

SHORT COMMUNICATION

AN ANALYSIS OF INTESTINAL PARASITIC INFESTATION IN DERA ISMAIL KHAN, PAKISTAN

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INTRODUCTION

Intestinal parasitic infestation is a common condition in developing as well as developed countries. According to WHO Global Burden of Disease 2004 report, approximately 150.9 million of world population has high intensity infection by intestinal nematode while 37.7 million people alone from south East Asia are infected.¹ Among developing countries like Pakistan, intestinal parasitic infestation is mainly an ailment of children due to poor personal hygiene. Adults, however, acquire the illness due to social and socioeconomic reasons compounded by the lack of elementary education about common human parasitic diseases.

MATERIAL AND METHODS

A descriptive non-interventional study was carried out in the Department of Pathology, Combined Military Hospital, Dera Ismail Khan, Pakistan from 1st June 2007 till 31st May 2008. The objectives of the study were to determine the prevalence and spectrum of intestinal parasitic infestation among the population of District Dera Ismail Khan. Subjects of all age and either gender were included in the study that was referred by the physicians for screening of intestinal parasites. Children were defined as individuals less than 12 years of age. Those on anti-parasitic medication were excluded from the study. A total of 1713 non-duplicate subjects were included during this period. The results were analysed using SPSS-10.

All the stool specimens were processed within 15 minutes of submission to the lab. The fresh stool samples from these subjects were examined by saline preparation for identification of trophozoite forms and worms. Ova and cysts of parasites in the stool were identified by Formal ether concentration technique. The vegetative and cyst forms of parasites along with the ova were first screened by the lab technician and later confirmed by the microbiologist.

RESULTS

Out of total 1713 stool samples processed during the study period, a total of 356 samples were positive for intestinal parasites. None of the subject had two or more than two parasitic infestation. *Taenia saginata* was the most frequently observed parasite with 270 positive samples (15.76%). *Giardia lamblia* (both vegetative and cyst forms) was the second most common parasite with 53 positive samples (3.09%). *H. nana*, *Ancylostoma*

duodenale, and *Entamoeba histolytica* (vegetative form only) were the rest of the parasites identified with descending frequencies of 23, 5 and 3 positive samples respectively. *Ascaris lumbricoides* was the least frequently observed parasite with only 2 stool samples showing the ova of the said parasite. The results are shown in Table-1.

Table-1: Spectrum and percentage of parasites isolated

| Parasite SPP | Total | Male | Female | Children | % |
|-----------------------------|------------|------------|-----------|-----------|--------------|
| <i>Taenia saginata</i> | 270 | 208 | 35 | 27 | 15.76 |
| <i>Giardia lamblia</i> | 53 | 36 | 5 | 12 | 3.09 |
| <i>H. nana</i> | 23 | 19 | 3 | 1 | 1.34 |
| <i>A. duodenale</i> | 5 | 3 | 2 | - | 0.29 |
| <i>E. histolytica</i> | 3 | 3 | - | - | 0.17 |
| <i>Ascaris lumbricoides</i> | 2 | 2 | - | - | 0.11 |
| Total | 356 | 271 | 45 | 40 | 20.78 |

Mainly male subjects had intestinal parasitic infestation (n=271) compared to females (n=45). The result was statistically significant ($p < 0.005$) despite the fact that the total number of specimens submitted to the lab were almost comparable in number for both male and female subjects.

DISCUSSION

The pattern of intestinal parasitic infestation observed in our study is profoundly different from similar studies carried out in past in various regions/ provinces of Pakistan. S Mulazim Hussain *et al.* in 1997 found that the most prevalent intestinal parasite among adult subjects in Northern Areas of Pakistan was *Ascaris lumbricoides* (35%) followed by *Trichuris trichiura*.² Similarly, in matching studies by Malik *et al.* in upper Neelum Valley and Ahmed Khan *et al.* in Distt Bagh Azad Kashmir revealed almost similar results with *Ascaris lumbricoides* being the commonest parasite while *Taenia saginata* being least common (Khan *et al.*⁴) or relatively less common (Malik *et al.*³). A study carried out at Children Hospital of Pakistan Institute of Medical Sciences Islamabad in 1990–91 by Ashok *et al.* in a large sample size of 7146 cases noted that the most frequently identified intestinal parasite was *Giardia lamblia* (67%), followed by *Ascaris lumbricoides* (12.8%) while least common parasite was *Taenia saginata*.⁵

In our study, the finding of high percentage of *Taenia saginata* infestation reflect the eating habits of dwellers of KPK in general who have propensity for excessive intake of meat and meat products. The life

cycle of *Taenia saginata* is different from other common parasitic infestation in that the disease is acquired by eating infected raw or under-cooked meat of cattle⁶ compared to other parasites that have direct faecal oral route of transmission. Dera Ismail Khan is among thickly populated districts of KPK that share many cultural and social habits with other districts of the province. However, the detection of high percentage of *Taenia saginata* infestation points to the fact that the livestock used for eating purpose is considerably infected by the cysticerci of *Taenia saginata*. It is therefore suggested that concerned authorities must ensure eradication of *Taenia saginata* in livestock by use of anthelmintics. Moreover, any person from Dera Ismail Khan District presenting with nonspecific abdominal symptoms must be investigated for *Taenia saginata* infestation and treated appropriately to disrupt the life cycle of this parasite.

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