

## Short Communication

### Prevalence of Gastro-Intestinal Tract Infections at Specialist Hospital Sokoto Jan. to Dec. 2008.

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**ABSTRACT:** A retrospective study of the Infections Disease Hospital (IDH) records of Specialist Hospital, Sokoto was conducted from January to December, 2008 to determine the prevalence of gastro-intestinal tract infections (GIT). During the period under review about 2575 cases of GIT were recorded, out of which 1799 (69.8%) cases were of bacterial, 466 (18.1%) cases were of protozoas and 310 (12.0%) cases were helminths (GIT worms). The highest rates of infections were reported in April and December. Bacterial infection of the GIT was more prevalent than those of protozoas and helminths. Few cases of cholera were recorded during the study period.

**Keywords:** Gastro-intestinal tract, infections, incidence, review.

## INTRODUCTION

Gastro intestinal infection is the presence of potentially pathogenic organisms on the surface or in the intestinal tract, which may cause inflammation of intestinal wall or mucosa and also the toxins they secrete. These potential pathogens include bacteria, protozoa and helminthes (Greenwood, 1989). *Salmonella typhi* and *Shigella dysenterae* are classical examples of entero-invasive bacteria (Duerden *et al.*, 1987). *Vibrio cholerae* termed enterotoxigenic, releases enterotoxins that act locally on GIT (Peterson *et al.*, 1992).

Among the bacterial pathogens, *Salmonella* species, *Shigella* species and *Vibrato bacilli* cause typhoid fever, bacillary dysentery and cholera respectively. The acute infections by the bacterial pathogens are characterized by anoxia, headache, remittent fever, abdominal discomfort, constipation, diarrhoea, stool with pus, blood and mucus. *Vibrio cholerae* alters the metabolism and handling of water and electrolytes of intestinal epithelial cells; as a result there is a profuse secretion of fluid into the lumen of the gut (Janet *et al.*, 1987).

Bacteria that cause GIT diseases are termed enteropathogenic, irrespective of their virulence. Enterobacteria penetrate the gastrointestinal

mucosa and produce pathological effects associated with tissue invasion. Both *Salmonella typhi* and *Shigella dysenterae* are classical examples of entero-invasive bacteria (Duerden *et al.*, 1987).

Pathogenic protozoans associated with gastrointestinal tract include *Entamoeba histolytica* (Amoeba), *Giardia lamblia* (flagellate) and *Balantidia* spp. (a ciliate) which cause amoebiasis, giardiasis and balantidiasis, respectively (Prekarski, 1986). The general symptoms include abdominal pain, flatulence and frequent passage of loose stools. Other symptoms are fever, malaise, diarrhoea etc. some light infections by these organisms are asymptomatic (Mackey *et al.*, 1989).

Fawell *et al.* (1996) stated that: "Of the intestinal protozoan pathogens *Entamoeba histolytica* is the most prevalent world wide". Person to person spread and contamination of food by infected food handlers appear to be the most significant means of transmission, although contamination of drinking water also plays a role. The parasite invades intestinal mucosa, resulting in shallow ulcer with undermined edges. The faeces passed contain cyst. Fever is present, weight loss is usually severe; localized granulomatous masses (amoebomas) may develop (Chessbrough, 1998).

Among the platyhelminths are nematodes, cestodes and trematodes. Species implicated are *Ascaris lumbricoides*, *Trichuris trichuira*, *Taenia saginata*, *Ancylostoma duodenale*, *Necator americana* etc. which inhabit the intestinal tract and cause infections. The major clinical features of *Ancylostoma duodenale* and *Necator americana* diseases are: dermatitis, pulmonary infiltrates with eosinophilia, indigestion and iron deficiency anaemia (David, 1990).

Nematodes infections are more frequent in tropical countries or areas where poor sanitation provides opportunities for faecal-oral transmission. Eggs are excreted in the faeces, and their thick wall enables them to survive for many months or years in cold and dry conditions. Temperatures above 60°C destroy the eggs (Smyth 1987; Stoll, 1999).

The mode of transmission of *Salmonella species*, *Shigella species*, *Vibrio cholerae*, *Entamoeba histolytica* and platyhelminths is directly through faecal contamination of the environment, food, hand or water supply (Tortora *et al.*, 1992). The disease may be transmitted by anything that comes in contact with contaminated water, which include raw fruits, vegetables, cooking utensils, as such water is considered to be an important vehicle of transmission of GIT infections especially in rural areas or under developed countries where there is poverty, poor environmental sanitation and personal hygiene, absence of potable water supply” (Olayinka, 1996). Furthermore, William *et al.* (2003) wrote: “The stools of people infected with pathogens contain the organisms even if they themselves are not sick. If these organisms (germs) from the stool contaminate food or water, they can be swallowed by other people, which spread. This process is called faecal-oral transmission”.

This work is a retrospective study of the records IDH, Specialist Hospital Sokoto from January to December 2008 to determine the prevalence of gastro intestinal tract infections.

## METHODOLOGY

### Study Area

The Specialist Hospital (SHS) is situated in Sokoto metropolis, the capital of Sokoto State

Nigeria. The hospital attend to cases from Sokoto, Wamakko, Dange Shuni, Kware, Bodinga and other referred cases from neighbouring local government areas.

The data for this study were obtained from medical record department of the hospital, which is concerned primarily with keeping records of the cases reported in the Hospital. Permission to collect data from the relevant registers was given by the hospital authority. IDH registers containing cases on GIT infections from January – December, 2008 were examined. Information on GIT infections was extracted and non GIT cases were ignored. Bacterial GIT cases, protozoa GIT cases and helminths were classified based on the information in the Registers. The data obtained was analyzed using descriptive statistics such as percentage and mean rates of infection of the GIT cases in January – December, 2008.

## RESULTS

During the period of this retrospective study, 2575 cases of GIT were recorded (Table 1). Out of which 277 were bacillary dysentery, 1512 Typhoid fever, 10 Cholera, 373 Amoebiasis, 31 Balantidiasis and 62 cases of Giardiasis. Others include 50 cases of Ascariasis, 216 cases of Hookworms, 28 cases of Taeniasis and 15 cases of Trichuriasis. The distribution of the cases based on causative agents showed that, 1799 (69.8%) are bacterial, 466 (18.1%) protozoan, and 310 (12.0%) of helminths infections. Higher cases of GIT infections were recorded in April and December 2008 with a total of 266 (10.3%) and 255 (10.0%) respectively. This was followed by November and March with the total of 233 (9.0%) and 230 (8.9%) respectively. Bacterial GIT infections were high in November, December and May. Decrease was noticed in January to April, so also in June to July.

## DISCUSSION

The highest monthly specific rates of gastro-intestinal tract infections were recorded in April, November and December of the year. The reasons could be due to possible contamination of foods such as vegetables, tomatoes, onions and fruits which are mostly grown by local communities (Kwalkwalawa, More, Bodinga, and Wamakko) that are dwelling in the suburb of the Sokoto

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town. The rates of diseases are higher due to availability of these food stuffs in the market at this period of the year i.e. October to December,

during which all the streams, lake, river, or wells are contaminated with faeces or animals.

**Table 1:** Monthly Specific Rates (%) of GIT Infections SHS (2008)

Month	Bacterial GIT cases	Monthly Specific Rates (%)	Protozoan GIT cases	Monthly specific Rate (%)	Helminthiasis (GIT worms)	Monthly specific Rate (%)	Total	Specific rate (%)
JAN	140	64.2	48	22.0	30	9.4	218	
FEB	128	71.5	30	16.7	21	4	179	8.4
MAR	159	69.1	41	17.8	30	6	230	6.9
APR	179	66.9	50	18.8	38	8	266	8.9
MAY	158	72.8	37	17.1	22	6	217	10.3
JUNE	135	68.8	35	17.8	26	1	196	8.4
JULY	122	62.5	40	20.5	33	4	195	7.6
AUG	131	67.1	43	22.0	21	11	195	7.5
SEPT	128	64.9	39	19.7	30	2	197	7.5
OCT	140	72.1	30	15.4	24	8	194	7.6
NOV	192	82.4	24	10.3	17	2	233	7.6
DEC	188	73.7	49	19.2	18	1	255	7.5
<b>TOTAL</b>	<b>1,799</b>	<b>69.8</b>	<b>466</b>	<b>18.1</b>	<b>310</b>	<b>62</b>	<b>2575</b>	<b>9.0</b>
<b>X(MEAN)</b>	149.9		38.8		25.8	5.16	214.5	

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