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THE INCIDENCE OF ASCARIASIS AMONG PUPILS IN NSUKKA, ENUGU, STATE, NIGERIA

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ABSTRACT

The incidence of Ascariasis among pupils was investigated in Nsukka, Enugu State, Nigeria. The school pupils were randomly selected from the primary schools - Community Primary School, Onuiyi and Central School, Enugu-Ezike, both in Nsukka, Enugu State. Faecal samples of one Hundred and Fifteen (115) pupils were collected and examined. The overall incidence of *Ascaris lumbricoides* was 11.3%. Central School, Enugu-Ezike had a higher infection/incidence rate (20%) while Community Primary School, Onuiyi had an infection rate of 6.7%. Male pupils were more infected (17.3%) than females (6.3%). Pupils in the age range of Eight to Ten years (8-10years), also showed the highest infection rate (16.7%) When compared with other age groups.

Keywords: Ascariasis, Incidence, Pupils, Infection and Hygiene.

INTRODUCTION

Ascariasis is an intestinal infection caused by the parasitic worm, *Ascaris Lumbricoides*, which is part of a family of parasites know as the soil transmitted Helminths. Ascariasis is the most common Helminthic infection with an estimated worldwide prevalence of twenty-five percent (0.8-1.22 Billion People). The High global prevalence of Ascariasis ultimately results in 20,000 deaths per year, mainly due to intestinal obstruction (Chijoke et al, 2011)
Usually asymptomatic, ascariasis is most prevalent in the children of tropical and developing countries where they are perpetuated by contamination of soil by human faeces, or use of untreated faeces as fertilizer and for irrigation purposes (Albonico et al, 1999). Infection is acquired via faecal-oral transmission through ingestion of food, water or soil contaminated with embryonated eggs (Gaash, 2004)

Ascariasis have been studied in Nigeria by various workers. These reports gave the estimates of endemicities and epidemiological picture of this parasitic infection in the different parts of the country using the microscopic examination of ova in faeces. Studies have shown that ascariasis is quite common in Ogun State (Sam Wobo et al, 2004), and also in Enugu State (Nwaorgu et al, 1998). In Calabar, the prevalence of ascariasis was as high as 64.4% (Anal M.U et al, 2008) Availability of basic social and health amenities remain a major problem in Nigeria as in most third world countries therefore, the problem of worm infestation has persisted. This present survey is aimed at investigating the incidence and epidemiology of Ascariasis in Nsukka Local Government Area, Enugu State, Enugu State, Nigeria.

II MATERIALS AND METHODS

Study Area and specimen collection samples were collected from school pupils attending Community Primary School, Onuiyi and pupils from central school, Enugu- Ezike, both in Nsukka, Enugu State, Nigeria.

Nsukka is located in South-Eastern part of Nigeria and is characterized by poor environment sanitation especially in areas with high density population. Onuiyi is an area in Nsukka town (Sururban Area) while Enugu – Ezike is a typical rural area which lacks basic social amenties. Enugu – Ezike has a population made up of mostly farmers and local traders. Both regions are characterized by two major seasons, the rainy and dry seasons. Stool samples were collected from the pupils of two schools and each volunteer was assigned a reference number according to their names, age and sex.

PARASITOLOGICAL EXAMINATION

The samples were transported to the laboratory and each was examined using the direct wet mount and formol-ether concentration methods. For the wet mount, each stool specimen was well mixed and 1 gram emulsified in normal saline and stained with iodine for microscopic examination. For the formol-ether concentration method, sediments from centrifuged specimen was placed on a slide and examined understand a microscope using X10 and X40 objectives.

RESULTS

A total of 115 people were examined. The volunteers were aged between 5-16 years, Ascariasis was detected in 13 children (11.3%) Central School, Enugu- Ezike showed higher incidence rate (20.0%) with 8 of the 40 pupils investigated, positive for Ascariasis infection, while 5 pupils (6.7%) of community Primary School, Onuiyi were infected.

Four age groups: 5-7, 8-10, 11-13 and 14-16 years were included in the study. The highest incidence was among the 8-10 years age group of which (16.7%) were infected. However, of the exsmined 28 samples in 5-7 years age group, 2 (7.1%) were infected, while of the 47 samples examined in the 11-13 age group, 5(10.6%) were infected. There was no infection in the age range of 14-16 years. With respect to gender, the incidence of occurrence of Ascariasis was higher in males (17.3%) than in females (6.3%)

Table 1 : Incidence of Ascariasis Among Pupils in Nsukka, Enugu State, Nigeria.

STUDY AREA	NO EXAMINED	NO INFECTED	% INFECTED
Comm. Pry. Sch. Onuiyi	75	5	6.7
Central School, Enugu- Ezike	40	8	20.0
All Areas	115	13	11.3

TABLE 2: Age related incidence of infection

AGE GROUPS (YEARS)	NO EXAMINED	NO. INFECTED	% INFECTED
5-7	2.8	2	7.1
8-10	36	6	16.7
11-13	47	5	10.6
14-16	4	-	-
All ages	115	13	11.3

TABLE 3: SEX- RELATED INCIDENCE RATE OF INFECTION

SEX	NO. EXAMINED	NO. INFECTED	% INFECTED
Males	52	9	17.3

Females	63	4	6.3
TOTAL	115	13	11.3

IV DISCUSSION

The results attained from this study shoed that 13 (11.3%) of the 115 pupils were positive for Ascarasis Infection. The incidence of Ascariasis recorded in this study is similar to that obtained when Uneke et al. (2007) conducted a research among school children in Onicha, Ebonyi State, in that a low incidence rate of infection was observed.

The low incidence can be attributed to improved sanitation and hygiene. The reason for the higher infection rate recorded in Central school, Enugu- Ezike might be as a result of location, which is in a rural area. The pupils belong to a socio economically more backward community, whose parental occupation is mostly farming, unlike the pupils of community, primary school, Onuiyi, whose families are more privileged.

The higher infection rate observed in age group 8-10 years can be attributed to the carefree attitude during recreational and physical activities observed in children of that age group. Male pupils were more infected (17.3%) than female pupils (6.3%). This coincided with the results observed by Sam-Wobo et al (2004) when they studied the re-infection patterns of Ascariasis among school children in Ogun State, Nigeria. The low infection rate observed in this study can also be attributed to periodic deworming of children by their guardians/ parents which is fast becoming a common practice among families. High Prevalence of infection is closely related with poverty, poor environmental hygiene and impoverished health services.

CONCLUSION

Ascariasis is found in association with poor personal hygiene, poor sanitation, and in places where human faeces are used as fertilizer. Improved sanitation and hygiene in developing countries will reduce the risk in those areas. Also, preventive (Prophylactic) treatment with deworming medications may be advised in high incidence areas. Economic development, proper education of parents and children, poverty eradication if possible will greatly assist in the reduction of the incidence rate of Ascariasis in endemic areas.

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