



Intestinal Worm Infestation and Anaemia in Pregnant Women

Krishna Bahadur Raut,¹ Kalpana Silwal,¹ Khagi Maya Pun²

¹Chitwan Medical College, Bharatpur, Chitwan, Nepal, ²Lalitpur Nursing Campus, Sanepa, Lalitpur, Nepal.

ABSTRACT

Introduction: Severe Anaemia during pregnancy is an important contributor to maternal mortality, as well as to the low birth weight which is in turn an important risk factor for infant mortality. We aim to determine the prevalence of anaemia in the region amongst pregnant women and identify their problems and to easily provide them with the clinical services.

Methods: A community based cross sectional study done in PHCRC Chapagaun, Lalitpur from July 17, 2011 to Sep.17, 2011. Data from pregnant women presenting at PHCRC were filled and analysed using standard guidelines from WHO and Indian council of Medical research..

Results: Out of 192 pregnant women, the average age of pregnancy was 21-25 years (46.55), mean haemoglobin (Hb) in pregnancy was 11g/dl. Majority pregnant women are Newar (35.4%) ethnicity, 67.7% of them housewives and 31.5% have primary level education. Only 24% was found to have their haemoglobin level in anaemic range. Among the pregnant women (n) =192; 48 (25%) had worm infestation, 119 (62%) had negative stool report and 25 (13%) had other than worms were found. Only about one third of the sample has actually taken albendazole.

Conclusions: Anaemia is prevalent in pregnant women of PHCRC, chapagaun and there was a significant correlation between anaemia and worm infestation. However, the relation among the haemoglobin level, iron, folic acid and albendazole was not significant.

Keywords: anaemia; infestation; pregnant women; worm.

INTRODUCTION

Anaemia is a major factor in women's health, especially reproductive health in developing countries. Severe Anaemia during pregnancy is an important contributor to maternal mortality, as well as to the low birth weight which is in turn an important risk factor for infant mortality. Even moderate anaemia makes women less able to work and care for their children.¹

Anemia is the commonest nutritional problem worldwide with its highest prevalence among young children and pregnant women.² It is especially more common in developing countries because of poor nutrition and high prevalence of parasitic infestation. Prevalence of Anemia among pregnant women in developing

countries is higher than in developed countries.³ Association of anaemia with adverse maternal outcome such as puerperal sepsis, antepartum haemorrhage, postpartum haemorrhage and maternal mortality is no longer a debatable issue. That is why early diagnosis and treatment of anaemia is very important in pregnant women.⁴

Aim of the study was to assess the Correlation of Intestinal Worm Infestation and Anaemia and find out the Prevalence of worm infestation and anaemia and

Correspondence: Dr. Krishna Bahadur Raut, Chitwan Medical College, Bharatpur, Chitwan, Nepal. Email: drkrishna@gmail.com, Phone: +977-9860314953.

also Correlate anaemia with albendazole and education level in Pregnant women presenting at Primary Health Care and Resource Centre; Chapagaun, Lalitpur.

METHODS

A community based cross sectional study was conducted in PHCRC Chapagaun, Lalitpur. was carried out from July 17, 2011 to Sep17, 2011. A proforma was prepared according to standard guidelines from WHO and Indian council of Medical research. Ethical approval and patient consents were taken.

Pregnant women visiting PHCRC Chapagaun were included in the study. They were distributed the proforma. Data were collected and analysed using Microsoft excel 2007.

RESULTS

Out of 192 pregnant women, the average age of pregnancy was 21-25 years (46.55), mean haemoglobin (Hb) in pregnancy was 11g/dl. The age of the sample varied greatly from 16 years to 36 years, similar with the weeks of gestation from 7 weeks to as late as 38 weeks (Table 1). Majority pregnant women are Newar (35.4%) ethnicity, 67.7% of them housewives and 31.5% have primary level education. Only 24% was found to have their haemoglobin level in anaemic range. Among the pregnant women (n) = 192; 48(25%) had worm infestation, 119(62%) had negative stool report and 25 (13%) had other than worms were found. Only about one third of the sample has actually taken albendazole. About half of the pregnant women taking iron, had their haemoglobin level lower.

Total 34.90% of the total sample has actually taken albendazole during the course of their pregnancy (Table 2). Table 3 shows the correlation between current medication and anaemia of total sample 21 were taking folic acid, 102 were taking iron and 67 were taking albendazole. Patient with higher education level has less anemia (Table 4) and its significance (Table 5).

Table 1. Mean values of age, weeks of gestation and Haemoglobin level.

Parameters	Sample Size (n)	Minimum	Maximum	Mean	Std. Deviation
Age	192	16	36	23.73	4.010
Weeks of Gestation	192	7	38	25.11	7.052
Haemoglobin	192	9	15	11.31	1.036

Table 2. Haemoglobin level compared with whether Albendazole taken or not.

		Albendazole Taken		Total
		Yes	No	
Haemoglobin Level(gm/dl)	9	0	1	1
	9.8	1	1	2
	10	14	29	43
	11	23	44	66
	12	20	37	57
	12.4	0	0	1
	13	7	11	18
	14	1	2	3
	15	1	0	1
Total		67	125	192

Table 3. Haemoglobin level compared with the current medication taken.

		Current Medication				Total
Folic Acid		Iron	Albendazole	Others		
Haemoglobin Level(gm/dl)	9	0	1	0	0	1
	9.8	0	1	1	0	2
	10	1	28	14	1	43
	11	4	39	23	1	66
	12	10	25	20	2	57
	12.4	0	1	0	0	1
	13	5	6	7	0	18
	14	1	1	1	0	3
	15	0	0	1	0	1
Total		21	102	67	4	192

Table 4. Relation of anaemia with pregnant women taking albendazole, education level and worm infestation

		Anaemia		Total
Present		Absent		
Albendazole	Taken	15	52	67
	Not taken	31	94	125
Total		46	146	192
Education level	Higher	6	19	25
	Lower	40	127	167
Total		46	146	192
Worms	Present	25	23	48
	Absent	21	123	144
Total		46	146	192

Table 5. Results of Chi square test with anaemia Vs albendazole, worms and education level.

Title	Chi square value	Result
Albendazole taken Vs Anemia	0.709	Not significant
Worm Vs Anemia	0.00	Significant
Education Vs Anaemia	0.996	Not significant

DISCUSSION

Hookworm infection has long been recognized among the major causes of anaemia in poor communities, but understanding of the benefits of the management of hookworm infection in pregnancy has lagged behind the other major causes of maternal anaemia.⁵

Among the sampled population only 24% was found to have their haemoglobin level in anaemic range. Since most were in third trimester this could have increased this value as it is expected to have lower level of haemoglobin in 3rd trimester. It is a physiological process in pregnancy to have lower level of haemoglobin in third trimester that's why we advise patient to have haemoglobin level check-up during this time⁶ From the study 24 percent patient had their haemoglobin level in anaemic range and the cause cannot be established as to whether it is due to worm infestation or due to physiological cause with superimposed worm infestation.

However, being a suburban area, the education level should have been more than just primary level for most of the patients. However, the education level is expected to go higher with rapid urbanization of this area. This is one area of concern that this place being so near to the city area, still the mothers are not well educated. One reason that we got majority of patient and primary education is that those with higher education and socioeconomic status might have their ANC and medical needs addressed at city hospitals.

Study Showed that more than half of the sampled population was using iron supplement. Well actually

the value should have been higher than this as iron is provided free of cost by government of Nepal. Surprisingly, only 33.7% of sampled population has been taking albendazole.

When stool exam was performed most of the patient had negative results for worms. Among those who had worms it was seen that roundworm was the most common. From this we can say that significant number of patient have worm infestation in the sampled population.

It is a general understanding that patients who had taken albendazole should have lesser worm infestation and thus better hemoglobin level. In this study it was seen that only one third of the sample has actually taken albendazole and of those taken about one third still had hemoglobin level in anemic range. Similar was the result with the patient who has not taken albendazole.

Since this study was conducted in one PHC and the sample were the pregnant women visiting for ANC visit, so this study could not include the pregnant woman who does not visit for ANC check-up. Due to time constrain and low ANC visit at the PHC; adequate sample size could not be included. Due to small sample size the results may not be generalized. Furthermore, reliability and validity of lab test could not be assessed due to budgetary constrain.

CONCLUSIONS

This study concludes that the anaemia is prevalent in pregnant women of PHCRC, chapagaun. This study found that there was a significant correlation between anaemia and worm infestation. However, this study showed that the relation among the haemoglobin level, iron, folic acid and albendazole was not significant

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