

# Prevalence of Intestinal Parasitic Infections among School Children in and around Amalapuram.

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## Abstract :

Intestinal parasitic infections are responsible for considerable morbidity and occasional mortality among infected population through out the world. It is estimated that around 2 billion people are infected with Intestinal parasites globally. The present study was conducted in the Department of Microbiology, KIMS, Amalapuram, East Godavari Dist, A.P. India. A total of 200 stool samples were collected from different Municipal Schools in around Amalapuram according to standard procedures. Among the 200 samples, 98 (49%) were found to be positive for Intestinal parasitic infections. Out of 98 positive cases, single parasite infections were found among 80 children, were as 18 children were found to be infected with multiple parasitic infections. Increased access to water and sanitation facilities in primary school children, to promote hygiene practices and improved health among school aged children and to strengthen the capacity of educational department by improving in service teacher training including hygiene education components. Additional support is targeted at elementary schools to promote personal hygiene awareness and environmental sanitation among school children.

## Introduction

PrIntestinal parasitic infections of humans are important threats to healthy living in developing countries (Kia et al, 2008). Intestinal parasitic infections are responsible for considerable morbidity and occasional mortality among infected population through out the world. It is estimated that around 2 billion people are infected with Intestinal parasites globally.

The Intestinal parasitic infections are among the most common infections of School are children in developing countries (Alborico M. crompton et al, 1999).

Poverty, low literacy rate, poor hygiene, lack of access to potable water and hot and humid tropical climate are the factors associated with high prevalence of intestinal parasitic infections in developing countries.

The purpose of the study was to find out the prevalence of the Intestinal parasitic infections of school going children in Amalapuram, Andhra Pradesh, India.

## Materials And Methods

The present study was conducted in the Department of Microbiology, KIMS, Amalapuram, East Godavari Dist, A.P. India. A total of 200 stool samples were collected

from different Municipal Schools in around Amalapuram according to standard procedures. (Isenberg HD. Essential procedures for clinical Microbiology). Between November 2013 to January 2014. All the stool samples were examined by the direct Microscopic examination (Saline and Iodine preparations) and by formal - ether concentration methods Macroscopic examinations of stool was done for presence of mucus blood and any parasites.

Informed consent was obtained from teachers, parents and the students. The containers was provided a day earlier and the subjects advised collect the stool sample in it the next morning. Precautions were taken in not diluting the stool sample with Urine / Water. It was made sure that the study subjects were not on any therapy.

## Results

A total of 200 stool samples were collected from different Minicipal Schools in and around Amalapuram. Among the 200 samples, 98 (49%) were found to be positive for Intestinal parasitic infections. Out of 98 positive cases, single parasite infections were found among 80 children, were as 18 children were found to be infected with multiple parasitic infections. The detail of the data was tabulated under Table – 1.

The Socio – demographic characteristic were tabulated under Table – 2.

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**Table - 1**

**Single Parasitic Infections**

S.No.	Name of Parasite	N = 98	%
1.	Entamoeba histolytica	62	63.27
2.	Giardia intestinalis	05	5.10
3.	Ascaris lumbriciodes	03	3.06
4.	Ancylostoma duodenale	06	6.12
5.	Enterobius vermicularis	02	2.04
6.	Trichuris trichura	02	2.04
		<b>80</b>	

**Multiple Parasitic Infections**

S.No.	Name of Parasites	N = 98	%
1.	Ascaris + Trichuris	06	6.12
2.	Trichuris + Enterobius	07	7.15
3.	Ascaris + Ancylostoma	03	3.06
4.	Entamoeba + Giardia	02	2.04
		<b>18</b>	

**Table - 2**

**Socio – Demographic Characteristics**

Characteristics	No (%)
<b>AGE</b>	
Below 8 Years	80 (40)
Above 8 Years	120 (60)
<b>RESIDENCE</b>	
Urban	60 (30)
Rural	140 (70)
<b>GENDER</b>	
Male	95(47.5)
Female	105 (52.5)
<b>EDUCATION OF MOTHER</b>	
No education / Primary school	170 (85)
Secondary school, high school and more	30 (15)
<b>EDUCATION OF FATHER</b>	
No education / Primary school	140 (70)
Secondary school, high school and more	60 (30)
<b>HOUSING CONDITIONS</b>	
Owner	160 (80)
Rental	40 (20)
<b>MUNICIPAL TAP NETWORK</b>	
Yes	60 (30)
No	140 (70)

<b>TOILETS</b>	
Open fields	150 (75)
Private / Sharing	50 (25)
<b>TAKE BATH</b>	
Once a day	140 (70)
<b>Washing Hands With Soap After Toilets</b>	
Yes	130 (65)
No	70 (35)

**Discussion:**

Parasitic infection caused by protozoa and helminthes are major global health problems. Globally two billion people were infected with intestinal parasites. Out of this majority were children in resource poor settings (WHO 2002).

The prevalence of intestinal parasitic infections vary considerably from place to place in relation to the pattern of disease. (Luka et al, 2000). The present study showed a prevalence rate of 49 %. Studies carried out in various parts of India have reported a prevalence of intestinal parasites from 30 to 50% among school going children (Ministry of Rural Development. Govt. of India.) & (Dongre AR et al, 2007) In the present study, out of 98 (49%), E.histolytica was the most prevalent parasite 62 (63.2%), followed by Ancylostoma 6 (6.12); and Giardia intestinalis 5 (5.10%) and in multiple infections Trichuris trichura + Enterobius vermicularis was 7 (7.15%) followed by Ascaris + Trichuris 6 (6.12%) and Ascaris + Ancylostoma 3 (3.06%) among the 98 infected school going children.

Similar results have been obtained in the study conducted at Vizayanagaram by Dr. Supriya Padma, et al (2012). The present was in contrast with other studies conducted by Saroj Golia, et al (2014) and it varies from the similar study which was conducted in Amalapuram in 2006. Which shown an incidence of 63.94% (Ashok R et al 2013), Even higher rates were reported by Fernandez et al (2002) in Chennai (91%).

Age is an important factor for internal parasitic infections and pre school and school going children have been reported to be at high risk (Charterjee et al 1995). In this study children below 8 years were heavily infected (60%) compared to other age groups. Khanal et al. 2011 Dongre et al, 2007 also showed increased prevalence in 6 – 8 years age group. Children in these age groups often spend more of their leisure time out doors and more often in contact with sand and eat indiscriminately with unwashed hands. Where as the decreased infestation rate in older children may be attributed to the better hygienic practices amongst them. (Saroj Goal et al 2014).

The commonest protozoan isolated in this study was *E. histolytica*, which is in correlation with other studies (Gelaw *et al* 2013).

The occurrence of parasitic infections at high rates is indicator of faecal pollution of soil and domestic water supply around homes due to poor Sanitation and improper sewage disposal in those areas.

In this current study, the prevalence of I.P.I's was higher in natural areas. The prevalence of intestinal parasites was higher in the groups where the mother in the house hold had less than primary school education. No hand wash with soap after toilets was found to be significant risk factor in the present study.

Increased access to water and sanitation facilities in primary school children, to promote hygiene practices and improved health among school aged children and to strengthen the capacity of educational department by improving in service teacher training including hygiene education components. Additional support is targeted at elementary schools to promote personal hygiene awareness and environmental sanitation among school children.

## References

1. Kia EB, Hossein M, Nilforoushan MR, Meamar AR and Rezaeian M. Study of intestinal protozoan parasites in rural inhabitants of Mazandaran Province, Northern Iran. *Iranian Journal of Parasitology* 2008;3: 22–25
2. Albonico M, Crompton DW, Savioli L. Control strategies for human intestinal nematode infections. *Adv Parasitol* 1999; 42: 277-341.
3. World Health Organization. The prevention & control of Schistosomiasis & soil transmitted Helminthiasis. Geneva: WHO; 2002.
4. Luka SA, Ajogi I and Umoh JU. Helminthosis among primary school children in Lere Local Government Area, Kaduna State, Nigeria. *Nigerian Journal of Parasitology* 2000; 21: 109-16.
5. Ministry of Rural development. Government of India. Total Sanitation Campaign: Guidelines [Online]. 2004 [cited on 5 Nov.2007]; Available from URL:<http://www.ddws.nic.in/NewTSCGuidelines.doc>
6. Dongre AR, Deshmukh PR, Boratne AV, *et al.* An approach to hygiene education among rural Indian school going children. [cited 2007 Dec 18]. Available from: <http://www.ojhas.org/issue24/2007-4-2.htm>
7. Supriya Panda, U.Dharma Rao, K.Rama Sankaram. Prevalence of Intestinal Parasitic Infections among School Children in Rural Area of Vizianagaram. *Journal of Pharmacy and Biological Sciences* 2012;6: 428-32.
8. Saroj Golia, Sangeetha K.T and Vasudha C.L. Prevalence of parasitic infections among primary school children in bangalore. *International Journal of Basic and Applied Medical Sciences*.2012;4:12-8
9. Rangaiahagari Ashok, Giddi Suguneswari, Ksbvn Satish, Vedantham Kesavaram. Prevalence of Intestinal Parasitic Infection in School Going Children in Amalapuram, Andhra Pradesh, India. *Shiraz E-Med J*. 2008;14(4):18-22.
10. Fernandez MC, Verghese S, Bhuvaneshwari R, Elizabeth SJ, Mathew T, Anitha A and Chitra AK. A comparative study of the intestinal parasites prevalent among children living in rural and urban settings in and around Chennai. *Journal of Communicable Diseases* 2002; 34: 35-39.
11. Chatterjee KD (1995). *Parasitology*, 12th edition (India: Chatterjee Medical Publisher, Calcutta) 211. Chiaoze JU, Kelvin OE, Patrick GO, Nelson CA and Emmanuel A (2007). Soil-transmitted helminth infection in school children in South-Eastern Nigeria: The public health implication. *Internet Journal of Third World Medicine* 1.
12. Khanal LK, Choudhury DR, Rai SK, Sapkota J, Barakoti A and Amatya R *et al.* Prevalence of intestinal worm infestations among school children in Kathmandu, Nepal. *Nepal Medical College Journal* 2011;13(4): 272-4
13. Gelaw A, Anagaw B, Nigussie B, Silesh B, Yirga A and Alem M *et al.*, Prevalence of intestinal parasitic infections and risk factors among school children at the University of Gondar Community School, Northwest Ethiopia: a cross-sectional study. *BMC Public Health* 2013;13 :304-14

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