

INTESTINAL PARASITIC INFECTIONS IN PREGNANT WOMEN  
ATTENDING ANTENATAL CLINIC IN GENERAL HOSPITAL IGARRA,  
EDO STATE, NIGERIA.

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**ABSTRACT**

**INTRODUCTION**

Intestinal parasitic infections have become a major health threat in developing countries. Many cases of unexplained pregnancy loss are due to undiagnosed tropical diseases, Malnutrition or anaemia caused by intestinal worms.

**MATERIALS AND METHODS**

Stool samples were collected from 101 consecutive pregnant women who consented to participate in the study at General Hospital Igarra, Edo State, Nigeria. Each stool sample was

examined microscopically for the presence of ova and cysts, using iodine and concentration methods.

**RESULTS**

The prevalence of helminthic infection was 18.8%. Only *Ascaris lumbricoides* (13.9%) and *Trichuris trichuria* (5.0%) were detected. 18.8% of samples screened had multiple infections. There was no significant difference between the mean hemoglobin levels in both infected pregnant women and uninfected pregnant women.

**CONCLUSION**

The poor socio-economic status of the women coupled with poor environmental sanitation and lack of clean potable water

supply may have contributed to the helminthic infections.

**KEYWORDS.** Igarra hospital, infection, parasitic, pregnant.

## INTRODUCTION

Intestinal parasitic infections have become a major health threat in developing countries. About 1.25 billion people are estimated to be infected with hookworm, with an associated morbidity and mortality in 151 million and about 65,000 people respectively<sup>1</sup>. Many cases of unexplained pregnancy loss are due to undiagnosed tropical diseases, malnutrition or anaemia caused by intestinal worms<sup>2</sup>. Infections with helminthes and protozoa have adverse effects on children<sup>3,4,5</sup> and pregnant women<sup>6,7</sup>.

In developing countries, young women, pregnant women and their infants and children frequently experience a cycle where malnutrition and repeated infection, including parasitic infections lead to adverse consequences that can continue from one generation to the next<sup>8</sup>. Among parasitic infections, malaria and intestinal helminthes coexist widely with micronutrient deficiencies and contribute importantly to anaemia and the cycle of retarded growth and development<sup>9</sup>. It has also been reported that the occurrence of helminthic infection at high rates among pregnant women is indicative of fecal contamination of soil and domestic water around living environment due to poor sanitation and improper sewage disposal<sup>10</sup>. The aim of this study is to identify significant parasitic infection in pregnant women especially those that can cause iron deficiency anaemia and also proffer ways and means of reducing this vicious cycle of parasitic infection.

## MATERIALS AND METHODS

### Area of study:

Igarra is a rural community located in the northern part of Edo State.

Nigeria. Samples were collected in the state owned General hospital which is highly patronized by the community.

## SUBJECTS

The subjects for this study are 101 consecutive pregnant women that attended antenatal clinic in General Hospital Igarra between September and November 2010. Those who had used any anthelmintic within a month before or during the study period were excluded from the study. Verbal consents were obtained from the participants. A Questionnaire which captured the biodata, socio-demographic, educational and economic status was administered on those who consented. Ethical clearance was obtained from the management of the hospital before the study was commenced.

## SAMPLE COLLECTION AND ANALYSIS

The patients were given universal sterile bottle containing 5 ml of 10% formal saline solution each, and they were asked to add about two grams of their fresh faeces into the container. The specimens were submitted within one hour for analysis. Wet slide preparations of each stool sample were prepared in normal saline and lugols iodine, then examined microscopically for the presence of trophozoites, cysts, oocysts, larvae and ova by using x 10 and x 40 objective lenses. The formal ether stool concentration method<sup>11</sup> was also used to detect cysts and ova.

Statistical analysis was done using SPSS software. Chi-square test was done and p values of less than 0.05 were considered significant.

## RESULTS

Thirty eight stool samples were found positive for intestinal parasites.

The overall prevalence of intestinal parasites was 37.6%. Table 1 shows the distribution of parasites in the examined stool samples. Multiple infections by *Ascaris lumbricoides* and *Trichuris trichuria* had the highest prevalence of 18.8%, followed by *Ascaris lumbricoides*

*infection* alone (13.9%), while *Trichuris trichuria* infection alone was least with the prevalence rate of 5%. The prevalence of helminthiasis in pregnant women of different age group is shown in Table 2.

**TABLE 1: PREVALENCE OF INTESTINAL HELMINTHS AMONG PREGNANT WOMEN**

PARASITE	CLASS OF PARASITE	FREQUENCY & PERCENTAGE
<i>Ascaris lumbricoides</i>	Helminthes	14 (13.9%)
<i>Trichuris trichuria</i>	Helminthes	5 (4.9%)
Multiple infections ( <i>A. lumbricoides</i> & <i>Trichuris trichuria</i> )	Helminthes	19 (18.8%)
Uninfected	Helminthes	63 (62.4%)
<b>TOTAL</b>		<b>101 (100%)</b>

**TABLE 2: PREVALENCE OF HELMINTHIASIS IN PREGNANT WOMEN OF DIFFERENT AGE GROUPS**

AGE GROUPS (YEARS)	NUMBER EXAMINED (E)	NUMBER INFECTED (I)	PREVALENCE OF INFECTION (I/E × 100)
11-20	18	6	33.3%
21-30	60	23	38.3%
31-40	20	8	40.0%
41-50	3	1	33.3%
<b>TOTAL</b>	<b>101</b>	<b>38</b>	<b>37.6%</b>

The highest prevalence of 40.0% was recorded in the 31 – 40 years age group, followed by the 21 – 30 years age group with prevalence of 38.3%. Among the 101 women who were examined for helminthes, 50 belong to the low income

group with 26 positive for helminthes while 21 belonging to the middle income group had 12 positive for helminthes, while none among the 30 belonging to the high income group was positive for parasitic infections.

## DISCUSSION

This study reveals a high prevalence of Ascariasis and Trichiuriasis in pregnant women in Igarra. This high prevalence could be attributed to poor hygiene amongst these rural dwellers arising mainly from lack of good source of water for domestic use. Also their low level of education could be a contributory factor. The high prevalence of helminthic infection coupled with high incidence of multiple infection (Table 1 & 2) is a source of concern, more so because unexplained pregnancy loss have been attributed to malnutrition or anaemia caused by intestinal worms<sup>2,6</sup>. *Ascaris lumbricoides* was the most prevalent in this study (13.9%). This agrees with studies done Enugu, South-eastern Nigeria<sup>12</sup>. The lower helminthic infection rate in the youngest (16-20) and oldest (41-50) age groups compared to the middle aged women (21-30 & 31-40) (Table 2), may be due to their level of hygiene<sup>4,5</sup>. This may be due to the fact that the middle aged women are more concerned with trying to make ends meet due to their poor economic status and so pay little attention to personal hygiene to the detriment of their health. Majority of these women with helminthic infections may be because of their low socio economic status, with concomitant low hygiene practices and lack of portable water supply. Among the 101 women who were examined for helminthes, 50 belong to the low income group with 26 positive for helminthes while 21 belonging to the middle income group had 12 positive for helminthes, while none among the 30 belonging to the high income group was positive for parasitic infections. This shows that intestinal helminthic infection is commoner among

the poor, a finding supported by other research works.<sup>3,4,12</sup>

This study confirms that Ascariasis and Trichuriasis are major health problems in pregnant women in Igarra, although possible effects on foetal well-being were not properly investigated, but this is recommended in further studies. Improved environmental sanitation, provision of portable water supply and sanitary sewage disposal facilities are important in preventing infestation by these helminthes. Regular screening of all pregnant women and treatment for intestinal helminthes at first ante-natal visit, coupled with health education is also important

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