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Pathology

PREVALENCE AND PATTERNS OF ANEMIA DURING PREGNANCY IN A HOSPITAL BASED STUDY.

Saurabh Shrivastava

Vishakha Rathore* *Corresponding Author

ABSTRACT

BACKGROUND: Anemia in pregnancy is related to maternal-fetal morbidity and mortality. In developing countries like India it is important to study prevalence and pattern of anemia in pregnancy especially in the region with higher maternal mortality rate. The main objective was to study the prevalence and pattern of anemia in pregnant females.

METHODS: In this cross sectional study females with pregnancy were evaluated for presence of anemia with its morphological type and severity.

RESULTS: A total of 146 pregnant females were evaluated, out of which 103 were found to be anemic and prevalence of anemia was found 70.5%. The percentages of mild, moderate and severe anemia were 37.9%, 46.7% and 15.4% respectively. Most common morphological type was microcytic anemia (51.4%) followed by dimorphic anemia (23.3%), normocytic anemia (14.5%), and macrocytic anemia (10.8%).

CONCLUSIONS: There is high prevalence of anemia in pregnant females. This warrants the need of proper prophylaxis and early diagnosis of anemia in pregnancy to minimize the maternal-fetal morbidity and mortality.

KEYWORDS : Anemia, Pregnancy, Prevalence

INTRODUCTION -:

Anemia is a global public health problem, affecting both developing and developed countries.[1] WHO estimates that prevalence of anemia is 14% in developed countries, 51% in developing countries, and 65-75% in India[2]. In India, National Family Health Survey -2 in 1998 to 99 shows that 54% of women in rural and 46% women in urban areas are anemic[3]. India contributes to about 80% maternal deaths in South Asia as estimated by WHO[4].

Anemia during pregnancy is a major cause of morbidity and mortality of pregnant women in developing countries and has both maternal and fetal consequences. Anemia is primarily responsible for 20% maternal deaths[5]. Maternal anemia associated with adverse pregnancy outcome such as increased rates of maternal and perinatal mortality, premature delivery, low birth weight, low APGAR scores, hampered fetal physical growth, mental impairment and infant deaths etc[6,7]. Anemia may worsen by postpartum hemorrhage and anemic patients are predisposed to puerperal infections. Both anemia and puerperal infections are leading causes of maternal mortality in developing countries[6].

India became the first developing country to take up a National Nutritional Anemia Prophylaxis Program (NNAPP) to prevent anemia among pregnant women. NNAPP was initiated in 1970 during the fourth 5-year health plan with the aim of reducing the prevalence of anemia to 25%. However, high prevalence of anemia among pregnant women persists despite the availability of this effective, low-cost intervention for prevention and treatment[8,9].

So this study was conducted to assess prevalence of anemia among pregnant females in the state having high maternal mortality rate to improve the maternal and child health.

AIMS AND OBJECTIVES

To study the Prevalence and Patterns of anemia in pregnant females in Composite Hospital, BSF, Tekanpur Gwalior, M.P.

MATERIALS & METHODS

The present cross sectional study was conducted on the pregnant females who visited to Obstetrics and gynecology OPD of a Composite Hospital BSF Tekanpur, Gwalior for duration of 12 months from January 2017 to December 2017. All Pregnant females who visited hospital were included. Full term pregnant patients who presented with labor pain were also included in this study and hemoglobin level was measured from pre-delivery samples. Blood samples were drawn and stored in tubes containing EDTA for complete blood count (CBC) and Peripheral smear of the blood samples.

The hemoglobin concentration was estimated by using 3 part differential cell counter machine. Hemoglobin level was categorized into mild anemic (10.0-10.9 g/dL), moderate anemic (7 -9.9 g/dL) and severe anemic (<7.00 g/dL) according to WHO criteria[11].

A peripheral smear was also made to study the type of anemia. The size of RBC was compared to the nucleus of small lymphocyte to label a cell as microcytic, normocytic or macrocytic and if the central pallor was more than one third of cell diameter, the cell was counted as Hypochromic. Simple tabulation and proportions were calculated.

RESULTS

Present study included 146 pregnant females over a period of 12 months from January 2017 to January 2017. The prevalence rate of anemia was found 70.5 % (103 out of 146 patients). Higher prevalence of anemia was found in second trimester (74.2%) followed by first trimester (71.4%) & lowest in third trimester (68.2%) (Table 1). The hemoglobin concentration ranged from 4.7-14.1 gm/dl with a mean of 9.8 gm/dl. The percentages of mild, moderate and severe anemia were 37.9%, 46.7% and 15.4% respectively (Table 2).

Table 1: Trimester wise distribution of frequency of anemia. Trimester

Trimester	Total no. of cases	Total no. of anemic patients	Total (%)
First	49	35	71.4
Second	31	23	74.2
Third	66	45	68.2
Total	146	103	70.5

Table 2: Severity of anemia in pregnant females.

Grades of anemia	Total no. of patients	Percentage (%)
Mild (10-10.9 gm%)	39	37.9
Moderate (7-9.9 gm%)	48	46.7
Severe (<7 gm%)	16	15.4
Total	103	100

Morphological types showed that microcytic hypochromic anemia (51.4%) was most common anemia followed by dimorphic anemia (23.3%), normocytic anemia (14.5%), and macrocytic anemia (10.8%) in anemic pregnant womens (Table 3).

Types of Anemia	Number of patients	Percentages (%)
Microcytic	53	51.4
Dimorphic	24	23.3
Normocytic	15	14.5
Macrocytic	11	10.8
Total	103	100

DISCUSSION

Anemia remains a very common health problem among the women of

reproductive age group and leads to high morbidity and mortality rates among females. Therefore, this study aimed to determine the prevalence of anemia in pregnant women.

The prevalence of anemia in this study among pregnant women was 70.5% which was correlated well with Babita Bansal et al which had 84% prevalence of anemia[12].

The tenth five year plan has suggested a multi-pronged approach to combat anemia, which needs to be implemented effectively[13]. It includes, screening for anemia, treatment of anemic women, and availability of food fortification (wheat flour with iron and folic acid), milk, sugar and salt with iron to build long term iron stores which remains the key to reduce anemia.

In this study the prevalence of moderate anemia was found to be highest 46.7% followed by mild anemia 37.9% and severe anemia 15.4%. These results are closely correlated with study done by Tyagi N et al which found the prevalence of moderate anemia as 61.0% followed by mild anemia 29.5%[14]. Percentage of severe anemia is similar with the study of Bansal B et al (14.3%) and Wanjari SA (14.0%)[12,15].

According to the WHO report that the commonest cause of anemia in pregnancy is nutritional i.e. iron deficiency[16]. Morphological typing in current study showed that microcytic hypochromic anemia (51.4%) was most prevalent anemia supports WHO report. Similar findings were reported in the study by Sawe (prevalence of 53.6%)[17].

In our study highest prevalence of anemia was found in second trimester (74.2%). Similar observations were seen in 2001 by Rajaratnam in his study which quoted 70.2% prevalence in IInd trimester[18]. The high prevalence indicates the need for iron supplementation as early as possible starting from the fourth month of pregnancy.

CONCLUSION

This study concludes that anemia is a significant problem of pregnant women. The approach of treating anemia should be an early approach so that it should not progress to severe stage. Proper antenatal care, early detection of anemia, good nutrition and iron supplementation throughout the pregnancy can help achieve the goal of a healthy mother and healthy baby.

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