

PREVALENCE OF ANEMIA AT THE TIME OF DELIVERY IN A TERTIARY CARE HOSPITAL OF NOWSHERA DISTRICT, KPK

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ABSTRACT

Objective: to determine the prevalence of anemia in women at the time of their delivery.

Study Design: Descriptive cross-sectional study.

Place and Duration of Study: labor suite and obstetric unit of Qazi Hussain Ahmed Medical Complex, Nowshera, KPK. June 2017 To August 2017.

Materials and Methods: 151 consecutive antenatal women with 37 to 42 weeks pregnancy admitted to inpatient obstetric unit for delivery (both vaginal and caesarian), were included in this study. Their full blood count was taken. After informed consent, a proforma comprising basic demographic and obstetric data, was administered to the subjects and their hemoglobin documented on it. The data was analyzed using SPSS-16 and results presented as tables and graphs.

Results: The overall prevalence of anemia at the time of delivery was 87.4%. 33.7% patients had mild, 51% pts had moderate and 2.6% patients had severe anemia.

Conclusion: Anemia continues to be the commonest morbidity in pregnancy. The high prevalence of moderate-severe anemia in last trimester in this area underlines the need to improve antenatal care specifically and nutritional status of childbearing women in general.

Key Words: anemia antenatal delivery iron -deficiency.

INTRODUCTION

Anaemia is defined as inadequate oxygen-carrying capacity of blood to meet the physiological needs of body, and is derived from the Greek word *anaimia*, meaning lack of blood.¹ According to The World Health Organization, anaemia is defined as haemoglobin concentration below 12g/dl in non-pregnant women and below 11g/dl in pregnancy. Anaemia in pregnancy is further classified according to severity as Mild (Hb:10-10.9 g/dl), Moderate (Hb:7-9.9 g/dl) and Severe (Hb <7g/dl).²

Anaemia in pregnancy is a public health problem globally. According to WHO, worldwide, 41.8% (range 24.1-57.1%) of pregnant and 30.2% (range 17.8-47.5%) of non-pregnant women are anaemic.³ Studies in Pakistan have revealed prevalence of anaemia in pregnancy ranging from 51%⁴ to 90.5%⁵. Worldwide, iron deficiency, mainly nutritional, is the commonest cause

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of anaemia, accounting for at least 50% of cases. Other cause include nutritional deficiencies like folate, vitamin B12 and vitamin A; worm infestation and disorders of haemoglobin synthesis or red cell destruction.⁶

Anaemia in pregnancy is associated with maternal as well as neonatal morbidity and mortality. There is increased risk of postpartum haemorrhage, maternal infection as well as risk of preterm birth, low birth weight and small for gestational weight.^{7,8,9,10,11} Owing to the risk of these complications, NICE guideline on antenatal care recommends screening for anaemia at booking and at 28 weeks gestation.¹² This is because iron deficiency anaemia is a preventable as well as treatable cause of anaemia which can be rectified by oral as well as parenteral iron supplementation in addition to improving dietary iron intake.¹³ However, many women present with severe anaemia at the time of delivery or in 3rd trimester, when it's very difficult to treat the anaemia with iron supplements alone, exposing women to risks of blood transfusion as well as adverse fetomaternal outcome.⁸

The present study is undertaken with intent to gauge the prevalence of anaemia and its severity at the time of delivery. This will help us in determining the disease burden in this area and advise policy makers to develop strategies to improve the nutritional status of women in general as well as improve antenatal care so as to prevent uncorrected anaemia at the point of delivery.

MATERIALS AND METHODS

This descriptive study was carried out at Qazi Hussain Ahmed Medical Complex, Nowshera, from June to August 2017. This hospital is a 300 bedded, newly constructed and the only teaching hospital in Nowshera, a district adjoining Peshawar, KPK. Before start of the study, approval was taken from the hospital's ethical committee. The purpose of the study was explained to the subjects and informed consent was taken. Sample size was 151, using 50% prevalence⁴ of anaemia in pregnancy, 95% confidence interval 8% margin of error under WHO software. Sampling technique was non-probability consecutive sampling.

Antenatal women with 37 to 42 weeks pregnancy admitted to inpatient obstetric unit for delivery (both vaginal and caesarian), were included in this study. Pregnant women with known blood dyscrasias, chronic illnesses like chronic renal or liver disease or history of repeated bleeding episodes in the current pregnancy were excluded from the study. On admission, blood was drawn from the patients and sent to the hospital laboratory where full blood count was done using a single automated full blood count analyzer.

Table 1: Age wise distribution of patients (n=151)

	Frequency	Percent
<= 20.00	24	15.9
21.00 - 30.00	99	65.6
31.00 - 40.00	26	17.2
41.00+	2	1.3
Total	151	100.0

Table 2: Age wise distribution of severity of anemia (n=151)

		Severity of Anemia				Total
		No Anemia	Mild Anemia	Moderate Anemia	Severe Anemia	
Age (in years)	<= 20.00	2 8.3%	5 20.8%	16 66.7%	1 4.2%	24 100.0%
	21.00 - 30.00	13 13.1%	39 39.4%	46 46.5%	1 0.0%	99 100.0%
	31.00 - 40.00	4 15.4%	7 26.9%	13 50.0%	2 7.7%	26 100.0%
	41.00+	0 0.0%	0 0.0%	2 100.0%	0 0.0%	2 100.0%
Total		19 12.6%	51 33.8%	77 51.0%	4 2.6%	151 100.0%

Table 3: Parity and mode of delivery wise stratification of severity of anemia (n=151)

		Severity of Anemia				Total
		No Anemia	Mild Anemia	Moderate Anemia	Severe Anemia	
Mode of delivery	NVD	14 11.2%	40 32.0%	68 54.4%	3 2.4%	0.308
	C Section	5 19.2%	11 42.3%	9 34.6%	1 3.8%	
Parity	Nulli	5 11.1%	15 33.3%	25 55.6%	0 0.0%	0.351
	Multi	14 14.1%	35 35.4%	47 47.5%	3 3.0%	
	Grand Multi	0 0.0%	1 14.3%	5 71.4%	1 14.3%	

The patients' basic demographic and obstetrical data, as well as their haemoglobin levels, were entered on to a proforma and analysed using SPSS 16. Results were presented as graphs and tables.

RESULTS

Among 151 patients, 87.4% were anaemic. Patient's age was divided in four categories, out of which most common age group for pregnant women was 21-30 years in our study. The average age of this study population was 26.44 years \pm 5.54 SD with maximum age of 43 years and minimum age was found 15 years. (Table 1) Average parity in our sample was 1.82 \pm 1.24 SD with range of 0-9. Majority of women were multipara. (Fig 1) Distribution of severity of anemia among pregnant women undergoing delivery shows that 4(2.65%) were found to have severe anemia and 77(51%) had moderate anemia while 51(33.7%) women were having mild anemia. 19 women (12.6%) had no anaemia. (Fig 2)

Age wise distribution of anemia shows that severe anemia was slightly higher in older ages than that of younger ages although it was statistically insignificant with p-value=0.043. The frequency of severe anaemia was 4.2% in those age below 20 years, 1% in those aged 21-30 years old and 7.7% in those aged 31-40 years. (Table 3) Parity and mode of delivery wise stratification of anemia is shown in Table 4.

Mode of delivery wise stratification of anemia shows that anaemia was more frequent in patients who delivered vaginally as compared to those who delivered

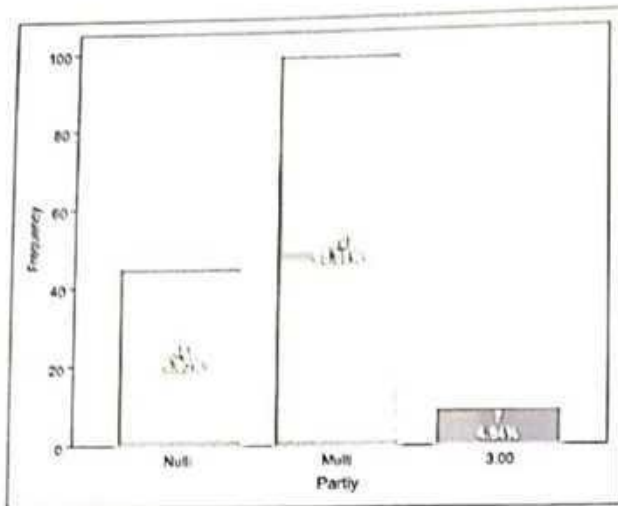


Figure 1: Parity wise distribution (n=151)

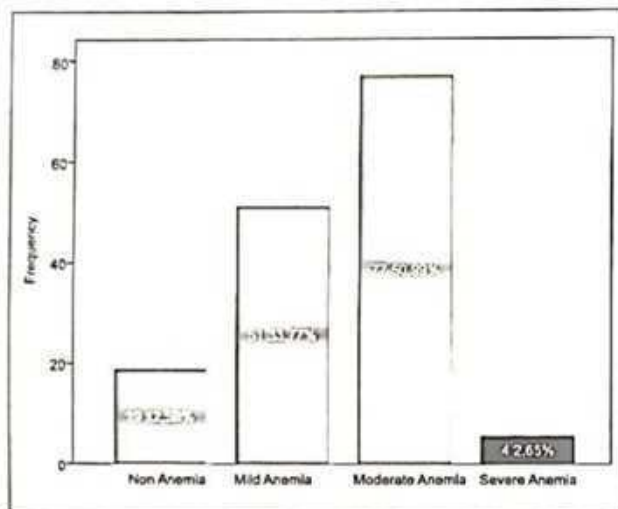


Figure 2: Severity of anemia among women undergoing delivery (n=151)

via c section but statistically it was insignificant with p-value=0.308.

DISCUSSION

This study was conducted on 151 consecutive women presenting at term to the antenatal ward and delivery suite admitted through OPD or through emergency. Frequency of anaemia in our study was 87%. This result is similar to a study conducted in India¹⁴ as well as another one conducted in an urban setting in Pakistan⁵ in which the prevalence of anaemia was 87% and 90.5% respectively. However it is somewhat higher than other studies conducted in Pakistan by N Hashim¹⁵ and R Jaleel¹⁶ in which the prevalence of anaemia was 42% and 69.9% respectively. Nearly half (51%) of the patients had moderate anaemia, with 2.6% patients being severely anaemic. In study conducted in Assam, India, the frequency of moderate anaemia was lower (32.8%) but that of severe anaemia was similar (2.1%). The frequency of severe anaemia in other studies range from 0.7% by Baig-Ansari⁵ to 4.8% by R Jaleel.¹⁶

Regarding ages of the patients, nearly 60% (46/77) of the patients with moderate anaemia were in the age range of 21-30 years whereas 50% of patients with severe anaemia were aged 30-40 years. A worry some finding in our study was that 70% (17/24) of adolescents (age ≤ 20 years) were moderate to severely anaemic. Anaemia is a common complication of teenage pregnancy. Chahande, et al¹⁷ reported 72.6% of teen an age pregnant women to be anaemic. A study in Bengal¹⁸ showed that anaemia, preterm birth and low birth weight were more prevalent in teenage pregnancy than older mothers.

As far as parity is concerned, there was a trend towards increase in frequency of anaemia with increasing parity so that about 85% grand multigravida were moderate to severely anaemic. However this difference didn't reach significance level (p value:0.351), probably due to small sample size. Similar findings were observed in a Malaysian study in which the frequency and severity of anaemia increased with increasing parity.¹⁹ This is probably due to decreased birth-spacing resulting in inadequate time for the mother to restore her iron stores in between the pregnancies.

The strength of this study lies in the fact that, to the best of our knowledge, this is the 1st study on anaemia in pregnancy in district Nowshera and will serve as a pilot study to assess the magnitude of this problem as well as provide a basis to take steps to improve antenatal care as well as nutritional status of women in this region.

The limitations of this study include the small sample size of the study rendering the power of the study too small to give significant results. Larger similar studies are required in order to study more variables like risk factors for anaemia and outcome in such patients.

CONCLUSION

Majority of patients were anaemic at the time of their delivery and nearly half of them had moderate-severe anaemia. This is alarming, keeping in mind the dire consequences of anaemia for the mother and baby.

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