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GIARDIASIS AND SOME ASSOCIATED ENTERIC PATHOGENS (With 4 Tables)

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الجيارد وعلاقتها ببعض الميكروبات المعوية الممرضة

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يعتبر طفيل الجيارد بلامبيا من مسببات مرض الاسهال خاصة في الدول النامية وبيسـن الأطفال. وقد أجرى هذا البحث لمعرفة مدى انتشار طفيل الجيارد بلامبيا بين الأطفال وتحديد العلاقة بين الإصابة بالطفيل وبعض المسببات البكتيرية مثل السالمونيلا والشيغلا. أجريت التجارب المعملية على ١٠٠ عينة عشوائية من البراز جمعت من عدد متساو من الأطفال الذكور والإناث سن ٢ - ٦ سنوات ومن بين الأطفال المترددين على دور الحضنة بمحافظة القاهرة والجيزة. دلت النتائج على تواجد طفيل الجيارد بلامبيا في ٣٧,٥% من العينات المختبرة وقد كانت الإصابة أكثر شيوعا في الإناث (٣٣,٣%) عنها في الذكور (١٦,٧%). وكان أعلى نسبة إصابة بالمرض (٧٠%) في الأطفال من ٤ - ٦ أعوام. هذا وقد وجد أن ٦% من العينات المصابة بالطفيل كانت مصحوبة بتواجد ميكروبات الشيغلا، بينما وجد هذا الميكروب في ٢% من عينات البراز السالبة، كما تواجد ميكروب السالمونيلا في ٢,٦٧% من العينات المرجحة للطفيل.

SUMMARY

400 random stool samples were collected from equal number of male and female preschool children (3-6 years old) attending some day care centers in Giza and Cairo Governorates.

Giardia lamblia proved to exist in 37.5% of stool samples examined. Infection was more common among females (55.33%) than males (44.67%). The highest prevalence of the disease (70%) was among the group of 4-5 years old children.

Shigella and *Salmonella* organisms were recovered from *G.lamblia* infected samples in a percentages of 6% and 2.67% respectively. *Shigella* could also be detected in 2% of *Giardia* negative stool samples.

INTRODUCTION

G.lambia is a pathogenic intestinal protozoa with world wide distribution. It has become evident that Giardiasis can be spread in an epidemic form among humans in temperate and cold climates and that the vehicle of spread is drinking water. Water borne Giardiasis has been reported in different countries (MMWR, 1980 and DYKES, *et al.* 1980). Infection may also occur via faeco-oral route as well as from man to man (SCHMIDT and ROBERTS, 1985).

Shigellosis is an acute infectious enteritis of human and it is still often referred to as bacillary dysentery (KEUSCH, 1982).

Salmonellosis is considered as an etiologically significant agent in cases of diarrhoea specially in the first year of life (CVETANOVIC, 1978).

From the public health point of view, this work was accomplished in order to visualize the antagonistic reaction between Giardiasis and bacterial pathogens commonly found in the gut, namely *Salmonella* and *Shigella*.

MATERIAL and METHODS

400 preschool children stool samples were collected from equal number of male and female children, 3 to 6 years old, attending some day care centers in Giza and Cairo.

Each stool sample was examined by both the direct smear method and the formalin ether concentration sedimentation technique for detection of *G.lambia* (MELVIN and BROOKE, 1975).

All the 150 parasitic infested samples together with 50 negative samples were bacteriologically examined for detection of the enteric bacterial pathogens; *Salmonella* and *Shigella* organisms using the technique recommended by BALLEY and SCOT (1982).

RESULTS

Table (1)
Incidence of *G.lambia* in examined samples

Status	No.	%
<i>G. lambia</i> positive cases	150	37.5
<i>G. lambia</i> negative cases	250	62.5
Total	400	100.0

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Table (2): Distribution of examined samples according to age

Age (in years)	No. sample	Giardia +ve		Giardia -ve	
		No.	%	No.	%
3	112	37	24.67	75	30
4	134	54	36	80	32
5	136	51	34	85	34
6	18	8	5.33	10	4
Total	400	150	100.00	250	100

Table (3): distribution of examined samples according to sex

Sex	No. sample	Giardia +ve		Giardia -ve	
		No.	%	No.	%
Male	200	67	44.67	133	53.2
Female	200	83	55.33	117	46.8
Total	400	150	100.00	250	100.0

Table (4)

Incidence of bacterial pathogens in Giardia positive and some negative stool samples

Bacteria	No. of samples	Giardia +ve (150 samples)		Giardia -ve (50 samples)	
		No.	%	No.	%
Shigella Sp.	9	9	6	2	4
Salmonella Sp.	4	4	2.67	0	0
Total	13	13	8.67	2	4

DISCUSSION

It is evident from stool analysis given in Table (1), that out of the 400 stool samples examined 150 samples (37.5%) proved to be infected with *G.lambia*. Higher incidence was reported by SAMY (1986), while lower infection rate among children was detected by NEGM (1983). However the compiled data given by SCHMIDT and ROBERTS (1985) showed that the prevalence of the disease through out the world ranged from 2.4 to 67.5%.

Consulting the results given in Table (2), it is clearly evident that infection rate was comparatively high among group of children ageing 4.5 years. A finding that substantiates what has been reported by BASSIOUNY (1984).

Results reported in Table (3), point out that the rate of infection was comparatively higher among females (55.33%) than among males (44.67%). Such prevalence may be due to the fact that girls have the habit to aggregate close to each other and play with their dolls and other soiled materials thus creating a better chance for infection.

Consulting the results recorded in Table (4) it is evident that *Shigellae* could be isolated from 6% of *G. lambia* infected stool samples, while *Salmonellae* existed in 2.67% of infected stool ones.

From the results achieved one may safely conclude that there is no antagonistic action between *G.lambia* and some enteric bacterial pathogens. Moreover the high incidence of the Giardiasis is expected as the water supply is mostly contaminated through neglected sanitary disposal of body and industrial wastes.

Faecal pollution hazard and enteric diseases constitute a public health problem specially in developing countries where sanitation facilities are inadequate and personal hygiene is lacking.

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