

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

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## 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.

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## INTRODUCTION

Anaemia is the commonest medical disorder in pregnancy and has a varied prevalence, aetiology and degree of severity in different populations<sup>1</sup>. 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<sup>2</sup>. 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 0.33<sup>3</sup>. 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%<sup>4,5</sup>. Out of an estimated 150 million deliveries occurring annually in the world, approximately 600,000 women die from complications of pregnancy and child birth<sup>6,7</sup>. 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<sup>8,9</sup>. 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<sup>10,11</sup>. A number of studies have been done previously on the incidence of maternal anaemia in various age groups Malhotra *et al* (2002)<sup>12</sup>, Aimakhu *et al* (2003)<sup>13</sup>. 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.

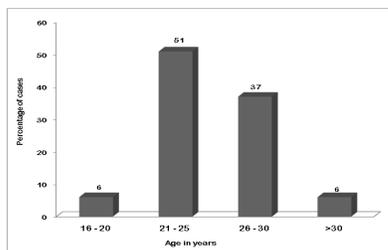
**Table 1:** Incidence of maternal anaemia

No. of Cases	No. of maternal anaemia Cases	Percentage
400	250	62.5

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

Age in years	No. of Cases	Percentage
16 – 20	14	6
21 – 25	127	51
26 – 30	94	37
> 30	15	6
<b>Total</b>	<b>250</b>	<b>100</b>



**Figure 1:** Incidence of maternal anaemia among various age groups

Out of 250 cases, 14 cases (6 %) were between 16 – 20 yrs of age, 127 cases (51%) were between 21 – 25 yrs of age, 94 cases (37%) were between 26 – 30 yrs of age and 15 cases (6%) were above 30 yrs.

**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. Adinma *et al* (2002)<sup>14</sup> reported the incidence to be 17.2% at the onset of labour. Aimakhu *et al* (2003)<sup>13</sup> reported an incidence of 15%. Sharma *et al* (2003)<sup>15</sup> reported the prevalence of anaemia to be 96%. Dairo *et al* (2004)<sup>16</sup> reported the prevalence of anaemia to be 32.8%. Rusia *et al* (2005)<sup>17</sup> reported an incidence of 43.2%. Owusu *et al* (2005)<sup>18</sup> reported the prevalence of moderate anaemia to be 57.15%. Singh *et al* (2006)<sup>19</sup> reported an incidence of 84.9%. Anorlu *et al* (2006)<sup>20</sup> showed the prevalence as 35.2%. Marahatta (2007)<sup>21</sup> reported the prevalence of anaemia to be 42.6%. Jaleel and Khan (2008)<sup>22</sup> reported an incidence of 69.9%. Bukar *et al* (2008)<sup>23</sup> reported the prevalence to be 51.8%. Rasheed *et al* (2008)<sup>24</sup> reported an incidence of 41.3%. Noronha *et al* (2010)<sup>25</sup> reported the prevalence of 53.7%. Zugu Mei (2011)<sup>26</sup> reported prevalence to be 18±1.4% The prevalence of anaemia in pregnant women in different parts of India is given below<sup>27,28,29,30</sup>

**Table 3**

Place	No. of pregnant women	Prevalence of anaemia
Assam	525	91.4%
Bihar	446	84.1%
U. P	593	79.4%
H. P	507	61%
J and K	498	96.8%
Tamil Nadu	1032	68.8%
Punjab	4752	86.1%

In the present study the incidence is comparable to the study of Jaleel and Khan (2008)<sup>22</sup>. 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)<sup>12</sup> reported the mean age as 27 ± 4.25. Aimakhu *et al* (2003)<sup>13</sup> reported that 83.4% were

aged between 21 – 35 years. Sharma *et al* (2003)<sup>15</sup> 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.

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