



STUDY ON PREVALANCE OF ANEMIA IN PREGNANT WOMEN ATTENDING ANTENATAL CLINIC IN TERTIARY CARE CENTER

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ABSTRACT

Background: Low haemoglobin level is a major cause of morbidity and mortality in pregnant women in developing countries and has both maternal and fetal consequences. The objective of the present study was to evaluate the prevalence of anemia among pregnant women attending antenatal checkup **Methods:** It is a hospital based cross-sectional observational study conducted in the department of Obstetrics and Gynecology and department of pathology at government sivagangai Medical College and Hospital, Tamilnadu. A total of 500 cases were studied and screened. Prevalence of anemia was calculated. Anemia was classified morphologically based on peripheral smear findings and classified as microcytic hypochromic, macrocytic, dimorphic anemia, normocytic normochromic anemia and normocytic hypochromic anemia. Based on hemoglobin values anemia was classified into mild, moderate, and severe anemia. **Results:** Prevalence of anemia in pregnancy in rural about 20%. Age-wise, majority of the patients were between 21 to 25 years. Gravida more than 2 were more 66.6% when compared to lower parity. 23.3% suffered with mild anemia, 56.6% with moderate anemia and 20% with severe anaemia. Morphologically, microcytic hypochromic type i.e., iron deficiency anaemia was the most common. **Conclusions:** Anemia in pregnancy is quite high and was found to be 20% in routine antenatal outpatient cases. Multiple pregnancies and low level of education indirectly contribute to anemia of pregnancy. Education and awareness about anemia in pregnancy can lead to better fetal and maternal outcomes.

KEYWORDS : Anemia in pregnancy, pregnant women, Hemoglobin estimation

1.INTRODUCTION

Anaemia has a significant public health burden in developing nations.[1,2] Anaemia is never a diagnosis-it occurs secondary to an underlying disease process. Technically, anaemia defines a state in which an individual's haemoglobin concentration (red cell mass) falls two standard deviations below the reference intervals in a particular population (individuals of similar age, gender and geographical location).[3,4] In other words, the cut-off for anaemia depends on variables such as biologic age, gender, race, altitude above sea level, pregnancy, smoking status and others[5] According to the World Health Organization (WHO) up to 41.8% of all women living in developing countries are anaemic.[6] In India, National Family Health Survey - 2 in 1998 to 99 showed that 54% of women in rural and 46% women in urban areas are anaemic.[7] The relative prevalence of mild, moderate, and severe anemia are 13%, 57% and 12% respectively in India (ICMR data). According to WHO, hemoglobin level below 11 gm/dl in pregnant women constitutes anemia and hemoglobin below 7gm/dl is considered severe anemia. The Center for Disease Control and Prevention (1990) defines anemia as less than 11gm/dl in the first and third trimester and less than 10.5gm/dl in second trimester.[8,9] Serum Ferritin of 15 microgm/L is associated with iron deficiency anemia.[9,10] The objective of the present study was to evaluate the prevalence of anemia among pregnant women attending antenatal check-up

2.METHODS

It was a hospital based cross-sectional observational study conducted in the department of Obstetrics and Gynecology and department of pathology at government sivagangai Medical College and Hospital. A total of 500 cases were and screened and studied. Informed consent was taken from all the pregnant women who were included in the study. No ethical issues were involved in the study. Institutional ethical clearance was obtained 2271/ME/2016. Thorough clinical history was taken from all the cases who attended the antenatal outpatient clinic including gravida, parity, number of abortions, number of live and still births, occupation, personal history, dietary history, socio-economic status and type of family whether joint or nuclear type. General examination was done with special emphasis on signs of anaemia like pallor, icterus, koilonychia, lymphadenopathy and edema. The tests were done on first antenatal visit of the patient irrespective of the trimester. Venous blood samples collected in EDTA of cases were subjected for routine investigations that included Hemoglobin estimation, complete hemogram, peripheral smear examination, reticulocyte count. Peripheral smears were taken from all the samples and stained by Leishman's stain. Morphology of RBC, WBC and platelets were studied. Automated Hematology analyzer was used. PCV, MCV, MCH, MCHC and RDW were determined by the

automated cell counter. Normal values were taken as follows: PCV 35-45%, MCV 77-95fl, MCH 25-33pg, MCHC 31-37gm/dl and RDW 14.5-16.5. Anemia was classified based on hemoglobin values into mild, moderate and severe anemia. Anemia was classified morphologically based on peripheral smear findings and classified as Microcytic hypochromic type, macrocytic type, dimorphic anemia and normocytic normochromic anemia.

Inclusion criteria

All pregnant women attending antenatal clinics
Age group from 18 years to 35 years.

Exclusion criteria

Age group more than 35 years
Pregnant women with chronic medical diseases
Known cases of haemolytic anemias
Bleeding diathesis
Ante partum bleeding.

3.RESULTS

Total number of pregnant women attending antenatal clinic for duration of were 2500. Total number of pregnant women with anemia were 500. prevalence was calculated as 20% prevalence of anemia in pregnancy in a teaching hospital in sivagangai is about 20%. Age of 500 pregnant women with anemia ranged from 18 years to 35 years. The majority of the patients were between ages 20 to 25 years i.e.,58.3% . About 8.3 % of all the pregnancies occurred among teenagers of 18 to 19 years Table no 1 : ANEMIA DISTRIBUTION

Age in years	Microcytic hypochromic	Macrocytic	Dimorphic	Normocytic normochromic
18-19	36	-	14	-
20-25	295	5	43	7
26-30	103	4	11	7
31-35	60	3	10	2
Total	494	12	78	16

In the present study, multigravida was more 66.6% in number. Majority of pregnant women 41.6% with anemia were illiterate in our study who were unaware of folic acid and iron supplementation and importance of proper diet during pregnancy. There were 33.3% that were purely vegetarians and 66.6% cases that had mixed dietary habits of vegetarian and non-vegetarian diet. In the present study majority 66.6% of the pregnant women with anaemia were involved in agricultural work. Only 8.3 % were working in companies as staff. 23.3% suffered with mild anemia, 56.6% with moderate degree of anaemia. 58.3% of pregnant women were between 20-25 years of age

group. Severe anaemia was seen in 20% among all 600 cases. Microcytic hypochromic anemia, i.e., iron deficiency anemia was the most common type of anemia in pregnancy and was seen in 82.3% cases followed by dimorphic type/nutritional deficiency type of anemia seen in 13% cases.

4. DISCUSSION AND CONCLUSION

In the present study, the total number of participants were 500. The age distribution ranged from 18 years to 35 years. The majority of the patients i.e., 58.3% were between ages 21 to 25 years. Next common age group was between ages 26 to 30 years with 20.8% patients. 12.5% (75/600) were among women aged 31 to 35 years. In a study by Bereka et al the range of the respondents' age was 15 to 39 years, with a mean of 22.9 years and a standard deviation of 3.9 years.[10] In the present study, 23.3% suffered with mild anemia, 56.6% with moderate anemia and 20% of pregnant women had severe anemia. Rajamouli et al reported mild anemia in 28.0%, moderate anemia in 36.8% and severe degree of anaemia in 6.9% of their cases.[11] In the present study, prevalence of anemia in pregnancy was about 20%. Rajamouli and coworkers reported higher prevalence of anaemia 43.9% in second gravida and 25.7% in 2nd trimester pregnant women. In the present study, most common type of anemia was reported as microcytic hypochromic type i.e., iron deficiency anaemia followed by folate deficiency anaemia. Almost 75% anaemias in pregnant women are iron deficiency type followed by folate and dimorphic anaemias as reported by other authors.[12] Anemia in pregnancy was found to be 20% in routine antenatal outpatient cases. Multiple pregnancies and low level of education indirectly contribute to anemia of pregnancy. Education and awareness about anemia in pregnancy can lead to better fetal and maternal outcomes.

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