Anemia in Pregnant Women

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ABSTRACT

Objective — *To determine the frequency and severity of anemia in pregnant woman visiting to a tertiary care hospital.*

Study design — *Descriptive case series*

Place & Duration of study — *Department of Obstetrics and Gynecology Unit-4, Bolan Medical Complex Hospital Quetta, from January 2018 to June 2018.*

Methodology — *The study was conducted on all pregnant women attending the Obstetrics outpatient department. Hemoglobin level was detected in BMC laboratory during routine antenatal checkup. Informed consent was taken. Data was analyzed using SPSS version 15.*

Results — *During the study period, out of 1250 pregnant women, 700 were anemic giving the frequency of anemia as 56%. Majority (n= 379 - 54.1%) of patients were between ages of 31 to 40 years. Half (n=350) of the women were multipara and 546 (78%) were in third trimester of pregnancy. Mild anemia was present in 310 (44.3%) and moderate anemia in 245 (35%) women.*

Conclusion — *Anemia was most frequently detected in the last trimester of pregnancy and in multipara women.*

Key words — *Anemia, Multiparity, Pregnancy.*

INTRODUCTION:

Anemia is defined as disease in which either the amount of red blood cells or oxygen carrying capability of red blood cells decreases to meet the body's normal physiological functions.[1] Pregnancy with anemia remains a common health problem in developing nations and is related with high maternal morbidity as well as mortality. According to WHO anemia is defined as hemoglobin percentage less than 11 gm/dl. Nutritional anemia affects people of all ages, but it is more prevalent among gravid women and associated with higher morbidity and mortality in this group. Different studies have revealed change in frequency of anemia throughout pregnancy, fluctuating from 16% to 95%.[2,3] In Pakistan, the prevalence of anemia among females of 15 to 44 years of age is reported to be 26% in urban region and 47% in rural region.[4]

Multiple factors are involved in causing pregnancy related anemia. Folate, Iron, vitamin B12 and vitamin A deficiencies, intestinal parasitic infections, malaria an chronic illness are the main causes of anemia among pregnant women.[5] During pregnancy iron deficiency is comparatively common because of the greater iron demand and several pregnant women start pregnancy with reduced iron stores. The amount of iron absorbed from diet, along with that mobilized from stores is frequently inadequate to meet the demands of pregnant women.[6] Pregnant females and their neonates encounter negative consequence as result of anemia such as abortion, prematurity, intrauterine fetal death, low birth weight

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and perinatal mortality.[7,8] Perinatal mortality rate rises 2 to 3 fold when hemoglobin concentration of mother drops to 8.0 g/dl and further 8 to 10 fold rise in perinatal mortality rate when hemoglobin concentration of mother drops to more than 5.0 g/dl.[9]

Maternal problems due to anemia in pregnancy are poor weight gain, less exercise tolerability, pregnancy induced hypertension, cardiac failure, preterm labour, placenta previa, placental abruption, eclampsia, premature rupture of membranes, thromboembolic problems, postpartum hemorrhage, sub involution of uterus and puerperal sepsis.[10]

During pregnancy and labor mild anemia might have no effect apart from that the maternal iron stores become less and might develop moderate to severe anemia in successive gestations. Tiredness, lack of energy and reduced routine work activities may be caused by moderate anemia. Severe anemia is related with poor maternal and fetal consequences. The mother can have palpitations, breathing difficulty, tachycardia, increased cardiac output leading to cardiac strain which can cause decompensation and cardiac failure which may be fatal.[11] severe anemia increases the risk of maternal mortality and obstetrical hemorrhage is the most common cause of maternal death in unindustrialized nations like India, followed by hypertensive disorders of pregnancy.[12]

Recommendations from NICE guidelines that hemoglobin of pregnant women should be checked for anemia at their first visit and at 28 weeks of pregnancy. Dietary advise should be given to every pregnant woman. Educate mother about iron rich food and also tell them the factors which increase or inhibits the iron absorption. Dietary alterations only are not adequate to correct prevailing deficiency of iron, which may need iron supplements in pregnancy.[13]

In Pakistan with high maternal and perinatal mortality it is imperative to conduct frequent studies to identify common factors that may increase such risks. This study was conducted to find out frequency of anemia in pregnant women in an underdeveloped area of Pakistan. This provides opportunity for policy makers to take measures to address this issue.

METHODOLOGY:

All pregnant women irrespective of gestational age, who came for antenatal check-up to the Obstetric OPD of Bolan Medical Complex hospital unit –IV, from January 2018 to June 2018 were included in this case series. Ethical clearance was obtained from local ethical committee of the institute. All patients were informed about the study. After general physical and obstetrical examination, the patients were referred to BMC hospital laboratory for estimating hemoglobin level. According to WHO 2011 criteria, women with hemoglobin concentrations of <11 g/dl were declared anemic and the severity was additionally categorized as Mild 10 - 10.9 g/dl, Moderate 7 -9.9 g/dl, Severe 4 -6.9 g/dl and very severe <4 g/dl. The statistics were collected on a form and analyzed by using SPSS version 15.

RESULTS:

During the six month study period, 1250 pregnant women were enrolled. According to the blood picture, out of those 1250 pregnant women, 700 were anemic and 550 were non-anemic, giving the frequency of anemia as 56%. Majority of the women were between ages of 31 - 40 years (n=379 - 54.1%). Details are given in table I. Of these 350 (50%) women were multipara and 252 (36%) grand multipara and only 88 (14%) having no parity. Out of these anemic women, 42 (6%) were in first trimester, 112 (16%) in second trimester and 546 (78%) in third trimester of pregnancy. According to the severity of anemia, 310 (44.3%) women had mild anemia, 245 (35%) moderate, 110 (15.7%) severe anemia and 35 (5%) were very severe anemic.

DISCUSSION:

Anemia remains a most important community health issue in the world which leads to higher morbidity and mortality of both mother and fetus. In this study, anemia was was quite frequent during pregnancy. Our figure of 56% is comparable to study done by Olatunbosun et al in Nigeria which was reported as 54.7%.[14] Data from different studies shows that in unindustrialized countries the prevalence of anemia in pregnancy range from 35% to 75%.[15]

Frequency of anemia was found high in a large study done in India that included eleven states. The prevalence of anemia was 87% among 4,775 women at more than 20 weeks of pregnancy which is quiet high than our study.[16] Another study carried out by Anjum et al in Faisalabad district Pakistan showed prevalence of anemia as 75 % which is also higher than our study.[17]

Threat of anemia rises with the increasing gestational period. In our study anemia was higher in second (16%) and third trimester (78 %) when compared with first trimester (6%). This outcome is comparable with another study which also showed that in second and third trimester of pregnancy prevalence

Table I: Demographic Data n=700		
Variables	**No. of patients**	**Percentage (%)**
Age(years)		
< 20	23	3.3 %
21-30	214	30.6%
31-40	379	54.1%
>40	84	12%
Parity		
P0	98	14%
P1-P4	350	50%
>5	252	36%
Gestational age		
0-12 weeks	42	6%
13-28 weeks	112	16%
29-40 weeks	546	78%

of anemia was higher.[18] Furthermore, study conducted in Nepal established that with increased gestational age due to increase in plasma volume, anemia may manifests as pregnancy advances.[19]

The increasing parity is another major risk factor for developing gestational anemia when compared with those who had parity of 2 or less. Regarding association of anemia with parity this study showed that anemia increases with parity as 16% were nulliparous, 50% were up to para 5 and 36% were more than para 5 which is comparable to study done by Shams et al which showed 72.2% of patients with anemia were multiparous patients.[1] This finding was also consistent with study of Elzahrani SS, which found that higher number of pregnancies related complications were related to severity of anemia. This may be owing to the loss of iron, decrease intake and repeated pregnancies.[20]

CONCLUSIONS:

Every second women in this study was found anemic during pregnancy. Pregnant women who are anemic are at higher risk of morbidity and sometimes mortality.

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