

# ANEMIA IN PREGNANCY; RELATED RISK FACTORS IN UNDER DEVELOPED AREA

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**ABSTRACT... Objective:** To see frequency of anemia and its related risk factors in pregnant women in an under developed area of Southern Punjab. **Study design:** Descriptive study. **Setting:** Ante natal outpatient clinic Tehsil Headquarter Hospital Kabirwala (Khanewal). **Duration of the study:** October 2006 to March 2007. **Sampling technique:** Non-probability purposive. **Methodology:** Two hundred and fifty pregnant ladies attending ante natal outpatient clinic at Tehsil Headquarter Hospital Kabirwala (Khanewal) irrespective of reproductive age, socio economic, educational and residential status were included in this study. After taking consent a pre-designed proforma was filled in. Hemoglobin level was checked. Subjects were categorized according to the hemoglobin levels into mild (10.0-10.9 g/dl), moderate (8.0-9.9 g/dl) and severe (< 8.0 g/dl) anemia. **Results:** Two hundred and fifty pregnant women were studied. Mean age of the pregnant women was  $28.28 \pm 5.20$  years. Out of these 250 pregnant women, 138 (55.2%) were anemic and out of these 83 (60.14 %) were moderately anemic while 55 (39.86 %) had mild anemia and none of these had severe anemia. Among participating pregnant women, 28 (11.2 %) were in 1st trimester, 85 (34 %) in 2nd trimester and 137 (54.8%) were in the 3rd trimester. Anemia was observed in 10 (35.71 %) women in first trimester, 35 (41.18%) in 2nd trimester and 93 (67.88 %) in 3rd trimester. One hundred and thirty two women were from rural background, out of these, 83 (62.88%) were anemic. Seventy were uneducated and out of these, 58 (82.88%) were anemic while 180 women were educated and of these 81 (45 %) were anemic. Ninety five (38 %) were having poor dietary habits and out of these, 78 (82.10 %) were anemic. One hundred eight pregnant ladies were not taking any iron supplement, out these 83 (76.85 %) were anemic while 142 (56.8 %) pregnant ladies were taking iron supplements, out of these 55 (38.73 %) were anemic. Twenty one pregnant women were with gravida more than 6 and out of these 19 (90.47 %) were anemic, of these 11 (57.89 %) had moderate anemia while 8 (42.10 %) were mildly anemic. **Conclusions:** The results of present study showed high frequency of anemia in the targeted population. Anemia was related with poor dietary habits especially poor iron intake. Anemia was more related with multi gravidity.

**Key words:** Anemia, Pregnant ladies, Iron deficiency.

## INTRODUCTION

Anemia is defined as the condition in which there is decreased level of hemoglobin than the normal or there is decreased number of RBC's than the normal value<sup>1</sup>.

WHO has recommended a cut off value of 11.0 g/dl for hemoglobin to define anemia at any time during pregnancy<sup>2</sup>.

Anemia is a common problem of underdeveloped countries. Patients of anemia usually have various symptoms especially generalized weakness, easy fatigability and poor concentration etc. If anemia is marked and prolonged it may precipitate cardiac problems. Anemia in pregnancy is a special issue. Here anemia has deleterious effects both on mother as well as on growing fetus<sup>3</sup>. It may lead to premature delivery, low

birth weight and fetal death. Adverse fetal outcome and perinatal complications associated with anemia have also been reported from Pakistan<sup>4,5</sup>. Anemia in pregnancy is mainly due to Iron deficiency<sup>3,6</sup>. By correction of anemia at proper time we can improve maternal and fetal outcome<sup>7</sup>.

The present study was designed to see the hemoglobin levels in pregnant women at Tehsil Headquarter Hospital, Kabirwala. The results of this study will help to motivate ante natal care providers towards early detection and management of anemia in pregnancy.

## SUBJECTS AND METHODS

Two hundred and fifty pregnant ladies attending ante natal outpatient clinic at Tehsil Headquarter Hospital Kabirwala (Khanewal) irrespective of reproductive age,

socio economic, educational and residential status were included in this descriptive study using non-probability purposive sampling technique. The study period was October 2006-March 2007. After taking consent a proforma was filled in. Hemoglobin level was checked. Subjects were categorized according to the hemoglobin levels in to mild (10.0-10.9 g/dl), moderate (8.0-9.9 g/dl) and severe (< 8.0 g/dl) anemia. Data were entered and analyzed using computer program SPSS-11.

## RESULTS

Two hundred and fifty pregnant women during 6 months period from October 2006-March 2007 were selected randomly. The age of the study subjects varied from 17 years to 39 years. Mean age of the pregnant women was  $28.28 \pm 5.20$  years. Out of these 250 pregnant women, 138 (55.2%) were anemic and 112 (44.8%) were having Hb level within normal range. Eighty three (60.14 %) were moderately anemic while 55 (39.55%) had mild anemia. None of the women presented with severe anemia. (Table-I).

Subjects	Frequency	%age
Total anemic	138	55.2%
Severe	-	-
Moderate	83	60.14%
Mild	55	39.86%
Normal	112	44.8%

The para (parity) varied from 0-9 and gravidity varied from 1-10. Twenty one pregnant women were with gravida more than 6 and out of these 19 (90.47%) were anemic, of these 11 (57.89%) had moderate anemia while 8 (42.10%) were mildly anemic. The distribution of anemia with reference to gravidity is given in Table-II.

Among participating pregnant women, 28 (11.2 %) were in 1st trimester, 85 (34 %) in 2nd trimester and 137 (54.8%) were in the 3rd trimester. Out of these, anemia was observed in 10 (35.71 %) women in first trimester, 35 (41.17 %) in 2nd trimester and 93 (67.88 %) in 3rd trimester. Mild anemia was seen in 55 pregnant women,

Table-II. Distribution of anemia with reference to gravidity (n=250)

Gravidity	Moderate anemia	Mild anemia	Normal	Total
1-3	51 (28.17%)	38 (21%)	92 (50.83%)	181
4-6	21 (43.75%)	09 (18.75%)	18 (37.5%)	48
>6	11 (52.38%)	08 (38.08%)	02 (9.54%)	21

out of these 55, 8 (14.54 %) were in 1st trimester, 18 (32.73 %) were in 2nd and 29 (52.73 %) were in 3rd trimester. Moderate anemia was seen in 83 pregnant ladies. Out of these, 3 (3.61 %) were in first trimester, 18 (21.69 %) in 2nd and 62 (74.70 %) in 3rd trimester. One hundred and eighty seven (74.8 %) ladies were house wives, 63 (25.2 %) were working women. Out of these 187 house wives, 68 (36.36 %) were anemic, 40 (21.39%) were mildly anemic while 28 (14.97 %) were having moderate anemia. Out of 63 working ladies 30 (47.61 %) were anemic, 15 (23.80%) had mild and 15 (23.80%) had moderate anemia. One hundred and thirty two (52.8 %) women were from rural background and 118 (47.2 %) were from urban background. Out of these 132 ladies from rural background, 83 (62.87 %) were anemic, 25 (18.93 %) were with mild and 58 (43.93 %) were with moderate anemia. Out of 118 urban ladies, 55 (46.61 %) were anemic, 25 (21.18 %) were moderately anemic and 30 (25.42 %) were mildly anemic.

One hundred and eighty (72 %) were educated and 70 (28 %) were uneducated. Out of these 180 educated women, 81 (45 %) were anemic, 43 (23.88 %) were with moderate and 38 (21.11 %) were with mild anemia. Out of 70 uneducated ladies, 58 (82.85 %) were anemic, 40 (57.14 %) had moderate while 18 (25.71 %) had mild anemia. Ninety five (38 %) were having poor dietary habits (those taking meat, eggs or poultry less than twice per week), 123 (49.2 %) satisfactory (those taking meat, eggs or poultry 2-3 times per week) and 32 (12.8 %) were with good dietary habits (those taking meat, eggs or poultry daily). Among the ladies having poor dietary habits 78 (82.10 %) were anemic, 18 (18.94 %) had mild and 60 (63.15 %) had moderate anemia. Of the 123

having satisfactory dietary habits 55 (44.71%) were anemic, 32 (26.01%) were with mild and 23 (18.69%) were with moderate anemia. Out of 32 with good dietary habits, only 5 (15.62 %) were anemic and all were in the range of mild anemia.

One hundred forty two (56.8 %) pregnant ladies were taking iron supplements, out of these 142, 55 (38.73 %) were anemic, 35 (24.64 %) were having mild and 20 (14.08%) were having moderate anemia. One hundred eight (43. 2%) pregnant women were taking no iron supplements, out of these 108, 83 (76.85%) were anemic, 63 (58.33 %) had moderate and 20 (18.51 %) had mild anemia.

## DISCUSSION

Anemia in pregnant women constitutes a real concern all over the world more so in developing countries. Various studies have reported variable prevalence rates of anemia during pregnancy and it varies from 33% to 75 %<sup>8,9</sup>. In present study frequency of anemia in pregnant ladies is 55.2% while UNO has reported 56% anemia in pregnant ladies from low income group<sup>10</sup>. However a study from Lahore, Pakistan has reported the prevalence of anemia in pregnant ladies as 66 %<sup>11</sup>. Our findings are close to the figures reported by UNO and a small variation from other studies may be due to the selection of study population.

In present study none of the subjects had severe anemia while 60.14 % were moderately anemic and 39.86% had mild anemia. A study from India has reported moderate anemia in 61.1 % of the subjects which is close to our findings<sup>12</sup>. In present study, 11.2 % of the anemic pregnant ladies were in first trimester, 34 % were in 2nd and 54.8 % in 3rd trimester. A study from Pakistan has reported the prevalence of anemia to be 54 % in 3rd trimester, this study also supports our findings. High frequency of anemic patients in 3rd trimester may be due to increased demand of micronutrients during this period in the background of poor dietary habits<sup>3,13,14</sup>.

The dietary habits also affect the hemoglobin level in pregnant women. In our study, 82.10% of anemic women were having poor dietary habits. The same has been

supported by other studies<sup>13,15</sup>.

Different studies have reported iron deficiency as an important cause of anemia in pregnancy<sup>16</sup>.

Similar findings were observed in our study and anemia was seen less common in ladies taking oral iron supplements. It was 38.73 % in ladies who were on iron supplements while it was 83 % in ladies who were not on iron supplements. Increased parity and gravidity have also been associated with more anemia, underlying cause being depleted iron stores<sup>11,15</sup> and our study results also favoure these findings. In our study the parity was 0-9 and gravidity was 1-10 and higher number of anemic women were seen with increasing gravidity.

## CONCLUSION

The results of present study showed high frequency of anemia in the targeted population. Anemia was related with poor dietary habits especially poor iron intake. Anemia was more common in multi-gravida.

## SUGGESTIONS

By correction of anemia in pregnant ladies at initial stage we can ameliorate maternal and fetal complications related to this correctable cause and ladies should be motivated for early antenatal check up. It will also ensure safe motherhood and safe baby. Multi gravida especially in 3rd trimester should be considered for iron supplementation and correction of anemia should be given due importance.

## LIMITATIONS OF THE STUDY

Serum folate level, peripheral blood film microscopy and serum iron profile were not done due to financial constraints.

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Article received on: 08/07/2010

Accepted for Publication: 01/11/2010

Received after proof reading: 00/00/0000

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**Article Citation:**

Taseer I, Safdar S, Mirbahar A, Awan Z. Anemia in pregnancy; related risk factors in under developed area. Professional Med J Mar 2011;18(1): 1-4.

**Don't find fault,  
 find a remedy.**

*Henry Ford*