

MICROSCOPIC FINDINGS OF STOOL ANALYSIS OF 4000 ADULTS IN BANGLADESH

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Introduction

Stool examination is a common investigation in Bangladesh. Besides the usual reporting about the presence of larva, ova, protozoa and cysts, many other findings are also important for the proper assessment of the clinical conditions.

Intestinal parasites are common in Bangladesh (Kunz, 1960;¹ Muazzam and Ali; 1961;² Muazzam, 1962;³ Khan and Muazzam, 1962;⁴ Muazzam, 1963.⁵ 1964,⁶ Khan and Muazzam, 1965;⁷ Khan and Muazzam, 1966,⁸ Muazzam, 1966;⁹ Muazzam et al. 1968).¹⁰ In all these papers only intestinal parasites were reported. The present paper deals with all the microscopic findings of stool examination and hence reported as stool analysis. Moreover, in the paper of Kunz, (1960)¹ only children were the subjects of study, in the paper of Muazzam, et al (1968)¹⁰ both the infants and children were included, while in all the other papers subjects of all ages were included. It is obvious that findings of stool examination will vary in different age groups. Muazzam and Muazzam (1992)¹¹ and (1994)¹² published papers on stool analysis of 3000 children (1994) and 1000 infants (1992).

Earlier Muttalib et al. (1976)¹³ published a paper on intestinal parasites in Rural children of Bangladesh, in a small area. In this paper only the findings of the adults are reported.

Materials and Methods

Stool specimens were referred to the Ibn Sina Laboratory by the consultants. The patients belonged to different parts of the country but mostly from the city of Dhaka and its suburbs. The specimens were examined physically for consistency, colour, presence of blood and mucus and clinically for reaction, presence of occult blood, reducing substance and stercobilinogen when asked for. Then each specimen was examined under microscope both in saline and iodine preparations. Floatation technique (Maplestone, 1934) was adopted when needed.

All the subjects were aged above 12 years.

4000 stool specimens were examined of which 2275 were male and 1725 female subjects.

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Table-1. Showing the microscopic findings of 4000 stool specimens :

Microscopic findings	Number found	Percent	Number in combination with other findings	Total
1. Indigestion	1246	31.15	614	1360
2. Intestinal parasites :				
i. Ova, Ascaris L.	761	19.02	24	785
ii. Ova, Tri. tri	139	03.48	107	246
iii. Ova, Hookworm	72	01.80	16	88
iv. Ova, Ent. Verm	14	00.35	04	18
v. Larva, Str. sterco	10	00.25	10	20
vi. Giardia L.	113	02.82	14	127
vii. Trichom. hom	12	00.30	03	15
viii. Ova, Hym. nana	16	00.40	04	20
ix. Ent. histolytica	143	03.58	28	171
x. Non- Path.amoeba	176	04.40	30	206
3. Acute bacillary dysentery	77	01.92	00	77
4. Non- Sp. colitis	42	01.05	18	60
5. Bl. hominis	256	06.40	174	430
6. Yeasts	70	01.75	26	96
7. No Path findings	853	21.33	-	-
Total	4000	100.00	1072	5072

Table 2. showing the percentage of Intestinal parasites in the present series and previous series in Dhaka.

Name of parasites	percent present in present series (1990-93)	percent present in previous series in (1962-66)
Ascaris lumbricoides	19.02	33.90
Trichuris tri.	03.48	26.70
Hook worm	01.80	28.02
Thread worm	00.35	00.45
Strong stercoralis	00.25	01.50
Hymenolepis nana	00.40	00.42
T. saginata	00.00	00.08
F. busk:	00.00	00.21
Ent. histolytica	03.58	7.40
Giardia lamb	02.82	07.75
Trichom hom.	00.30	01.85
Non- Pathogenic amoebae	04.40	8.10
Total helminths	25.30	62.20
Total intestinal Flagellales	03.12	09.60

Results

Table 1 shows the microscopic findings. 31.15% (1246) specimens showed the evidence of indigestion, 21.33% (853) showed no abnormal findings. Among the intestinal parasites, ascariasis is the most common (19.02%) followed by amoebiasis (3.58%), trichuriasis (3.48%) and giardiasis (2.82%).

Table 2 shows the incidence of intestinal parasites compared to those of previous publications.

Table 3 shows the actual number of intestinal parasites including multiple infections.

Discussion

Due to multiple infection, the actual incidence of certain findings are more as shown in Table 1. The more important finding which is supposed to cause trouble enough to seek medical advice was given preference in giving a diagnosis. The presence of ascaris ova in a patient with acute bacillary dysentery or marked giardiasis, was ignored for diagnosis as ascariasis. The presence of ascaris ova was given preference to trichuriasis, if present together. Table 3 shows the presence of actual number of intestinal parasites including those present in combination with other parasites.

Intestinal parasites :

Ascariasis is the commonest intestinal parasite found in the present series. Table 2 shows that the incidence of ascariasis is much lower than that found in 1961 in Dhaka. The incidences of Hook worm and Trichuriasis are also very low in comparison to previous report in Dhaka. The reason may be the better hygienic living in the city.

The incidence of other intestinal worms is not much changed.

Amoebiasis :

The incidence of Ent. histolytica is almost half than that of the previous study (Table 2). In this regard, it may be pointed out that, the incidence of acute amoebiasis was negligible. The 1961 figure of 7.4% amoebiasis was lower than 11.37% reported in neighbouring West Bengal of India (Dutta and Ghosh, 1955)¹⁴ but the present figure of 3.58% is much lower.

Intestinal flagellates :

The incidence of 7.75% giardiasis in the 1961 series was comparable to 7.5% reported by Dutta & Ghosh (1955) in Indian state of West Bengal. But the incidence of intestinal flagellates in the present series is much lower than in the 1961 series (Table 2).

Other findings :

Important findings other than intestinal parasites are shown in Table 1.

Acute Bacillary dysentery:

The incidence of acute bacillary dysentery characterised by the presence of mucus,

blood, pus cells and macrophages was 1.92% which is slightly lower than 2.1% reported in 1961 series.

Non-specific Colitis characterised by the presence of sheets of mucus, with epithelial cells, pus cells and some red blood cells but not present in all the fields was reported in 42 cases (1.05%). Stool culture could help to distinguish chronic bacillary dysentery and colitis for other causes.

Table 3. Showing actual number of Intestinal parasites including the multiple infections among 4000 adults

Names of parasites	Number of single infection	percent	Number as multiple infection	percent
Helminths :				
1. Ascariasis	761	19.02	785	19.62
2. Trichiuriasis	139	03.48	246	06.15
3. Hook worm	72	01.80	88	02.20
4. Thread worm	14	00.35	18	00.45
5. Hym. nana	16	00.40	20	00.50
6. Strongyloides	10	00.25	20	00.50
Total	1012	25.30	1177	29.42
Protozoa				
1. Ent. histolytica	143	03.58	171	04.27
2. Non-path. amoebae	176	04.40	206	05.15
3. Giardiasis	113	02.82	127	03.17
4. Tri. hominis	12	00.30	15	00.37
Total	444	11.10	519	12.98
Grand Total	1456	36.40	1696	42.40

Blastocystis hominis :

The incidence of this special type of fungus was 6.40%, which is much lower than 20% reported in 1961.

Yeasts :

There were only 1.75% cases of yeast infection in this series .

From the above discussion it shows that all the pathological findings are less than those found in the study made 26 years ago. However, the 31.15% incidence of indigestion is quite significant. Indigestion is labelled for those cases where there were significant number of fat globules, fatty acid crystals or soaps, vegetable cells and starch granules.

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A well conducted necropsy; presented jointly by a clinician who cares for the patient and the Pathologist performing the necropsy, is still unsurpassed as a teaching method. (Anderson, 1979)