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To study prevalence of anaemia in early post partum period

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Abstract--In India, anaemia is the most prevalent cause of morbidity in women. The health of the foetus is also affected. The most common cause is iron deficiency anaemia, which is aggravated by pregnancy-related hemodilution. Blood loss during labour and additional factors like pph and episiotomy cause anaemia to worsen and become more common. Between November and December 2021, we conducted an observational study at the district hospital in Chhindwara. All patients who delivered vaginally had their haemoglobin levels checked. In our study, we looked at 300 patients, 273 of whom had anaemia. There were 190 patients with mild anaemia, 77 with moderate anaemia, and 6 with severe anaemia. About 65% of patients had spacing of less than three years, and about 35% had spacing of more than 3 years. Anemia was most severe in second para patients. We conclude that 91% of women had post-partum anaemia. The high prevalence of post-partum anaemia highlights the significance of diagnosing and treating prepartum anaemia as well as spreading awareness of the ideal childbearing interval, which may represent a key strategy for lowering the prevalence of anaemia.

Keywords---anaemia, delivered vaginally, morbidity.

Introduction

Anaemia is the most common disease in the world, affecting >1.5 billion population. Furthermore, iron deficiency anaemia accounts for more than 50% of cases of anaemia. Iron deficiency anaemia is common during pregnancy and the postpartum period and can lead to serious maternal and fetal complications. The lower threshold value of hemoglobin (Hb) in pregnant women is <11 g/dL during the 1st and 3rd trimesters, and <10.5 g/dL during the 2nd trimester.[1]

The Hb level increases in the first week postpartum as the haemodilution due to pregnancy disappears and the iron reserves of body become available[7] Anaemia is much commoner problem because postpartum level of Hb are affected by two main factors which are gestational anaemia and severity of peripartum blood loss.[1,8,9]

In the postpartum period, a Hb concentration <10 g/dL indicates clinically significant anemia[4]. Some authors defined postpartum anemia as a hemoglobin level below 11.0 gm/dl.[3] in this study, we considered postpartum anemia as defined in the 3rd trimester which is 11.0 gm/dl. A study from Berlin examined women 24–48 hours after delivery, they found a 22% prevalence of postpartum anaemia if they considered hemoglobin cutoff value less than 10.0 g/dl and found prevalence in 50% of women if they considered the cutoff value of hemoglobin <11.0 g/dL[6]

It is estimated that 41.8% of pregnant women worldwide are anaemic. At least half of this anaemia burden is assumed to be due to iron deficiency.[2]The requirement for iron ranges from 0.8mg/day in the first trimester to 4 and 5 mg in the second trimester and up to 7.5 mg/day in the third trimester, averaging approximately 4.4 mg daily throughout pregnancy[5]. In India, most attention is given during the antenatal period to control maternal and fetal complications. The entire focus of the family and the health system shifts to the newborn once the mother delivers the baby, and the postnatal period is neglected. So we decided to conduct this study to know the prevalence of maternal anaemia in the postnatal period.

Methodology

This was an institutional-based observational study conducted from November 2021 to december 2021. It was conducted at District Hospital Chhindwara in patients who were attending the hospital for the maternity service.

Inclusion criteria

The women with term pregnancy without having medical complications and multifetal pregnancies were included in the study.

Exclusion criteria

Women delivered through cesarean section, women with chronic illness or conditions that could lead to anemia such as malaria, active helminthes or other parasitic infections, hemoglobinopathies, malignancies, tuberculosis etc;

Data were also recorded for the use of age, residence, parity, spacing, neonate birth weight and application of episiotomy.

Results

The demographic data of the sample population is shown in table no.1, The mean age of participants was 24.35 ± 3.163 years, and the maximum number of women were enrolled in the subcategory of age between 21-25 years, as age was divided into four subcategories. The participants were divided into two categories as per their residence, the women belonging to the municipal corporation areas are counted in the urban population and those who were from panchayat areas (Village council) are counted in the rural population. The majority of participants belonged to the rural population (59.0%) and comparatively less (41.0%) of participants belonged to the urban population. The participants were divided into two categories according to having a perineal tear and no tear, the participants who had perineal tear and episiotomy were kept under the same category, we found 46.7% of cases either had an episiotomy or a second-degree perineal tear, and rest of the women delivered without a perineal tear or mild mucosal abrasions and tear.

We found the prevalence of immediate postpartum anaemia in 91% of cases in our study population. Out of 300 cases, only 27 patients were found with hemoglobin of 11 gm/dl or more, and 273 patients were found with < 11.0 gm/dl. 85% of women were found anaemic (hemoglobin < 11.0 gm/dl) just before delivery (within 7 days).

Table no. 1, Demographic variables

variable	Category	frequency	percentage
	<20	31	10.3
Age	21-25	178	59.3
	26-30	78	26.0
	>30	13	4.3
Residence	Rural	177	59.0
	Urban	123	41.0
Episiotomy	Yes	140	46.7
	No	160	53.3
Birth weight	Low	38	12.7
	Normal	244	81.3

	High	18	6.0
Parity	1	94	31.3
	2	126	42
	3 and above	80	26.6
Spacing	<3 years	193	64.3
	>3 years	107	36.6

after comparing mean hemoglobin levels in pre-delivery (10.0363) with post-delivery (9.2980), we found a significant decrease in mean hemoglobin level.

Paired Samples Statistics					
		Mean	N	Std. Deviation	Std. Error Mean
Pair	Pre-delivery Hb	10.0363	300	.89681	.05178
	Post delivery Hb	9.2980	300	1.06513	.06150

In the early postpartum period, we found 91% anaemia, within these, there was mild anaemia in 63.3% of cases, moderate anaemia in 25.7% cases, and severe anaemia in 2.0% of cases. similarly, during the pre-delivery period, we found anaemia in 85% of cases among these 76.3% cases were mildly anaemic, 8.0% cases were moderately anaemic and only 0.7% cases were severely anaemic.

Table- postpartum Anaemia level in study population

Anaemia level (Hb in gm%)	Numbers	Percentage
No anaemia (≥ 11.0)	27	9.0%
Mild Anaemia (10.0-10.9)	190	63.3%
Moderate Anaemia (8.0-9.9)	77	25.7%
Severe Anaemia (<8.0)	6	2.0%

Table- predelivery Anaemia level in study population

Anaemia level (Hb in gm%)	Numbers	Percentage
No anaemia (≥ 11.0)	45	15%
Mild Anaemia (10.0-	229	76.3%

10.9)		
Moderate Anaemia (8.0-9.9)	24	8.0%
Severe Anaemia (<8.0)	2	0.7%

		Episiotomy		total	Asymp. Sig. (2-sided)
		Yes	no		
Pre-delivery anaemia category	No Anaemia	20	25	45	0.319
	Mild	112	117	229	
	moderate	7	17	24	
	severe	1	1	2	
total		140	160	300	

Discussion

In our study We found 91% prevalence of postpartum anaemia which is comparable to a study in Rajasthan, some other authors reported the prevalence rate between 50 to 80% in different settings[3]. Maximum women came into the category of mild and moderate anaemia respectively and only 2% population come into the severe anaemia category. There is a decrease in the number of severe cases of anaemia during labour or in postpartum due to blood transfusion to correct anaemia. Moderate to severe, but not mild, maternal anemia appears to have an association with small for gestational age fetuses[7]. so we can consider the Hb level of 10.0 gm% as the cut off value for well being in peripartum period with expected good fetal outcomes. Decreased spacing between birth is associated with higher incidence of anaemia. that is due to decreased reserve of iron in body. this finding matches with Multiparity also and leads to high incidence of anaemia, In our study population there is a myth of not to travel at 8th month of pregnancy, so some women avoid to visit hospitals. So there is a break in regular antenatal services and some women reports directly at the time of delivery in hospital. Most of the women found with hemoglobin with less than 11.0 gram per dl. women with pregnancy with anaemia should be followed regularly in antenatal clinics and anaemia must be treated before labour to prevent undue complications.

If a woman is diagnosed with anaemia in a clinical setting, she should be treated with daily iron (120 mg of elemental iron) and folic acid (400 µg or 0.4 mg) supplementation until her hemoglobin concentration rises to normal (2, 21). She can then switch to the standard antenatal dose to prevent recurrence of anaemia. •

The postnatal period is a critical transitional phase for both the mother and the newborn. Postpartum anaemia alters the emotion and cognition and is also associated with postpartum depression. It also plays an important role in decreased milk production and immunity.[8] Additionally, depression during pregnancy is also related to a range of other negative outcomes such as social isolation, marital conflicts, delayed motor skills or intellectual development in the

infant, embryonic growth restriction, and high-stress response in newborns at delivery⁹.

We did not find any significant relation between other obstetrics parameters with post partum anaemia except pre-delivery anaemia. Pre-delivery anaemia was the most common factor associated with post partum anaemia in target population in this study [10,11]. The finding corresponds with the study done by Rakesh PS et al. at rural area of Tamilnadu found Antenatal anaemia as the risk factor for the post partum anaemia.

We did not find any significant relation with application of episiotomy as a risk factor of anaemia in post partum period. This

Conclusion

The prevalence of post-partum anemia in district hospital Chhindwara was 91%. Less than 3 years interval between the last two pregnancies was significantly associated with anemia in post-partum period while low parity and delivery by vaginal route were protective. The high prevalence of post-partum anemia found in this study highlights the importance of screening and treating prepartum anemia as well as provision of education on ideal child spacing which may constitute an important approach for reducing the prevalence of anemia.

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