INTRODUCTION

Pregnancy represents stress period and increased demand of nutrients for both the mother and the fetus. Pregnancy frequently accompanies anemia with unpleasant effects on the mother. Anemia may be defined as a hemoglobin level below the 5th percentile of a trimester-specific hemoglobin reference level in iron supplemented women. The rate of anemia among women participating in public health nutrition programs is approximately 8% in the 1st trimester, 12% in the 2nd trimester, and 29% in the 3rd trimester (CDC, 1998).

According to a report of World Health Organization (WHO) in 2008, anemia affects 1.62 billion (24.8%) people worldwide. In pregnancy this rate rises to 42% in pregnant women and is a major cause of maternal death (WHO, 2008; De Benoist, 2008). Prevalence of anemia in all the age groups is much greater in developing countries including Pakistan and India in contrast to developed countries (US, 1993). Rate of anemia in South Asian countries is among the greatest in the world. Observational studies in US and Europe shows conflicting outcome about the clinical implication of maternal anemia during pregnancy (Kalaivani, 2009; Steer 1995). In Pakistan, the rate of anemia among married women of age ranges from 15 to 44 is reported to be 26% and 47% in urban and rural areas.
areas respectively (Fatmi, 2007).

Thrombocytopenia is second most common hematologic anomaly after anemia encountered during pregnancy. The occurrence of a platelet count < 150 x 10^9/L in the 3rd trimester of pregnancy is 6.6 to 11.6%. Gestational thrombocytopenia appears to be a modification of the physiologic thrombocytopenia that accompanies normal pregnancy (Tygart, 1986; Ahmed, 1993). There is not enough data available to pinpoint the exact cause and prevalence of thrombocytopenia in Pakistan as only a limited number of studies have been done to find out the prevalence of thrombocytopenia in pregnancy in Pakistan and the limited studies which have been conducted shows either reduce or no change of the platelet count (Giles, 1981; Burrows, 1988; Sill, 1985).

Different classes of thrombocytopenia are recognized based on the platelet count. The platelet count of less than 150,000/L is typically known as Thrombocytopenia (Shehata, 1999; Burrows, 1990). The platelet counts from 100,000 to 150,000/L is considered mild thrombocytopenia, levels ranging from 50,000 to 100,000/L are considered as moderate thrombocytopenia and levels less than 50,000/L are considered as severe thrombocytopenia (Magann, 1999).

**MATERIALS AND METHODS**

Current study was conducted to evaluate the prevalence of anemia and thrombocytopenia in pregnant women. Blood samples of pregnant females were collected from Jinnah hospital Lahore to see the frequency of Anemia, thrombocytopenia in pregnant women. It was hospital based study done from May 2014 to September 2014. Total 200 (n=200) pregnant women ages 18-40 years, were selected using simple random sampling technique from Gynecology unit. Blood samples were collected from every pregnant woman for the measurement of Hemoglobin and Platelets counts. Blood specimen was collected with minimum stasis from the anti-cubital vein using a sterile dry disposable needle & syringe. 3ml of blood was dispensed into EDTA anticoagulant tubes. The specimens were labeled with patient’s age, sex & identification number. Haemoglobin and platelets were measured by using hematology analyzer Sysmex (KX-21N). Calibration of instrument and processing of samples were done according to manufacturer's directions. The WHO standard Hb level of 12 g/dl was used as a benchmark (WHO, 2001). Women with Hb level more than 12g/dl were considered normal. Anemic women were further investigated to determine the underlying causes of anemia by haematological and biochemical tests. Thrombocytopenia is said to be present when the platelet count of the patient is less than 150 x 10^9 / L. The normal range for platelets in the non-pregnant woman is 150 to 400 X 10^9 / L.

**RESULTS**

Total 200 pregnant women who were admitted in Gynecology ward of Jinnah hospital were included in this study. Data showed that total 70.5% of the pregnant females were anemic. 3% were severely anemic (Hb <6 g/dl). 22% were found moderate anemic (Hb 6-9 g/dl) and 45.5% were found mild anemic (Hb 9-11 g/dl) and

**Table 1: Hemoglobin (mg/dl) levels of Pregnant Females**

<table>
<thead>
<tr>
<th>Hemoglobin (mg/dl)</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>9-11</td>
<td>91</td>
<td>45.5</td>
</tr>
<tr>
<td>6-9</td>
<td>44</td>
<td>22.0</td>
</tr>
<tr>
<td>&lt;6</td>
<td>6</td>
<td>3.0</td>
</tr>
<tr>
<td>&gt;11</td>
<td>59</td>
<td>29.5</td>
</tr>
<tr>
<td>Total</td>
<td>200</td>
<td>100.0</td>
</tr>
</tbody>
</table>

**Table 2: Platelet Count (10^9/L) of Pregnant Females**

<table>
<thead>
<tr>
<th>Platelet count (10^9/L)</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>100-150</td>
<td>20</td>
<td>10.0</td>
</tr>
<tr>
<td>50-100</td>
<td>9</td>
<td>4.5</td>
</tr>
<tr>
<td>&lt;50</td>
<td>4</td>
<td>2.0</td>
</tr>
<tr>
<td>&gt;150</td>
<td>167</td>
<td>83.5</td>
</tr>
<tr>
<td>Total</td>
<td>200</td>
<td>100.0</td>
</tr>
</tbody>
</table>

**Table 3: Age groups of Pregnant Females**

<table>
<thead>
<tr>
<th>Age</th>
<th>Frequency</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-25</td>
<td>67</td>
<td>33.5</td>
</tr>
<tr>
<td>26-32</td>
<td>96</td>
<td>48.0</td>
</tr>
<tr>
<td>33-40</td>
<td>37</td>
<td>18.5</td>
</tr>
<tr>
<td>Total</td>
<td>200</td>
<td>100.0</td>
</tr>
</tbody>
</table>
29.5% pregnant females were having normal Hb levels as shown in (Table and Figure 1).

Thrombocytopenia was observed in 16.5% of pregnant females. Out of these 16.5% pregnant females, 2% were found severe thrombocytopenic (Platelet count <50×10⁹/L), 4.5% were having moderate thrombocytopenia (platelet count in between 50-100×10⁹/L) and 10% were mild thrombocytopenic (platelets count ranges 100-150×10⁹/L) as shown in (Table and Figure 2).

We made groups of pregnant females based on their age to find out any correlation between age and anemia. We found 33.5% anemic women were between age group 18-25 years, 48% anemic women were between the age group 26-32 and 18.5% anemic women were found between 33-40 age group as shown in (Table and Figure 3).

DISCUSSION

Our study has established a primary connection between severe anemia and different maternal and perinatal complications. Women are considered more liable to anemia the world over. Anaemia in pregnancy is an important cause of maternal and perinatal morbidity & mortality (Awan, 2004). In Pakistan it is common to see patients with severe anemia late in pregnancy with no preceding antenatal care, especially in low socioeconomic settings. We also found the similar thing in this study as most of pregnant females included in this study were anemic.

Different researchers have shown a prevalence of anemia in pregnancy from 19-50% (Hyder, 2004; Chotnopparatpattara, 2003; Martí-Carvajal, 2002). Pathological anemia of pregnancy is mainly due to iron deficiency (Beard, 2000). The occurrence of low hemoglobin in our study is 70.5%. The range of low Hb among pregnant women in other developing countries is from 35% to 81% (McLean, 2002; Seshadri, 2001).

Women who were reported eating meat two or more times a week had normal mean hemoglobin concentrations. Diet is extremely important in preventing severe complication of anemia. A study from Zimbabwe shows that poor nutrition leading to anemia is the main cause of post-partum hemorrhage (Tsu, 1993).

The term thrombocytopenia is commonly defined as a platelet count below 150×10⁹/L. Thrombocytopenia is related with a higher occurrence of intrauterine growth
retardation and preterm delivery & was also found as an important risk factor. Similar study from India shows platelet count in 30 normal pregnant women and 90 pregnant women with unstable degree of pregnancy related to hypertensive disorders (Mohapatra, 2007). Thrombocytopenia is reported comparatively common in severe pre-eclampsia with the occurrence range of 11-29% (Burrows, 1987). In our study, platelet count was measured in 200 females and a considerable decrease in platelet number was observed in pregnant females and the occurrence rate of thrombocytopenia was 16.5% in our study.

CONCLUSION

There was a high prevalence of anemia and thrombocytopenia in pregnant females. Anemia is usually ignored in pregnant females in our rural population and poor communities of our cities, but this is a serious alarm for both mother and the baby and needs to be dealt on priority basis. The causes of anemia need further research. Thrombocytopenia also influence the outcome of a pregnancy and may play a very important role at the time of delivery so care must be taken to keep the platelet count of the pregnant females within normal range.

REFERENCES:


