

Original Article

PREVALENCE OF ANAEMIA IN ANTENATAL PATIENTS IN A TERTIARY CARE HOSPITAL

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ABSTRACT

Background: In many developing countries anaemia continues to be a major health problem and is associated with increased rates of both maternal and perinatal mortality, premature delivery, low birth weight besides other adverse outcomes. Anemia in pregnancy is defined by the World Health Organization (WHO) as a hemoglobin concentration below 11 g/dL. Maternal mortality rates show a steep increase when maternal hemoglobin levels fall below 5.0 g/dl.

Materials & Methods: This is a retrospective hospital-based study carried out in the department of Obstetrics and Gynaecology, College of Medicine and JNM Hospital, Kalyani (West Bengal). All antenatal women who were delivered in our institute from 1st January 2017 to 31st December 2017 were included in the study. Data, in the form of hemoglobin percentage, registration status, age and parity of patients, address, baby weight, was collected.

Results: A total of 8107 patients delivered in the study period. Out of them, 7,153 (88.23%) were found to be anemic. As per WHO criteria, 4086 patients (57.12%) had mild anaemia, 2525 patients (35.3%) had moderate anaemia while 7.57% women had severe anaemia. 2406 patients (33.63%) were unregistered cases and 80.8% of the severe anaemia were unregistered. Most of the pregnant women (31.7%) were within the age group of 21–25 years. 54% patients were multigravida and 78% patients belonged to rural area. Out of the 7153 patients, 27 women delivered dead babies. 49% patients had baby weight in group of 2.1 to 2.5 kg.

Conclusion: Despite the various measures taken to control anaemia in pregnancy in the last few years, the severity of anaemia continues to remain a major public health issue. A high prevalence of anemia in pregnant women apparently increases the maternal and fetal risks. The present setup infrastructure has to be strengthened so that every woman gets antenatal care.

Key words: Anemia, pregnancy, antenatal care

Introduction

In many developing countries anaemia continues to be a major health problem and is associated with increased rates of both maternal and perinatal mortality, premature delivery, low birth weight besides other adverse outcomes. Anemia in pregnancy is defined by the World Health Organization (WHO) as a hemoglobin concentration

below 11 g/dL ^[1]. Anemia in pregnancy is also defined based on the level of pregnancy. For first and third trimesters hemoglobin levels <11 g/dl and for second trimester <10.5 g/dl are considered anaemic ^[2]. The National Family Health Survey-3 (NFHS-3) data suggests that anemia is widely prevalent among all age groups, and is particularly high among the most vulnerable— nearly 58% among pregnant women, 50% among nonpregnant

nonlactating women, 56% among adolescent girls (15 to 19 years) [3]. During pregnancy 30-50% of women become anaemic. The most common causes of anaemia in pregnancy include iron deficiency, folate deficiency, vitamin B12 deficiency, hemolytic diseases, bone marrow suppression, chronic blood loss and underlying malignancies [4]. The predisposing factors include grandmultiparity, low socioeconomic status, malaria infestation, late booking, Human Immunodeficiency Virus (HIV) infection, and inadequate child spacing among others [5,6]. Maternal mortality rates show a steep increase when maternal hemoglobin levels fall below 5.0 g/dl. In World Health Organization/ World Bank Ranking, iron deficiency anaemia is the third leading cause of disability-adjusted life years for females aged 15 to 44 years [7]. In most of the cases, anaemia is largely preventable and easily treatable if detected in time. Effective management of anaemia includes treatment of the underlying causes, restoration of the hemoglobin concentration to normal levels, and prevention and treatment of complications [8]. Present study was carried out to study the prevalence of anaemia among pregnant women and to study the associated risk factors associated with anaemia.

Materials & Methods

This is a retrospective hospital-based study carried out in the department of Obstetrics and Gynaecology, College of Medicine and JNM Hospital, Kalyani. Data was collected from the medical record section from 1st January 2017 to 31st December 2017. All antenatal women who were delivered in our institute were included in the study. Data, in the form of hemoglobin percentage, registration status, age and parity of patients, address, baby weight, was collected. Anaemia in pregnancy was defined and classified as per WHO classification as Mild anaemia (Hemoglobin - 10 to 10.9 gm%), Moderate anemia (Hemoglobin - 7 to 9.9 gm%) and Severe anemia (Hemoglobin <6.9 gm%).

Association of anaemia with factors like age of mother, registration status (registered or not), parity, residence, baby weight was studied and data analysis was done.

Results

A total of 8107 patients delivered in the study period. Out of them, 7,153 (88.23%) were found to be anemic. As per WHO criteria, 4086 patients (57.12%) had mild anaemia, 2525 patients (35.3%) had moderate anaemia while 542 women (7.57%) had severe anaemia (Table 1).

Table 1: Degree of anaemia (as per WHO)

Degree of anaemia	Number of patients	Percentage (%)
Mild	4086	57.12%
Moderate	2525	35.3%
Severe	542	7.57%
Total	7153	

As seen in Table 2, 2406 patients (33.63%) were unregistered cases and 80.8% of the severe anaemia were unregistered.

Table 2: Association between degree of anaemia and registration status

Degree of anaemia	Unregistered cases (%)	Registered cases (%)	Total
Mild	329(8.05%)	3757 (91.94%)	4086
Moderate	1639 (68.12%)	886 (35.08%)	2525
Severe	438 (80.8%)	104 (19.18%)	542
Total	2406 (33.63%)	4747 (66.36%)	7153

Most of the pregnant women (31.7%) were within the age group of 21–25 years as seen in Table 3. Table 3 shows that 54% patients were multigravida and 78% patients belonged to rural area.

Table 3: Demographic analysis of anaemic pregnant women

		Number of cases	Percentage (%)
Age	>20 years	1867	26%
	21-25 years	2268	31.7%
	26-30 years	2105	29.42%
	>30 years	913	12.76%
Parity	Primi	3296	46%
	Multi	3857	54%
	Rural	4950	69.2%
	Urban	2203	30.8%

Out of the 7153 patients, 27 women delivered dead babies. Hence the baby weight of the rest 7126 patients was taken into consideration. 49% patients had baby weight in group of 2.1 to 2.5 kg (Table 4).

Table 4: Distribution of anaemic patients according to baby weight

Weight of baby	Number of cases	Percentage (%)
<2 kg	2175	30.5%
2.1-2.5 kg	3496	49%
2.6-3 kg	1408	19.75%
>3 kg	47	0.65%

Discussion

Anaemia in pregnancy is an important public health problem as it impacts not only on the pregnant woman but also significantly affects the unborn child [9]. Anaemia gives rise to various problems ranging from lethargy, preterm delivery, postpartum hemorrhage, low birth weight, menorrhagia, decreased quality of life to congestive cardiac failure [10]. Anaemia directly causes 20% of maternal deaths in India and indirectly accounts for another 20% of maternal deaths [11]. The ministry of Health, Government of India has recommended intake of

100mg of elemental iron with 500 mcg folic acid tablets in second half of the pregnancy for a period of at least 100 days.

The prevalence of anemia ranges from 33% to 89% among pregnant women and is more than women from 60% among adolescent girls with wide variations in different regions of the country [12]. In our study 88.23% pregnant women were anaemic. Toteja GS et al and Agarwal KN et al also found prevalence of anaemia to be 84.9% and 84% respectively [13, 14]. Some studies found lower prevalence around 58.36% and 56.4% respectively [15,12]. A study in South east China reported significantly low prevalence of anaemia (39.6%) [16].

We found that majority (57.12%) of the women had mild anaemia, 35.3% had moderate anaemia and 7.57% had severe anaemia. This is in contrast to the findings of Mandve P et al where majority (93.8%) had moderate anaemia and only 0.8% had mild anaemia [10]. 2406 patients who delivered in our hospital were unregistered and 80.8% of the severe anaemia group had no antenatal checkups. Many studies have shown that anaemia is more common in unregistered patients [10,7].

In the present study majority (61.12%) of the anaemic women were of the age group 21-30 years while 12.76% were above 30 years of age. Mandve P et al found around 81.4% to be a of 21-30 years while Rajamouli J et al concluded that 72% were of age group 20 years to 29 years. Several studies have proved that prevalence of anaemia is maximum in the reproductive age group (mostly 21 to 30 years) and this badly affects the quality of life and increases morbidity.

We observed that 54% of the anaemic women were multipara which is similar to the findings of Anlaaku P et al. Increasing parity and short interconceptional period maximizes the chance of anemia in subsequent pregnancies. As babies of anemic mothers have low iron reserve, iron deficiency aggravates in adolescent and precipitates as anemia during pregnancy [10]. In our study the anaemic women mostly belonged to the rural areas (69.2%). Rural population is in general found to be ignorant toward the health and nutrition. Lack of education, lack of knowledge of health facilities and government health schemes prevent them from availing the health facilities [10]. Early marriage, worm infestations, poor quality of food intake, gender discrimination etc are some of the other causes of anaemia in rural areas. Unwanted pregnancies, abortions, recurrent deliveries deplete already jeopardized iron stores. Thus, various methods of contraception should be readily available. Social campaign for the awareness of antenatal care and contraception should be strengthened.

In our study, 49% of the babies were in the group of 2.1-2.5 kg which is comparable to the findings of Mandve P et al where 48.3% cases had baby weight 2.1-2.5kg. Anemia is a risk factor for the complications like low birth weight, intrauterine growth retardation, pre-term delivery, prenatal mortality, low Apgar score etc. Maternal iron

deficiency contributes to reduced fetal iron stores and infants born to anaemic mothers have low iron stores and are more likely to develop anaemia [17].

Prevention of anaemia should start from adolescent period. Regular intake of food rich in iron, iron tablets and deworming can help to reduce anaemia significantly. Menstrual problems (menorrhagia, metrorrhagia etc) should be treated early. Health care workers should provide information on anemia, iron deficiency/other causes to target populations. Fortification of food can be a cost-effective way to improve iron content. Promoting safe water, sanitation and hygiene (WASH) maybe important in anaemia prevention (WHO). Teenage pregnancy should be prevented. Pre-pregnancy counselling often helps to treat causes of anaemia and thus avert the complications during pregnancy. As part of routine antenatal care, emphasis should be on receiving more detailed dietary advice and ways to optimise nutritional status in pregnancy. This would be more effective if done in a personalized fashion.

Conclusion

Despite the various measures taken to control anaemia in pregnancy in the last few years, the severity of anaemia continues to remain a major public health issue. A high prevalence of anemia in pregnant women apparently increases the maternal and fetal risks. The present health setup infrastructure has to be strengthened so that every woman gets antenatal care. Prevention, early diagnosis, and treatment of anaemia in pregnancy needs priority to improve maternal and fetal outcome.

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