The study of incidence of maternal anaemia in various age groups of women going to labour in Orissa

Rajeshwari K.\textsuperscript{1*}, Ashok Kumar Behera\textsuperscript{2}

\textsuperscript{1}Senior Resident, Department of Obstetrics and Gynaecology, Chamarajanagara Institute of Medical Sciences, Chamarajanagara District, Karnataka, INDIA.
\textsuperscript{2}Professor and HOD, Department of Obstetrics and Gynaecology, S C B Medical College, Cuttack, Orissa, INDIA.

Email: rajik09@yahoo.co.in

**Abstract**

**Introduction:** Anaemia is the commonest medical disorder in pregnancy and has a varied prevalence, aetiology and degree of severity in different populations. Anaemia during pregnancy has been shown to be associated with a two-fold risk for preterm delivery and a three-fold risk for low birth-weight as well as maternal mortality. The World Health Organization (WHO) estimates that anaemia contributed to approximately 20\% of the 515,000 maternal deaths worldwide in 1995. Keeping these facts in view, the present study embodies the observation of 250 cases among 400 cases attending labour room of S. C. B. Medical College, Cuttack (Orissa), giving an incidence of 62.5\%, which is quite high in comparison to developed countries.

**Keywords:** Maternal anaemia, incidence, age group.

*Address for Correspondence:*
Dr Rajeshwari K., Senior Resident, Department of Obstetrics and Gynaecology, Chamarajanagara Institute of Medical Sciences, Chamarajanagara district, Karnataka, INDIA.

Email: rajik09@yahoo.co.in

Received Date: 17/08/2014 Accepted Date: 27/08/2014

**INTRODUCTION**

Anaemia is the commonest medical disorder in pregnancy and has a varied prevalence, aetiology and degree of severity in different populations\textsuperscript{1}. Anaemia in pregnancy is defined as a condition of low circulating haemoglobin in which the haemoglobin concentration has fallen below a threshold lying at two standard deviations below the median of a healthy population of the same age, sex and stage of pregnancy\textsuperscript{2}. WHO definition for diagnosis of anaemia in pregnancy is a haemoglobin concentration of less than 11 g/dl (7.5mmol/l) and a haematocrit of less than 33\%. The prevalence of iron-deficiency anaemia in pregnant women is estimated to be between 35 and 75\% (average 56\%) in developing countries whereas in industrialized countries the average prevalence is 18\%.\textsuperscript{4,5} Out of an estimated 150 million deliveries occurring annually in the world, approximately 600,000 women die from complications of pregnancy and child birth.\textsuperscript{6,7} Anaemia is responsible for 40 – 60\% of maternal death in non-industrialised countries. It causes direct as well as indirect, deaths from cardiac failure, hemorrhage, infection and pre-eclampsia.\textsuperscript{8,9} It also increases perinatal mortality and morbidity rates consequent to preterm deliveries, intra-uterine growth retardation, low iron stores, iron deficiency anaemia and cognitive and affective dysfunction in the infant.\textsuperscript{10,11} A number of studies have been done previously on the incidence of maternal anaemia in various age groups Malhotra et al (2002),\textsuperscript{12} Aimakhu et al (2003).\textsuperscript{13} Keeping these facts in view the present study was conducted in this tertiary care hospital as cases from all the strata of the society come here. The study had the objective of finding out the magnitude of the problem in this part of the country.

**MATERIAL AND METHOD**

**Source of Data**

The present study was carried out in the department of Obstetrics and Gynaecology, SCB Medical College Hospital, Cuttack from 2009 to 2011.
Inclusion Criteria
Patients in labour with haemoglobin level of less than 11.0 gm / dl.

Exclusion Criteria
- Patients with haemoglobinopathies.
- Patients with ante-partum haemorrhage, bleeding disorder
- Pregnancy with bone marrow insufficiency
- Pregnancy with severe infections
- Grand multipara

Method of Study
A cross sectional study was conducted on women in labour with Hb <11gm/dl. All patients admitted in labour room had undergone haemoglobin estimation and women with Hb <11gm/dl were recruited in the study after they satisfied the inclusion and exclusion criteria. The age of women was recorded. The written informed consent was taken.

OBSERVATION AND RESULT
In the present study conducted on a sample of 400 cases attending labour room, percentage of incidence of anaemia on the whole and in various age groups are shown below in tables and bar diagram.

Table 1: Incidence of maternal anaemia

<table>
<thead>
<tr>
<th>No. of Cases</th>
<th>No. of maternal anaemia Cases</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>400</td>
<td>250</td>
<td>62.5</td>
</tr>
</tbody>
</table>

Above table shows detection of 250 maternal anaemia cases from a sample of 400 cases attending labour room, giving an incidence of 62.5%.

Table 2: Incidence of maternal anaemia in various age groups

<table>
<thead>
<tr>
<th>Age in years</th>
<th>No. of Cases</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>16 – 20</td>
<td>14</td>
<td>6</td>
</tr>
<tr>
<td>21 – 25</td>
<td>127</td>
<td>51</td>
</tr>
<tr>
<td>26 – 30</td>
<td>94</td>
<td>37</td>
</tr>
<tr>
<td>&gt; 30</td>
<td>15</td>
<td>6</td>
</tr>
<tr>
<td>Total</td>
<td>250</td>
<td>100</td>
</tr>
</tbody>
</table>

DISCUSSION
The present study was proposed to find out the incidence of anaemia in this part of the country in women going to labour. The present study embodies the observation of 250 cases of maternal anaemia among 400 cases attending labour room of S. C. B. Medical College, giving an incidence of 62.5% (Table I), which is quite high in comparison to developed countries. The study includes only cases that were anaemic at the onset of labour as it would have been unethical not to treat the cases to observe the effect of anaemia on pregnancy outcome. Adimma et al (2002)\textsuperscript{14} reported the incidence to be 17.2% at the onset of labour. Aimakhu et al (2003)\textsuperscript{13} reported an incidence of 15%. Sharma et al (2003)\textsuperscript{15} reported the prevalence of anaemia to be 96%. Dairo et al (2004)\textsuperscript{16} reported the prevalence of anaemia to be 32.8%. Rusia et al (2005)\textsuperscript{17} reported an incidence of 43.2%. Owusu et al (2005)\textsuperscript{18} reported the prevalence of moderate anaemia to be 57.15%. Singh et al (2006)\textsuperscript{19} reported an incidence of 84.9%. Anorlu et al (2006)\textsuperscript{20} showed the prevalence as 35.2%. Marahatta (2007)\textsuperscript{21} reported the prevalence of anaemia to be 42.6%. Jaleel and Khan (2008)\textsuperscript{22} reported an incidence of 69.9%. Bukar et al (2008)\textsuperscript{23} reported the prevalence to be 51.8%. Rasheed et al (2008)\textsuperscript{24} reported an incidence of 41.3%. Noronha et al (2010)\textsuperscript{25} reported the prevalence of 53.7%. Zuguo Mei (2011)\textsuperscript{26} reported prevalence to be 18±1.4%. The prevalence of anaemia in pregnant women in different parts of India is given below\textsuperscript{27,28,29,30}

Table 3

<table>
<thead>
<tr>
<th>Place</th>
<th>No. of pregnant women</th>
<th>Prevalence of anaemia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Assam</td>
<td>525</td>
<td>91.4%</td>
</tr>
<tr>
<td>Bihar</td>
<td>446</td>
<td>84.1%</td>
</tr>
<tr>
<td>U. P</td>
<td>593</td>
<td>79.4%</td>
</tr>
<tr>
<td>H. P</td>
<td>507</td>
<td>61%</td>
</tr>
<tr>
<td>J and K</td>
<td>498</td>
<td>96.8%</td>
</tr>
<tr>
<td>Tamil Nadu</td>
<td>1032</td>
<td>68.8%</td>
</tr>
<tr>
<td>Punjab</td>
<td>4752</td>
<td>86.1%</td>
</tr>
</tbody>
</table>

In the present study the incidence is comparable to the study of Jaleel and Khan (2008)\textsuperscript{22}. The higher incidence of anaemia observed by the present study might be because most cases are referred from rural areas where anaemia antedates pregnancy and is aggravated by increased requirements during pregnancy. While studying the incidence of anaemia in various age groups (Table II) out of 250 cases maximum number of cases (87 %) belonged to the age group of 21 – 30 yrs. The increased incidence in this age group could be because of the fact that maximum number of patients do deliver in this age group. The youngest patient was of 19 years old and the oldest was 35 years old. The mean age was 25.5 years. Malhotra et al (2002)\textsuperscript{12} reported the mean age as 27 ± 4.25. Aimakhu et al (2003)\textsuperscript{13} reported that 83.4% were
aged between 21 – 35 years. Sharma et al (2003) reported that the average age of the patient was 26.5 years, which is comparable to the present study.

CONCLUSION

Nutritional deficiency anaemia during pregnancy continues to be a major health problem in all non – industrialised countries, contributing significantly to high maternal and perinatal mortality and morbidity rates. India continues to be one of the countries with very high prevalence. National Family Health Survey (NFHS-3) reveals the prevalence of anaemia to be 70-80% in children, 70% in pregnant women and 24% in adult men. The present study showed an incidence of 62.5% with maximum number of cases ( 87 %) belonging to the age group of 21 – 30 yrs, which is quite high in comparison to developed countries. The high risk patients should be identified early and should be advised to have regular ANC and prophylactic iron and folic acid supplementation. Anaemia is a preventable condition, so all pregnant women must be observed and managed with adequate maternal and neonatal intensive care facilities to improve the outcome.

REFERENCES

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