Prevalance And Outcome Of Anaemia In Pregnancy

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I. INTRODUCTION

Women of child bearing age group are at the maximum risk for development of anaemia. Anaemia is the most common nutritional deficiency disorder in the world. WHO has estimated that prevalence of anaemia in developed countries is 14 % and in developing countries is 51 % in pregnant women. Prevalence of anaemia in India is 65-75% in pregnant women [1].

Specially Iron deficiency anaemia is important public health problem for pregnant women, living in developing countries, affecting 2/3rd of pregnant women and contributes to maternal morbidity and mortality and to low birth weight [2-3]. High prevalence is directory associated with poor health

Abstract:

Objectives: Anaemia is associated with negative impact on both the mother and the newborn. Fetal anaemia, low birth weight, preterm birth and still birth have been associated with anaemia. This study is planned with aim to identify prevalence of anaemia in specified population and to know various adverse consequences of anaemia in mother and child.

Materials And Methods: The present study was carried out at Yenepoya Medical College, Mangalore. All pregnant women delivered at our hospital during the time period of April 2015 TO- September 2015 were evaluated.

Results: In the present study 636 patients were studied, in which 234(36.7%) are primigravidas, 402(63.2%) were multigravidas. 599patients(94.18%) were in age group 20-34, 18 were teenage pregnancies(2.83%), 19 patients were in age group >35yrs(2.99), 288(45.28%) patients were found to be anemic, in which majority were mild anemic(38.20%), followed by moderate(6.28%), and 0.79% were severe anemic.

In non anaemic group 50% of newborn were found to have birthweight 2-3kgs, <2 were 2.59%, 39.37% were between 3-3.5kg, 8.04% were >3.5kgs.

In anemic group 2.7% of new born have birthweight <2kg, 54.69% have birthweight 2-3 kg, 76% have 3-3.5kg, in 7.48% have birthweight >3.5kg.

In non anaemic group 10.05% were preterm deliveries, in anemic group 12.5% were preterm deliveries, 2.5% were with poor apgar score in non anaemic group, 3.7% were with low apgar in anaemic group.

Conclusion: In developing countries like India prevalence of anaemia is very high which adversely affect both maternal and foetal outcome. Anaemia is directly linked to low birth weight, prematurity, poor APGAR score and neonatal death and maternal morbidity and mortality. To combat all these problems there is a need to prevent incidence of anaemia in pregnant women biron and food supplements, better antenatal care and by giving health education. These measures are affordable and easily available in in our country and by effective implementation of these we can improve life of both mother and child.
status, poverty, poor socioeconomic status, multiparty, less birth spacing and many more. Anaemia is defined by WHO as Haemoglobin (Hb) less than 11gm in pregnancy, and is divided into three degrees mild (10.9-9.0 gm %), moderate (8.9-7.0 gm %) and severe degree (<7.0 gm %) [4] and we used these parameter in study. Most of the studies have demonstrated a strong association between maternal anaemia and adverse outcome such as low birth weight, preterm delivery and intrauterine growth retardation [5-9]. This study is planned to find the prevalence of anaemia in pregnant mother in specified population and to investigate their adverse outcome in mother and new born baby.

II. METHODOLOGY

This is a prospective case control study done on all women getting delivered at our hospital during study period, who will fulfill the inclusion criteria be included in the study. Complete blood count was performed to assess Hb level. Hemoglobin estimation is done by ‘Sahli’s’ method. The babies are weighed immediately after birth without any clothing on an electronic weighing machine.

MATERIALS AND METHODS

The present study was carried out Yenepoya Medical College, Mangalore. All pregnant women delivered at our hospital under the time period of April 2015 TO- September 2015 were evaluated.

INCLUSION CRITERIA

Pregnant women who delivered in our institute during study period were included.

EXCLUSION CRITERIA

Multiparty (5 and above)  
Hypertensive disorders in pregnancy  
Pregnancy with diabetes mellitus  
Ante partum haemorrhage  
Pregnancy with chronic medical illness  
Multiple gestations  
HIV/HBsAg/VDRL positive cases

III. OBSERVATION AND RESULTS

<table>
<thead>
<tr>
<th>Age group</th>
<th>Number of patients</th>
<th>percentage</th>
<th>PRIMI</th>
<th>MULT</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;19 yrs</td>
<td>18</td>
<td>2.83</td>
<td>17</td>
<td>1</td>
</tr>
<tr>
<td>20-34 yrs</td>
<td>599</td>
<td>94.18</td>
<td>216</td>
<td>383</td>
</tr>
<tr>
<td>&gt;35 yrs</td>
<td>19</td>
<td>2.99</td>
<td>1</td>
<td>18</td>
</tr>
<tr>
<td>Total number</td>
<td>636</td>
<td>100</td>
<td>234</td>
<td>402</td>
</tr>
</tbody>
</table>

Table 1: Age wise distribution of patients

In the present study, 599 Cases were in age group 20 - 34 years, which comprises 94.18% of total, number of teenage pregnancies were 18 ( 2.83%) in the study. 2.99% of pregnancies were more than 35 years of age. 36.79% of cases were primigravidae and 63.21% were multigravidae.

<table>
<thead>
<tr>
<th>Hb</th>
<th>Non anemic</th>
<th>mild</th>
<th>moderate</th>
<th>severe</th>
</tr>
</thead>
<tbody>
<tr>
<td>primigravida</td>
<td>129</td>
<td>90</td>
<td>13</td>
<td>7</td>
</tr>
<tr>
<td>multigravida</td>
<td>219</td>
<td>153</td>
<td>27</td>
<td>3</td>
</tr>
<tr>
<td>Total no.</td>
<td>348</td>
<td>243</td>
<td>40</td>
<td>5</td>
</tr>
<tr>
<td>percentage</td>
<td>54.72</td>
<td>38.20</td>
<td>6.29</td>
<td>0.79</td>
</tr>
</tbody>
</table>

Table 2: Incidence & Severity of Anaemia in study population

In the present study, 243 cases had mild anaemia giving an incidence of 38.20%, 40cases in the study group had moderate anaemia with an incidence of 6.29%, 5 cases had Hb<7gm giving an incidence of 0.79% which are severely anaemic. 44.87% of primigravidae were anemic while 45.52% of multigravida have anaemia.

<table>
<thead>
<tr>
<th>Birth weight</th>
<th>Non anemic</th>
<th>mild</th>
<th>moderate</th>
<th>severe</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt;2kg</td>
<td>9(2.59%)</td>
<td>6(2.47)</td>
<td>37(2.5)</td>
<td>1(20)</td>
</tr>
<tr>
<td>2-3kg</td>
<td>174(50)</td>
<td>123(30.61)</td>
<td>20(50)</td>
<td>3(60)</td>
</tr>
<tr>
<td>3-3.5kg</td>
<td>137(39.37)</td>
<td>86(35.4)</td>
<td>16(40)</td>
<td>1(20)</td>
</tr>
<tr>
<td>&gt;3.5kg</td>
<td>28(8.04)</td>
<td>28(11.52)</td>
<td>3(7.5)</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 3: Comparison of birth weight between non-anaemic and anaemic groups

In non anaemic group 50% of newborn were have birthweight 2-3kgs, <2 were 2.59%, 39.37% were between 3-3.5kg. 8.04% were >3.5kg.

In anaemic group 2.7% of new born have birthweight <2kg, 54.69% have birthweight 2-3 kg, 34.76% have 3-3.5kg, in 7.48% have birthweight >3.5kg.

<table>
<thead>
<tr>
<th>VARIABLES</th>
<th>NON ANEMIC</th>
<th>MILD</th>
<th>MODERATE</th>
<th>SEVERE</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRETERM DELIVERY</td>
<td>35(10.05%)</td>
<td>29(11.93%)</td>
<td>5(12.5%)</td>
<td>2(40%)</td>
</tr>
<tr>
<td>POOR APGAR</td>
<td>9(2.59%)</td>
<td>9(3.70%)</td>
<td>0</td>
<td>0</td>
</tr>
</tbody>
</table>

Table 4: Comparison of neonatal outcome between non-anaemic and anaemic groups

Pre term delivery in non-anaemic group was 10% while it was 2% and 2.5 %more in mild- moderately anaemic group and 4 times more severely anaemic group respectively.

Poor APGAR score (taken at 5 minutes <7) was 2.59% in non-anaemic group and it was increased to 3.07% in mild.

IV. DISCUSSION

In our study 45.28% of study population were anaemic in which majority have mild (38.20%) anaemia as per WHO guidelines.

Incidence of anaemia is more in multigravida as compared to primigravida.
In our study the risk of low birth weight is more in anaemic group and it increases with severity of anaemia. In mild- moderate anaemic group about 50% of new born baby have birth weight 2-3kg. But in severely anaemic group 20% of new born baby have birth weight <2kg, and 60% between 2-3kgs.

A similar condition was observed in Pakistan in which majority of the cases had mild anaemia (75.0%), moderate anaemia (14.8%) and severe anaemia (0.7%) [12]. Similarly, report from India in 2010 also showed the majority (50.9%) of patients having moderate anaemia followed by mild (30.17%) and severe anaemia (18.9%) respectively [6,13].

Low birth weight babies are more commonly associated with severe Anemia. These results are similar to studies done previously by Rani KU et al [14], Jain P. et al [5] and Levy et al[6].

In our study risk of preterm delivery is more in anaemic group and which increases with severity of anaemia upto 40%, these results shows similarity with study done by Dayal S, Dayal A et al[10], Rani KU et al [14], Jain P et al [5] and Umber et al [9].

There are many studies showing that maternal iron deficiency anaemia early in pregnancy can result in low birth weight subsequent to preterm delivery. One study on Welsh women who were first diagnosed with anaemia (haemoglobin <10 g %) at 13–24 wk of gestation had a 1.18–1.75-fold higher relative risk of preterm birth, low birth weight, and prenatal mortality [15]. After controlling for many other variables in a large Californian study, Kelenboff et al showed a doubled risk of preterm delivery with anaemia [16].

In our study preterm and low birth weight among anaemic women was 2.5% more than non-anaemic group and is seen in 40% cases of severe anaemia. Study done by Umber et al [9] that has showed risk of preterm and low birth weight were 3.4 and 1.8 times more in anaemic group. They have taken two group for study, anaemic <11 gm% Hb and non-anaemic >11 gm% Hb. They have also shown poor APGAR score in anaemic group which supports our study.

An association between maternal anaemia and lower infant APGAR scores was reported in some study done by Rusia et al [8] in 102 Indian women in the first stage of labour, higher maternal haemoglobin concentrations were correlated with better APGAR scores and with a lower risk of birth asphyxia.

V. CONCLUSION

In developing countries like India prevalence of anaemia is very high which adversely affect both maternal and foetal outcome.

Anaemia is s directly linked to low birth weight, prematurity, poor APGAR score and neonatal death and maternal morbidity and mortality.

To combat all these problems there is a need to prevent incidence of anaemia in pregnant women by giving, iron tablet, food supplements, better antenatal care and by giving health education.

These measures are affordable and easily available in our country and by effective implementation of these we can save many lives of both mother and child.

REFERENCES


