

MEDICAL parasitology is mainly divided into medical proto-zoology and medical helminthology. There is a distinction between the pathogenic and non-pathogenic parasites of importance to man. Man is the definitive host for the majority of the parasitic diseases and acts as the intermediate host for the larval stages of some parasites.

Bahrain has enjoyed the freedom of being a non-endemic area for most of the pathogenic parasites commonly present in the tropics. The absence of the parasitic diseases commonly seen in the tropics is due to the absence of the animal agents and vectors in Bahrain. Stringent measures has kept Malaria transmission at a very low level despite the presence of the Anopheles mosquito and the presence of the plasmodia in persons arriving from highly endemic areas.

For those type of worms which are worldwide in distribution, Bahrain too, is an endemic area. The increase in the infection rate of intestinal parasites can be judged by comparing past and present laboratory records. An increase in the infection rate in Bahrain is occurring due to more than one factor :-

- (a) An increase in the population of Bahrain in the past ten years.
- (b) An increase in the influx of expatriates from endemic areas.
- (c) Residents travelling to endemic areas are unaware of the prevailing disease status of the place being visited and the ease of contracting parasitic diseases i.e. Trypanosomiasis and Schistosomiasis in East Africa.
- (d) An increased awareness, among doctors and laborat-

Parasitic Diseases in Bahrain

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ory personnel, of parasitic diseases and their identification.

In Bahrain, it is compulsory that all persons engaged in food handling and catering establishments should be examined for intestinal parasites and entero-pathogenic organisms. This ensures that all persons likely to disseminate pathogenic ova, cysts, larvae and bacteria are kept at a minimum.

Table 1 shows the number and type of intestinal parasites identified for the years 1975-1978. The most common parasite identified was Trichuris Trichura 34 %, followed by Ascaris Lumbricoides 27 % and Hook worms 18 %. The protozoan parasite, Giardia Lambli was found in 11 % of positive stool samples.

Table 2 shows that of a total of 20910 stool specimens, 4436 (21 %) yielded intestinal parasites of which 705 (3 %) yielded protozoan parasites and 3731 (18 %) yielded helminthic parasites.

In Table 3, an increase in the positive stool cultures for Salmonella and Shigella organisms is observed. Food handlers are prevented from handling food until bacteriologically cleared. They are also instructed in maintaining a

high level of hygiene in the working premises.

The three common helminths identified do not pose a public health problem, since the ova passed in the faeces needs a time interval of 10-30 days in the soil before it can be infective. Infection, though, can occur by ingestion of soil contaminated vegetables and fruits with ova or larvae, if not properly washed.

In endemic areas where reinfection is likely to occur only heavy or moderate infections should be treated, unless simultaneous attempts are made to improve the environment. In non-endemic areas even light infections should be treated. In Bahrain, the aim of treatment should be to reduce the load of infection below the level of clinical significance. In persons suffering from sickle cell anaemia, tuberculosis, or severely ill patients, even light worm infections should be treated ¹

Piperazine derivatives are contraindicated in renal or liver disease and in epilepsy. Before and during immuno-suppressive therapy, patients should be screened for the presence of strongyloides infection, as dissemination of the larvae occurs leading to death ²

Flukes require special mention due to returning travellers from the Middle East and Far East. Their varied clinical symptoms and signs of haematuria, dysentery, hepatitis, cholangitis, pancreatitis, halzoun, bronchiectasis and lung abscess are caused by the Trematodes viz schistosomes, intestinal flukes, liver flukes and the lung flukes. The physicians and surgeons at the Salmaniya Medical Centre have been alerted about the importance of clonorchiasis and paragonimiasis among the Koreans and Japanese. Tuberculosis is a not

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uncommon coincidental finding in paragonimiasis³. The intermediate host snails are not present in Bahrain, so these diseases cannot be transmitted from imported cases.

Filariases may be imported from endemic areas viz. India, Ceylon, Thailand, Korea, by persons seeking employment or by returning travellers. But although the intermediate host vector i.e. *Culex anopheles*, *Aedes* or *Mansonia* might exist, there is no large reservoir of microfilariae from which the insects could become infected. For a definitive diagnosis thorough investigation is required and should include intradermal tests

with the appropriate antigens and the complement fixation test.

Amoebiasis The prevalence rates for the Middle East vary from 30 to 80%⁴. A High rate can be regarded as an indication of frequent transmission due to low levels of hygiene and sanitation. Immuno-diagnostic methods are available for identification of antibodies produced in invasive amoebiasis and is the best means to detect an invasive infection in persons passing cysts.

Conclusion

Identification of the parasites is of utmost importance and the first step in the control of parasitic dis-

eases. Further diagnostic and treatment facilities are required to ensure medical care of those who have acquired parasitic infections.

It is not necessary to screen all the expatriates for intestinal parasites but testing for such parasites should form part of a complete examination of persons requiring medical care.

TABLE 1 INTESTINAL PARASITES 1975 —1978

<i>Intestinal Parasites</i>	1975	1976	1977	1978	Total 1975-78	Positive %
Protozoan Parasites						
Amoebae :						
Entamoeba Histolytica	2	1	2	5	10	0.2
Flagellates :						
Giardia Lamblia	56	98	164	177	495	11.2
Trichomonas Hominis	—	—	79	121	200	4.5
Helminthic Parasites						
Roundworms :						
Trichuris Trichura	196	223	409	697	1525	34.5
Ascaris Lumbricoides	90	162	346	615	1213	27.4
Hookworms	43	32	280	462	817	18.4
Strongyloides	—	—	41	—	41	1.0
Tapeworms :						
Hymenolepis Nana	20	27	41	44	132	3.0
Taenia SPP	—	—	2	1	3	0.1
Total Positive	407	543	1364	2122	4436	100.0
Total No. of Stools Examined	2673	2902	5850	9485	20910	—

TABLE 2 PERCENTAGE OF POSITIVE SAMPLES EXAMINED 1975 — 1978

<i>Year</i>	<i>1975</i>	<i>1976</i>	<i>1977</i>	<i>1978</i>	<i>Total</i>
No. Examined	2673	2902	5850	9485	20910
No. Positive	407	543	1364	2122	4436
Positive%	15	19	23	22	21

TABLE 3 STOOL CULTURE FOR SALMONELLA, SHIGELLA 1975—78

<i>Year</i>	<i>1975</i>	<i>1976</i>	<i>1977</i>	<i>1978</i>
No. Examined	3265	3644	10472	9596
Other Salmonella	22	3	53	280
Shigella	17	15	104	181

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