati) (Nitin et al., 2007). The wide variations in the prevalence of intestinal parasites are multifactorial and related to quality of potable water, personal hygiene and sanitation and other environmental conditions.

In our study female patient were more commonly affected 61.4% compare to their males counterpart 38.5%, male female ratio was 1.5:1. This is comparable to few previous

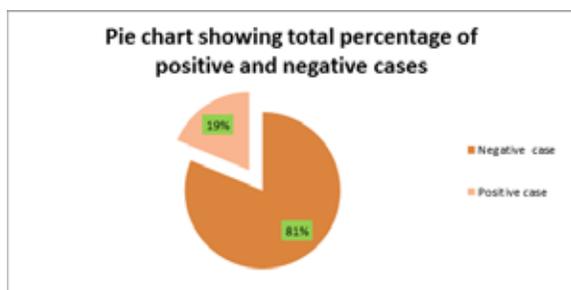
studies by Kotian et al., (2014) and Dudeja et al., (2012). However reverse ratio has been reported by few workers Singh et al., (2014), Sahai and Jamali, (2015) and Rao et al., (2003). This variation of prevalence in gender is most commonly depend on personal hygiene and daily activities.

Helminths intestinal parasites were cause of infection in majority (80.7%) of patients compared to protozoan(19.2%). This is comparable to previous studies done by Ragunathan et al., (2010) Rashid et al., (2011) Singh et al., (2004), Kotian et al., (2014) Aher et al., (2011)and Bisht et al., (2011) but few other workers have reported protozoan as major intestinal pathogens as Sahai and Jamali, 2015.

### Conclusion:

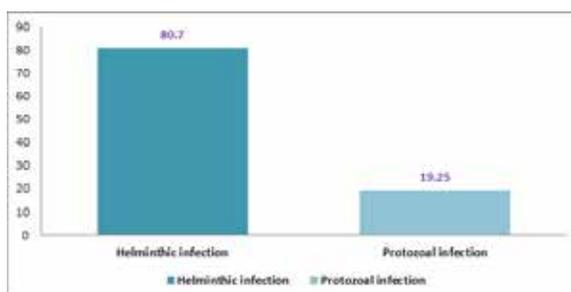
The study showed that intestinal parasitic infection is a major problem in the perspective of public health which can be reduced by increasing awareness, good hygiene, safe drinking water, proper health education, avoiding defecation in open area.

**Graph 1:**



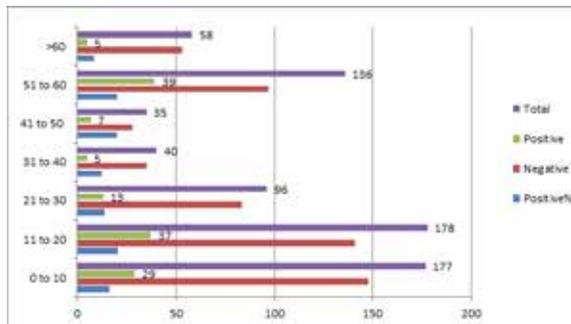
**Graph 2:**

**Bar chart showing total helminthic and protozoal infections.**



**Graph 3:**

**Age wise distribution of intestinal parasitic infection.**



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