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Study of Intestinal Parasite of Adjacent Villages of Dhar (M.P.)

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Abstract: ***In the present study, stool samples were examined for protozoan and helminthic infection of the population in Adjacent Villages of Dhar city and their namely-Delmi, Badpipli, Sitapat, Padliya, Matalabpura, Gyanpura, Khilchipura, Tornod, Jetpura and Utawad. Protozoa such as Entamoeba histolytica, Entamoeba coli and Giardia intestinalis and Helminths such as Ascaris lumbricoides, Ancylostoma duodanale, Taenia species, Trichuris trichiuria and Enterobius vermicularis are some of the common intestinal parasites responsible for considerable morbidity in young and adult population. In the present study - among helminthic parasite infection maximum incidence of Ascaris lumbricoides was observed followed by Taenia sp., Trichuris trichura, Enterobius vermicularis and Ancylostoma duodenale. Intestinal parasitic infestation represents a large and serious medical and public health problem in developing countries. Risk factors for this high prevalence being low levels of sanitation, lack of safe water supply, poor hygiene, low socio economic status and impoverished health services.***

Keywords: Intestinal parasite, Protozoan parasite, Helminthic parasite and Public health

1. Introduction

Stool, also called faeces, is usually thought of as nothing but waste-something to quickly flush away. But bowelmovements can provide doctors with valuable information as to what's wrong when we have problem in the stomach, intestines or another part of the gastrointestinal system.

Intestinal parasitic infections are endemic worldwide and have been described as constituting the greatest single worldwide cause of illness and disease. Poverty, illiteracy, poor hygiene, lack of access to potable water and hot and humid tropical climate are the factors associated with intestinal parasitic infections. Parasitic protozoa and helminths are responsible for some of the most devastating and prevalent diseases of humans. Intestinal parasitic infections (IPI) constitute a global health burden causing clinical morbidity in 450 million people, many of these women of reproductive age and children in developing countries (Quihui, *et al.*, 2006).

Parasitic infections are a major public health problem worldwide; particularly in the developing countries (Norhayati *et al.*, 2003). The prevalence of the intestinal parasitic infections varies from one region to another and it also depends largely on the diagnostic methods which are employed and the number of stool examinations which are done. In India, malnutrition, unhygienic conditions, the improper disposal of sewage and the non-availability of potable water supplies in the rural and the urban areas are responsible for the high rate of intestinal parasitic infections (Mayta *et al.*, 2000).

As large percentage of Indian population lives in rural, peri-urban, slum and Industrial areas by makeshift dwellings. They normally go for open defecation and move about bare feet. Living conditions of these people in crowded or unhealthy situations may also facilitate the spread and distribution of various helminthic infections (Mubeen *et al.*, 2007). Helminthiases are transmitted through the ingestion of polluted crops, contact with polluted sludge, faeces or wastewater, and the ingestion of polluted meat.

2. Material and methods

15 Stool samples were collected from each village of adjacent villages of Dhar city in polythene bags from nearby open fields and road sides in hours of the day. The samples were immediately brought to the laboratory and were examined microscopically following diagnostic procedures given in standard text on parasitology by *Chatterjee* (1981).

3. Result and Discussions

Results of the protozoan and helminthic parasitic study of Adjacent Villages of Dhar are shown in the table-1 and diagram. In the adjacent villages of Dhar city *E. histolytica* infection was recorded in all villages. 150 samples collected from 10 Villages. 32 samples were found infected with this parasite in adjacent villages. Its overall infection was 21.33 percent. Maximum incidence was recorded in village Delmi (33.33 %) followed by village Padliya, Matalabpura, and Tornod (26.66 % each) and village Badpipli, Jetpura and Utawad (20 % each). Least incidence was observed in the stool samples of village Sitapat, Gyanpura and Khilchipura (13.33% each). Faecal contamination of drinking water, vegetables and food are primary responsible for the transmission of cysts of *E. histolytica* to man.

The incidence of *E. coli* was 24.67 percent. Maximum incidence of this parasite was observed in village Tornod (46.67 %) followed by Village Khilchipura (33.33 %) and Padliya Matalabpura, Jetpura and Utawad (26.66% each). Lowest infection was recorded in Gyanpura (6.66%).

The incidence of *Giardia intestinalis* in the study area of Villages was 31.33 percent. Maximum incidence of this parasite was observed in the stool samples of Village Matalabpura and Utawad (53.33 % each) followed by villages Padliya and Tornod (23.33% each). In these villages sanitary conditions are very poor and during rainy season

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people are bound to use contaminated drinking water as there is no proper drainage of rainy water. Least incidence of *Giardia intestinalis* was recorded in stool samples of Village Badpipli (13.33 %).In the adjacent villages of Dhar city fertilized eggs of *A. lumbricoides* were observed in 32 stool samples. Maximum incidence of this parasite was recorded in village Utawad. Other villages in which more than 13.33% infection was recorded.

Parameshwarappa *et al.* (2012) reported maximum incidence of *Ascaris lumbricoides* followed by *Taenia sp., T. trichura, E. vermicularis and Strongyliodes stercoralis* while studying stool samples in Rajpur of Gulbarga district. They found that incidence of infection was maximum among the population of lower income group. Ragunathan *et al.*, (2010) also reported that the maximum incidence of *Ascaris* lumbricoides(43.21%) followed by *Ancylostoma duodenale* (28.89%), *Trichuris trichiura* (10.87%), *Taenia sp*. (7.41%) and *Enterobius vermicularis* (1.98%) while studying stool samples of children in public school in Puducherry, south India.

Maximum incidence *of Taenia species* (26.67%) was observed in village Utawad followed by village Gyanpura (20 % each). Least affected villages were Badpipli, Sitapat and Khilchipura in which not more than 6.67% infection was recorded. In the adjacent villages of Dhar city, A. *duodenale* showed the lowest incidence among population. Adult hook worm and their eggs were observed in 7 stool samples of the 10 Villages. *A. duodenale* (hook worm) infects human beings by penetrating the skin coming in contact of this parasite. It causes ancylostomiasis. It indicated that rural folk do not use slippers or shoes while working in the agriculture fields and also while going for defecation in the open fields.

Barrel shaped eggs of *T. trichura* were found in 14 out of 150 stool samples. Its overall incidence was 9.33 percent. Maximum infection was observed in village Delmi (20 %) followed by villages Matalabpura, Tornod, Jetpura and Utawad (13.33% each). It causes trichuriasis. Human beings get infected by swallowing embryonated eggs with water or food.

Infection of *E. vermicularis* were maximum in adjacent village- Badpipli in which 3 out of 15 samples. Lowest incidence of infection was recorded in Village Delmiand ,Padliya, Khilchipura and Jetpura (6.67% each). Infection of this parasite is caused by ingestion of eggs of this parasite. Lake of health education is the major cause of intestinal infection in the population.

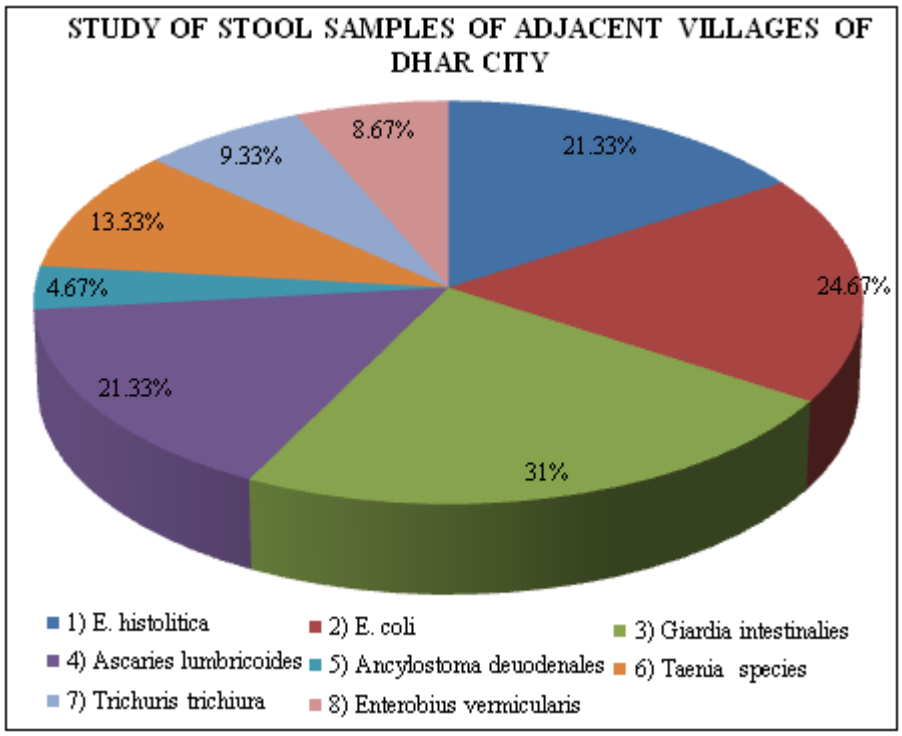
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Table 1: Study of Stool Samples of Adjacent Villages of Dhar City

Species	Samples	Percentage
PROTOZOAL PARASITES		
a) *Entamoeba histolytica*	32	21.33
b) *E. Coli*	37	24.67
c) *Giardia intestinalis*	47	31.33
HELMINTHES PARASITES	0	0
a) *Ascaris lumbricoides*	32	21.33
b) *Ancylostoma duodenale*	7	4.67
c) *Taenia species*	20	13.33
d) *Trichuris trichiura*	14	9.33
e) *Enterobius vermicularis*	13	8.67

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