TO DETERMINE THE FREQUENCY OF IRON DEFICIENCY ANEMIA AMONG POSTPARTUM WOMEN FROM RURAL AREAS OF KPK

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ABSTRACT

Objective: To determine the frequency of iron deficiency anemia among post-partum women coming from rural areas of KPK.

Methods: This study has been conducted in Department of Gynecology and Obstetrics, Hayatabad Medical Complex for the period of 6months. It was a prospective observational study conducted from 1st November 2021 to 30th April 2022.

Results: frequency of iron deficiency anemia among postpartum women was 26.40%. Postpartum iron deficiency anemia was found in patients with high parity as that of patients with low parity. It was significant with parity having p-value=0.044. Patients with regular antenatal visits have less incidence of iron deficiency as compared to un-booked patients, although it was insignificant with p-value=0.507. No intake of iron supplements antenatally is another factor for iron deficiency anemia in postpartum women as that of women who use the antenatal iron supplements, but it also shows insignificance with p-value=0.086. Similarly, the mode of delivery plays a significant role in postpartum iron deficiency anemia with p-value=0. 021

Conclusion: Our study found a 26.4% prevalence of iron deficiency anemia in post-partum period which can be managed with simple measures as dietary and iron supplements addition in women of child bearing age.

Keywords: Anemia, Iron-Deficiency, Postpartum Period.

INRODUCTION

Anemia is derived from an ancient Greek word anemia, which means “lack of blood”. It is the decrease in the hemoglobin level or the number of red blood cells, resulting in an insufficient oxygen supply to cover the body's physiologic demand[1]. It was described as the most common nutrition deficiency prevailing in both developing as well as in developed countries by Milman.N [2]. Postpartum anemia is defined as a hemoglobin concentration <11 g/dl at 1 week of postpartum and <12 g/dl at 8 weeks of postpartum[2].

Anemia affects approximately 1.5 billion people worldwide as quoted by World Health Organization[3]. The incidence of anemia in general population has reached up to 35-75% in developing countries compared with only 19% in developed countries[4].

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Frequency of anemia in postpartum women is found to be as high as 22%–30% .In developing countries, the incidence has reached up to 70%–80%[5].

The most common type of anemia is iron-deficiency anemia (IDA), with the World Health Organization reported that 50% of people were iron deficient among two billion people. Physiologically, maternal hemoglobin is expected to improve in postpartum period, as pregnancy is a hemodilution state and after delivery, the expanded red cell mass of pregnancy contracts and a large proportion of iron returns to the body stores. However, due to lack of nutritional supplement awareness as well as lack of availability of nutritional foods and supplements in developing country, this postpartum anemia incidence is alarmingly increasing[7].

According to the Centers for Disease Control and Prevention, selective screening for anemia at 4–6 weeks of postpartum is recommended in women who had anemia in 3rd trimester or had multiple gestations or in those who experienced intrapartum excessive blood loss[8].

Most of the women usually recover from postpartum anemia during the weeks or sometimes months after delivery. When recovery takes a long time, consequences are in the form of depressive symptoms, cognitive defects, fatigue & lethargy, lower work

performance, impaired immune function. Also, poorer functioning of mother-child interaction and even delayed infant development were related to maternal postpartum iron deficiency anemia[9]

A substantial research content and immense body of literature is available on postpartum iron deficiency anemia, but the local geographic distribution of disorder needs to be assessed so that future strategies to address the rout causes and management could be designed accordingly. This study is an effort to assess the impending risks to women's health during postpartum period and provide a cornerstone to bridge the gap in women's health care. The main objective of our study is to determine the incidence of iron deficiency anemia among postpartum women presented to tertiary care center from rural areas of Khyber Pakhtunkhwa.

MATERIALS AND METHODS

This research was carried out in obstetrics and gynecology unit of Hayatabad Medical Complex in 6 months from 1st Nov 2021 to 30th April 2022 on 178 postpartum patients. Sample size was calculated by WHO Software for sample size calculation, taking 12.5% [10]proportion of term gestation, experiencing confinement and suffering from Anemia with 95% confidence interval and 5% margin of error. The study was conducted after approval from hospital's ethical and research committee with Ref no .292/HEC/B&PSC/2021.

It was consecutive non-probability sampling technique. All women attending the outpatient department and admitted patients during puerperium who delivered a singleton baby at term gestation, hemodynamically stable , coming from rural areas and sufficient familiarity with local language to complete the written questionnaire ,were the part of this study. Whereas women with comorbidity (DM,HTN,and cardiac disease), multiple gestation ,taking anticoagulant, history of blood disorders, hemoglobinopathies, thalassemia, sickle cell anemia, on treatment causing bone marrow suppression ,signs of puerperal pyrexia/sepsis were excluded. These conditions act as confounders and in case of inclusion, they will introduce bias in the study results.

An informed consent was obtained from the patient for including them in study and using their data in research .Demographic information was collected based on the previous medical record, history, and general physical examination and laboratory investigations. Vitals were recorded. Venous blood sample were taken from the patients and sent to hospital main laboratory for base line level estimation by using absorbance/automatic hematology analyzer 12 parameter method. All the patients were managed as per set protocols and recommendations under supervision of an expert obstetrician having minimum of five years of experience.

Iron deficiency Anemia is defined as Hemoglobin <11gm/dl, MCV<76fl, MCH <23pg MCHC<28g/dl and S.ferritin<50 ng per ml.

All the data was recorded on a specially designed proforma confounding factors and bias was controlled by strictly following exclusion criteria data was stored and analyzed in SPSS version 22. Mean and standard deviation was calculated for numerical variables .Frequencies and percentages were calculated for categorical variables. Stratification was done among parity, antenatal visits, use of iron supplements antenatally and mode of delivery. Post stratification chi-square test was applied keeping p-value <0.05 as significant.

RESULTS

Total 178 patients were studied as 59(33.1%) were of middle age i.e. more than 36 years while 53(29.9%) patients were in the age range of less than or equal to 25 years, 39(21.9%) were of age range 26-30 years and 27(15.2%) presented at age 31-35 years. The study included age ranged from 18 up to 45 years. Average age was 30.82 years ± 7.23SD.

Majority of the patients 116(65.17%) have presented with having Multiparity followed by primary para which were 55(30.9%) patients and 7(3.93%) women have grand multi parity. Fig 1

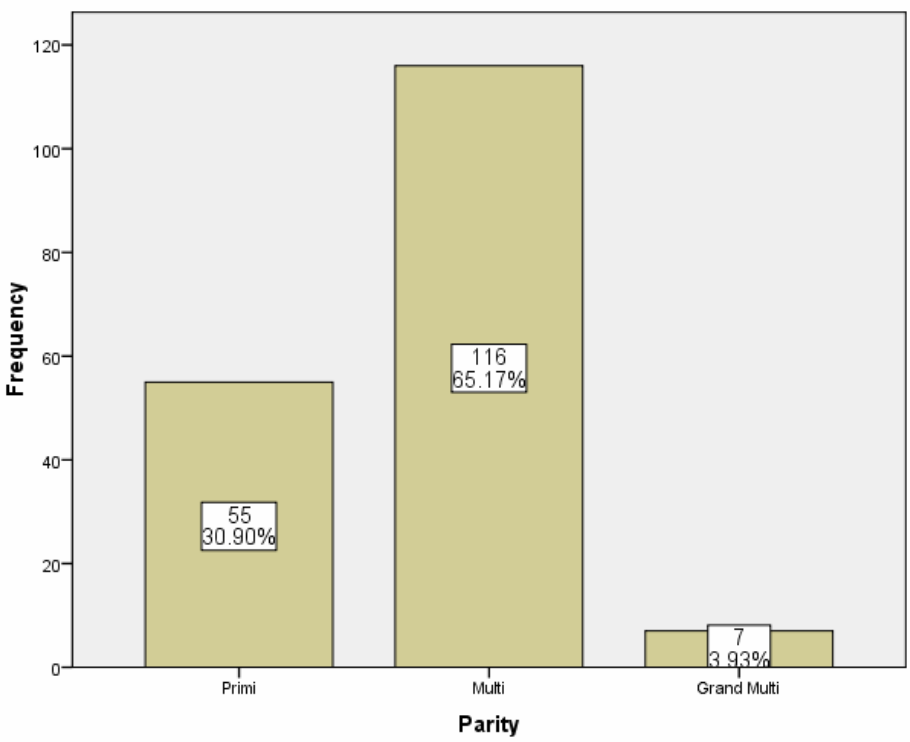

Fig 1: PARITY

Majority of the patients have no regular antenatal visits. Only 33.7% women completed their regular antenatal visits. There were 95.5% patients who had used antenatal iron supplements. Similarly, vaginal delivery was observed frequently as that of cesarean section. Table 2

Over all frequency of iron deficiency anemia among postpartum women was 47(26.40%). While 131(73.6%) patients were found free of iron deficiency anemia. Fig 2

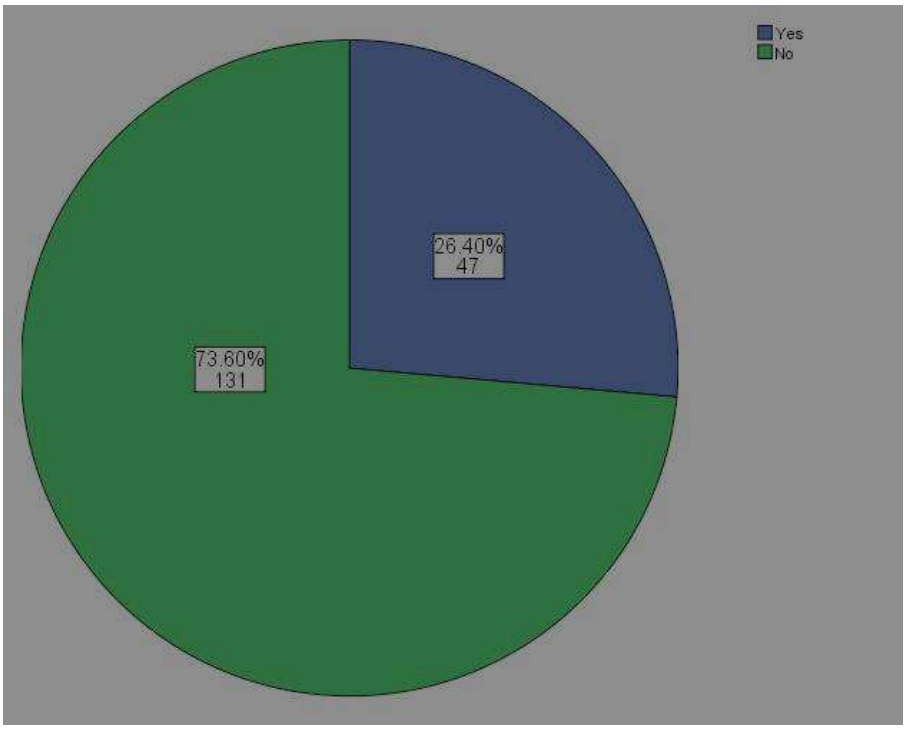

Fig: 2 Iron Deficiency Anemia

Postpartum iron deficiency anemia was found in patients with high parity as that of patients with low parity. It was significant with parity having p-value=0.044. Patients with regular antenatal visits have less incidence of iron deficiency as compared to unbooked patients, although it was insignificant with p-value=0.507.

No intake of iron supplements antenatally is another factor for iron deficiency anemia in postpartum women as that of women who use the antenatal iron supplements, but it also shows insignificance with p-value=0.086. Similarly, the mode of delivery plays a significant role in postpartum iron deficiency anemia with p-value=0. 021. Table 2

Table 2: Stratification of Iron Deficiency Anemia

			Iron Deficiency Anemia		P value
			Yes	NO	
Parity	Primi	Count	8	47	0.044
		Row N %	14.5%	85.5%	
	Multi	Count	36	80	
		Row N %	31%	69%	
	Grand Multi	Count	3	4	
		Row %	42.9%	57.1%	
Regular Antenatal	YES	Count	14	46	0.507
Visits		Row %	23.3%	76.7%	
	NO	Count	33	85	
		Row %	28%	72%	
Antenatal Use of	> 2 months	Count	24	53	0.086
Iron Supplements		Row %	31.2%	68.8%	
	< 2 months	Count	19	74	
		Row %	20.4%	79.6%	
	Not taken	Count	4	4	
		Row %	50%	50%	
Mode of delivery	Vaginal	Count	23	89	0.021
	Delivery	Row %	20.5%	79.5%	
	Cesarean		24	42	
Count					
	Section		36.4%	63.6%	
Row%					

DISCUSSION

Postpartum anemia has now gained much importance like antenatal anemia due to its increase prevalence and consequences associated with it. A similar study was done in U.S which showed that 13% women were found having iron deficiency anemia postpartum in the first 6months.This seems to affect women's physical health, mental health as well as her daily routine performance[11].Most of the women in both developed and underdeveloped countries are found anemic antenatally. WHO report showed that 35% to 75% (56% on average) antenatal patients are anemic in developing countries while 18% of antenatal women from developed countries are found anemic[12]. We found 26.4% prevalence of postpartum anemia among our patients. However, study carried out by Lisa.M showed the prevalence of postpartum anemia in developing countries from 50% to 80%[13].We found poor socioeconomic status women more prone to develop postpartum anemia due to non availability of healthy food items and iron supplements. A study conducted on low socioeconomic status in U.S showed 21% of women developed anemia postpartum with normal hemoglobin levels in their third trimester[14].

Another study by Preziosi and colleagues [15]found a 15 and 18% prevalence of iron

deficiency at 3 and 6 months postpartum among Nigerian women. Similarly, use of iron supplements antenatally has profound effect on Hb level postpartum. It has been found in one study that without use of prenatal iron supplementation, there is more than 50% chance of low iron stores[16].

CONCLUSION

The prevalence of postpartum anemia is relatively high among our population which include inadequate documentation of anemia's effects on maternal mortality, morbidity, and well-being, and on infant health and development. As we found that 26.40% (n=47) developed iron deficiency anemia in post-partum period can easily be managed and the deleterious effects can be avoided. The World Health Organization now recommends that Iron supplementation should be provided for at least three months after delivery.[17]

DECLARATION

Authors contributions:

1. Dr. Saman Madrassa: Conception and design. She also edited the final manuscript.
2. Dr. Nasreen Kishwar helped in data collection and references, final approval for publication.
3. Dr. Rabeea Sadaf helped in data analysis and critical revision.
4. Dr.Laila Nazir helped with drafting the manuscript and provided references. **Conflicts of Interests**: None

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Limitations:

Some potential limitations of a research study about anemia among postpartum women could include small sample size, self-selection bias, recall bias. Due to lack of long-term follow-up, the study may only assess anemia status at a single point in time without considering how it may change over time or the long-term health implications. The results may only be applicable to a specific population or geographic area, and may not be generalizable to other settings.

Recommendations:

Based on research studies of anemia among postpartum women, here are some recommendations:

1) All postpartum women should be screened for anemia before discharge from the hospital or within the first week after delivery.

2) Women with iron-deficiency anemia should receive oral iron supplements for at least 12 weeks to replenish iron stores and correct anemia.

3) Provide education to postpartum women about the importance of iron-rich foods, the risk factors for anemia, and the signs and symptoms of anemia.

4) Women with a history of anemia should receive preconception care to optimize their iron stores before pregnancy and reduce the risk of anemia during pregnancy and postpartum.

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