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DIAGNOSIS OF ENTEROBIUS VERMICULARIS BY SCOTCH TAPE FROM VARIOUS AREAS OF WASIT PROVINCE

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ABSTRACT

A total of 100 stool samples collected from suspected patients with *Enterobius* vermicularis (Ev) attended to AL-Karamah Teaching Hospital at Wasit Province. *Enterobius vermicularis* is a parasite that is common in crowded areas such as schools and kindergartens. Out of 100 stool samples; 62 cases gave positive results (62 %) by direct microscopic examination. Also we examined 67 stool samples from school children by Scotch tape and 35(52%) of these samples gave positive results. Significantly, the male was more predominant (68.6%) than the female (31.4%). The present study aimed to estimate the prevalence of this infection among Iraqi children using direct and Scotch tape methods.

KEYWORDS: *Enterobius vermicularis*, Scotch tape**,** Children.

INTRODUCTION

Enterobius Vermicularis is one of the most common human parasite infection worldwide, especially in temperature climates and is one of the most factors lead to malnutrition and growth retardation among children.[1] In colder climates, some factors such as less exposure to sunlight, heavy clothing and fever bath lead to higher prevalence of enterobiasis, especially in children. It generally inhabits the large intestine but is of low pathogenicity. Occasionally, however, ova can be found in ectopic sit in the peritoneal cavity and sometimes in the appendix.[2] *Enterobius* is may remain asymetomatic or case perianal pruritus, insomnia, restlessness and irritability particularly in children, furthermore, ectopic infection, seen most commonly in females, may result in pelvic inflammatory disease or urinary tract infection.[3] Egg stuck under the nails or on the fingers are transferred between children in school and nurseries or to the family at how be swallowed. The sharing of bath towels is another way in which they can be spread the pinworm eggs also persit in the environment for 2 to 3 weeks, anything they contact, such as toilets, seats, doorknobs, bed linen, underwear, shared toys, baths and food within household dust. The habit of thumb sucking other fingers is strongly associated with the prevalence of thread worms.[4]

There are several drugs, which can help to eliminate pinworms, one of the most common drugs is Mebendazol. It is usually taken in a single dose or perhaps in two doses two weeks, apart. The whole family must take the medication; otherwise is not be very helpful. These drugs only kill the adult worms so attention to cleanliness is still extremely important. Petroleum jelly or anti-itch creams and ointment must be applied 2-3 times per-day to reduce the itching that continues the cycle of infection.[5] The diagnosis of *Enterobius vermicularis* usually by using Scotch tape.[6] The present study aimed to estimate the prevalence of Enterobius Vermicularis at Wasit Province, Iraq.

MATERIALS AND METHODS

A total of 100 stool samples collected from suspected patients with Enterobiasis attended Al-Karamah Teaching Hospital at Wasit Province and placed in cup that transported to laboratory and examined by direct microscopic examination. Also we examined 67 stool samples from school children by Scotch tape method.[6]

RESULTS

Table (1) show the comparison between scotch tape and direct methods in the diagnosis of Enterobiasis. Out of 100 stool samples; 62 (62%) positive result using direct method while 67 of these samples gave 35(52%) positive by Scotch tape method. The distribution of positive cases according to age groups were shown in table (2). The higher infection 12 (17.9%) appeared in age group (1-3) years old. Table (3) show the prevalence of EV case according to the age groups and genders. The predominant infection was more in male 36(36%) than female 26(26%) by direct method and most highest and

significant in male 24(68.6%) using Scotch tape method (table 4).

Table 1: Comparison between Scotch tape and direct methods.

Diagnostic test	Examined samples	Positive(%)
Scotch tape	67	35(52%)
Direct	100	62(62%)

Table 2: Distribution of positive cases in Different Age Groups.

Age group/year	+Ve Direct smear (No.= 100)	Scotch tape (No. = 67)
Children (1-3)	11 (11%)	7 (10.4%)
Children (4-6)	25(25%)	12 (17.9%)
Children (7-9)	13 (13%)	10 (14.9%)
Children (10-12)	8 (8%)	3 (4.4%)
Young (13-15)	5 (5%)	3 (4.4%)
Total +Ve case	62 (62%)	35 (52 %)

Table 3: Relationship between Age Group and Gender of Ev Patients.

Age group / year	+ Ve case	Male	Female
Children (1-3)	11(11%)	5(5%)	6(6%)
Children (4-6)	25(25%)	15(15%)	10(10%)
Children (7-9)	13(13%)	7(7%)	6(6%)
Children (10-12)	8(8%)	6(6%)	2(2%)
Young (13-15)	5(5%)	3(3%)	2(2%)
Total + Ve case	62%	36(36%)	26(26%)

Table 4: Scotch tape method according to gender and age groups.

Age /Year	Scotch tape method		Total
	Male	Female	
1-3	5	2	7
4-6	7	5	12
7-9	8	2	10
10-12	2	1	3
13-15	2	1	3
Total %	24(68.6%)	11(31.4%)	35(100%)

***P = 0.006 significant**

DISCUSSION

Enterobius vermicularis, pinworm, is one of the most common helminths worldwide, infecting nearly a billion people at all socio-economic levels. Transmission of this parasite has no environmental restrictions and the parasite can be transmitted from host to host without an obligatory stage in soil or intermediary hosts.[7]

The present study found a high prevalence of *Enterobius vermicularis* in school children's and in patients attended to Al-Karamah Teaching Hospital. Significantly, the higher infection was more commonly found in male as compared to female, this fact concluded that male play mostly outside house and were mostly exposed to faecally transmitted parasites, also poor health care and unhygienic condition accompanied with lower standard of education might enhance their exposure to various parasitic agents.[8] The results of present study disagreed with other studies which indicated that the higher infection in female than male.[9]

The high prevalence rate was found in the age group of 4-6 years (25%) compared to other age groups. This might be due to the reason that the children of this age group mostly spent their time outside the home playing in and out door games, crowding with large numbers of children, playing every day together and are in contact with soil as well as water which may facilitated transition and spreading of the infection. Our results were agreed with other results were reported by Raza and Sami (2009) in Iraq[10] Ammoura (2010) in south Jordan.[11] and Singh *et al.* (2013) in Nepal.[12]

CONCLUSIONS

We have found prevalence of this disease among children due to they live in an unhygienic environments and their attitudes are ignorant towards the treatment, and their parents are careless, too.

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