

# Evaluation of Anemia in Antenatal Patients in NC Medical College

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## ABSTRACT

**Background:** Anemia is one of the most important public health problems leading to significant maternal and perinatal morbidity and mortality. The present study assessed anemia in antenatal patients. **Methods:** Anemia is one of the most important public health problems leading to significant maternal and perinatal morbidity and mortality. The present study assessed anemia in antenatal patients. **Results:** Age group 19-22 years had 38, 23-27 had 24, 28-32 had 15 and >33 years had 7 patients. The difference was significant ( $P < 0.05$ ). 19-22 years had 30, 23-27 years had 22, 28-32 years had 12 and >33 years had 6 cases with anemia. The difference was significant ( $P < 0.05$ ). Microcytic hypochromic anemia was present in 54 and dimorphic anemia in 16 cases. The difference was significant ( $P < 0.05$ ). **Conclusion:** Authors found that in maximum cases there was microcytic anemia. Maternal anemia was major challenge in pregnancy.

**Keywords:** Antenatal, Anemia, Pregnancy.

## INTRODUCTION

Anemia is one of the most important public health problems leading to significant maternal and perinatal morbidity and mortality. The World Health Organization (WHO) reported an association of anemia in 64.4% of maternal deaths in India during 1992–1994. Pregnancy itself leads to anemia by causing a state of hydremic plethora.<sup>[1]</sup> There is disproportionate increase of plasma volume as compared to red blood cell mass during pregnancy leading to apparent reduction of red blood cells, hemoglobin and hematocrit value. The dilution picture is normochromic and normocytic. This is so-called physiological anemia of pregnancy.<sup>[2]</sup> Anemia and iron deficiency are common during pregnancy. A small decrease in hemoglobin (Hb) is a normal physiological consequence of the increase in blood plasma volume during pregnancy. Normally, after an initial increase (due to the cessation of menstruation), Hb levels decrease by around 20 g/l and reach their lowest level during the second trimester, returning to pre-pregnancy levels as the pregnancy advances toward term. The increase in iron requirements during pregnancy results from increased total blood cell volume, the requirements

of the fetus and placenta and, during labor, blood loss.<sup>[3]</sup>

The cause of anaemia should be attributed to mainly nutritional deficiency, poor intake of iron rich food stuff, worm infestations, repeated pregnancies in a short interval of time, absence of replenishing of the iron stores lost due to menstrual loss, etc.,. Maternal anaemia is often associated with increased risk of maternal and foetal morbidity and mortality. So, the only way to reduce these complications is early screening for anaemia and giving proper, effective treatment and counseling about the same.<sup>[4]</sup> The present study assessed anemia in antenatal patients.

## MATERIALS AND METHODS

The present study was conducted in the department of Obstetrics & Gynaecology. It comprised of 84 antenatal mothers. Ethical committee approval of the hospital and written informed consent was taken from all patients.

Data such as name, age etc. was recorded. In all, venous blood was collected for the estimation of hemoglobin by using Sahli's hemoglobinometer and morphological typing of anaemia was estimated by using Leishmann Stain peripheral blood smears. The women were followed-up till delivery and their antenatal, neonatal and other birth outcomes were recorded. Results were tabulated and subjected to statistical analysis. The p-value  $< 0.05$  was considered significant.

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RESULTS

Table 1: Distribution of patients

Age groups (Years)	Number	P value
19-22	38	0.05
23-27	24	
28-32	15	
>33	7	

[Table 1] shows that age group 19-22 years had 38, 23-27 had 24, 28-32 had 15 and >33 years had 7 patients. The difference was significant (P< 0.05).

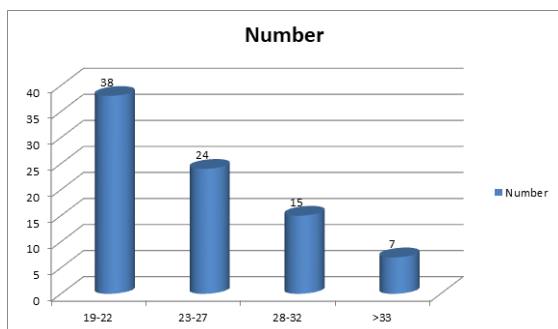


Figure 1: Distribution of patients

Table II Prevalence of anemia

Age groups (Years)	Prevalence	P value
19-22	30	
23-27	22	
28-32	12	
>33	6	

[Table 2, Figure2] shows that 19-22 years had 30, 23-27 years had 22, 28-32 years had 12 and >33 years had 6 cases with anemia. The difference was significant (P< 0.05).

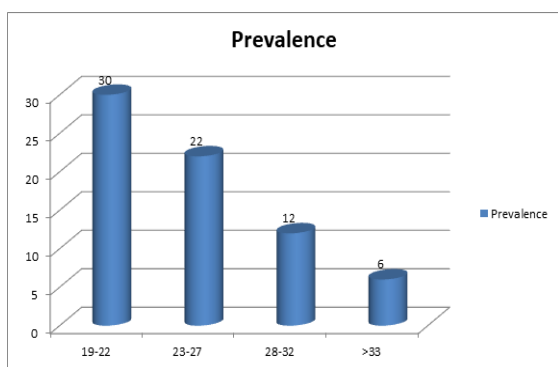


Figure 2: Prevalence of anemia

Table 3: Difference type of anemia

Type	Number	P value
Microcytic hypochromic	54	0.01
Dimorphic	16	

[Table 3] shows that microcytic hypochromic anemia was present in 54 and dimorphic anemia in 16 cases. The difference was significant (P< 0.05).

DISCUSSION

In the case of iron deficiency anemia during pregnancy, there are several possible risks to the mother, including increased fatigue, short-term memory loss, decreased attention span and decreased performance at work, increased pressure on the cardiovascular system due to insufficient Hb and low blood oxygen saturation levels, lower resistance to infections and a reduced tolerance to significant blood loss and to surgical interventions during labor.<sup>[5]</sup> The presumed risks of iron deficiency for the fetus relate to the fact that low iron levels increase the risk of reduced Hb levels, and therefore oxygen, to the uterus, placenta and the fetus during development. Moreover, iron-deficient neonates have been shown to have a statistically significant increment in both cognitive and behavioral abnormalities up to 10 years after iron repletion. Iron deficiency anemia, even if mild to moderate, can be associated with unfavorable obstetric outcomes, notably, premature birth, low birth weight and fetal death.<sup>[6]</sup> The present study assessed anemia in antenatal patients.

In present study, age group 19-22 years had 38, 23-27 had 24, 28-32 had 15 and >33 years had 7 patients. Pena –Rosas et al,<sup>[7]</sup> found that iron- deficiency anemia remains the most important cause of anemia (48.1%) there is also a high prevalence of macrocytic anemia (40%) amongst these cases of severe anemia in pregnancy. The maternal and fetal morbidity and mortality is higher in macrocytic anemia as compared to iron- deficiency anemia. There is an emerging trend of macrocytic anemia among antenatal patients with severe anemia. Both maternal and fetal morbidity appears to be higher in these cases.

We found that 19-22 years had 30, 23-27 years had 22, 28-32 years had 12 and >33 years had 6 cases with anemia. Out of 84, 70 had anemia. Kalaivani et al,<sup>[8]</sup> conducted a study in which a total of 1506 patients were enrolled by 95 investigators. Overall, investigators estimated a moderate or significant risk of iron deficiency in almost 60% of women. The overall prevalence of anemia (15.8%) increased with longer pregnancy duration. Medication (mainly iron-based) was prescribed to 57.3% of patients. In French clinical practice, the estimated risk of iron deficiency and prevalence of anemia during pregnancy align with expectations and are managed according to national/international recommendations.

We found that microcytic hypochromic anemia was present in 54 and dimorphic anemia in 16 cases. Harvey et al,<sup>[9]</sup> observed that among 75 antenatal mothers, the hemoglobin level was less than 10 grams% in 83% cases and that it was more than 10 grams % in 17% cases. Iron deficiency anemia and dimorphic anemia were recorded in 37% and 19% of

the women respectively. High percentage of anemia was noted in women of higher age group (23–27 years), in those with multi-parity (55%) and low educational levels (100%) and in mothers of low socio-economic status (100%). In the pregnancy outcomes, 85% and 60% anaemic mothers reported maternal and foetal complications respectively.

A study conducted in Bencaiova showed prevalence of folic acid and B12 deficiency in pregnant women of up to 36.32% and 61.34%. This was the only study that could be identified in the literature dealing with the problem of macrocytic anemia in pregnancy. In this study the overall prevalence of severe anemia was 1.2%, out of which 41.6% of patients had macrocytic anemia.<sup>[10]</sup>

### CONCLUSION

Authors found that in maximum cases there was microcytic anemia. Maternal anemia was major challenge in pregnancy.

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