

Blood Transfusion Practices in Obstetrics PT in a Tertiary Hospital

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Abstract: Background: Blood Transfusion is recognized as one of the eight essential component of comprehensive emergency obstetric care which has been shown to reduce the maternal mortality.^{1, 2} In developing country like India, efforts should be done to make blood and transfusion services well maintained and quickly available to reduce maternal morbidity from haemorrhage and thus decrease the incidence of maternal mortality. Accurate evaluation of blood loss is important to determine whether transfusion should be performed, but it is difficult in obstetric hemorrhage^{7, 8, 9}. Transfusions decisions are clinical judgments that should be based on the overall clinical assessment. Aims and objective: To determine the incidence of Blood Transfusion in Obstetric cases and to evaluate the various indications for transfusion of blood and components in Obstetrics cases in the Department of Obstetrics and Gynaecology. Material and method: This prospective observational study conducted in the department of Obstetrics and Gynaecology NSCB Medical College & Hospital, Jabalpur m. p. during period of March 2019 to August 2021. Total 425 cases were included in the study. Results: maximum number of women studied were in the age group 20-30yrs (96.7%) followed by age group more than 30 yrs (2.6%) and 0.7% women in age group less than 20yrs. majority of women were belonged to rural area (90.4%) and 9.6% belonged to urban area. majority of women were booked (97.4%) while 2.6% were unbooked. 88.7% belonged to lower class, 10.6% belonged to middle class and 0.7% belonged to upper class. 77.2% were multigravida and 22.8% were primigravida. majority of women had delivered vaginally 73.6%, 17.6% women had cesarean section, 2.6% had operative vaginal delivery, 4% underwent dilatation and curettage while 2.1% were subjected to exploratory laparotomy. 322 (75%) women had require blood transfusion during antenatal period due to mod-severe anaemia and post natal require 94 (22%) and medical disorder such as thalassaemia and sickle cell ds which were 1.2%. maximum women were transfused RCC were 328 (77.2%), 20.5% received RCC&FFP, 1.2% received RCC & CRYO & FFP, 0.7% transfused RCC & CRYO and 0.2% received CRYO and whole blood. no adverse reaction was found in majority of women of above 4 type of transfusion but proportion was higher in RCC as compare to that in FFP and whole blood and CRYO PPT. Conclusion: The transfusion practices though, have declined due to strict screening protocol and control procedures, yet a significant amount of blood/component transfusion have been seen in obstetric units. Severe anaemia postpartum hemorrhage is still a significant cause for transfusion in Obstetrics. component transfusion is the need of present day. Blood transfusion practices should be valid indication and there should be appropriate use blood/component transfusion therapy. Clinical significant: Ensuring a safe supply of blood and blood products and the appropriate and rational clinical use of blood are important public-health responsibilities of every national state government, especially for saving lives of mothers who need comprehensive emergency obstetrics care services because of antenatal severe anaemia with postpartum haemorrhage.

Keywords: Blood transfusion, obstetrics patient, component therapy

1. Introduction

This study was an effort to identify and highlight existing transfusion practices in our hospital, including the indications of various blood components used and the allergic reaction encountered. Blood transfusion can be a lifesaving intervention. Obstetricians and gynaecologists need to be aware of the potential complications of blood transfusion and the appropriate use of blood transfusion in their practice.¹ Obstetricians and gynaecologists utilize a large number of blood units. Anaemia is common during pregnancy.⁴

Blood Transfusion is recognized as one of the eight essential component of comprehensive emergency obstetric care which has been shown to reduce the maternal mortality.^{1, 2} In developing country like India, efforts should be done to make blood and transfusion services well maintained and quickly available to reduce maternal morbidity from haemorrhage and thus decrease the incidence of maternal mortality.

Safe blood products, used correctly, can be life saving¹ in cases with major and life threatening obstetric hemorrhages, which occurs in 3-5%² and 1%³ of deliveries.

Studies show that there is inappropriate transfusion in 15-45%, either transfusion was done in, not indicated cases or

too late or too little done in indicated cases⁴.

The appropriate use of blood and blood products means the transfusion of safe blood product only to treat a condition leading to significant morbidity and mortality that can not be prevented or managed effectively by other means⁵. Medical alternatives to transfusion include iron supplementation and erythropoiesis-stimulating agent (ESA)⁶.

Accurate evaluation of blood loss is important to determine whether transfusion should be performed, but it is difficult in obstetric hemorrhage^{7, 8, 9}. Transfusions decisions are clinical judgments that should be based on the overall clinical assessment the individual patient. It should not be based on laboratory parameters alone¹⁰.

Prior to the administration of blood or blood components, the indications, risks and benefits, of a blood transfusion and possible alternatives must be discussed with the patient and documented in medical record¹¹.

2. Material and Methods

A prospective observational study was carried from March 1st 2019 to 31 August 2020 at tertiary care hospital in the department of obstetrics and gynecology. All the women admitted in the obstetrics ward who received blood and its

component transfusion formed study group. The data collected were analysed and tabulated.

3. Result

Table 1: Demographic Characteristics of Study Population

Age (In years)	Frequency (N=425)	Percentage %
<20 Yrs	3	0.7
20-30 Yrs	411	96.7
>30 Yrs	11	2.6
LOCALITY		
RURAL	384	90.4
URBAN	41	9.6
BOOKING STATUS		
BOOKED	11	2.6
UNBOOKED	414	97.4
SOCIOECONOMIC STATUS		
UPPER	3	0.7
MIDDLE	45	10.6
LOWER	377	88.7
PARITY		
PRIMI	97	22.8
MULTI	328	77.2

maximum number of women studied were in the age group 20-30yrs (96.7%) followed by age group more than30 yrs (2.6%) and 0.7% women in age group less than 20yrs. majority of women were belonged to rural area (90.4%) and 9.6% belonged to urban area. majority of women were booked (97.4%) while 2.6% were unbooked.88.7% belonged to lower class, 10.6% belonged to middle class and 0.7% belonged to upper class.77.2% were multigravida and 22.8% were primigravida.

Table 2: Distribution according to Gestational Weeks

Gestational age (Age in wks)	Frequency, N=425	Percentage %
<12 Weeks	51	12
12-28 Weeks	14	3.3
28-36 Weeks	44	10.4
36-40 Weeks	340	80
>40 Weeks	3	0.7

- As per table no.2, majority of women 80% were between 36-40weeks of gestation, 12% were in less than 12weeks, 10.4% were in 28-36weeks, 3.3% between 12-28weeks and 0.7% were in more than 40weeks.

Table 3: Distribution according to mode of delivery

Mode of Delivery	Frequency, N=425	Percentage %
Vaginal delivery	313	73.6
Cesarean section	75	17.6
Operative vaginal	11	2.6
Dilatation & curettage	17	4
Exploratory Laparotomy	9	2.1

- As per table no.3, majority of women had delivered vaginally 73.6%, 17.6% women had cesarean section, 2.6% had operative vaginal delivery, 4% underwent dilatation and curettage while 2.1% were subjected to exploratory laparotomy.

Table 4: Distribution according to type of risk factor (indications) responsible for blood transfusion

Indication of Blood / Component Transfusion in Obstetrics	Frequency N=425	Percentage%
Antenatal factor	322	75.8
Postnatal factor	94	22.1
Medical factor	5	1.2
Ante and Post natal factor	4	0.9

- As per table no.4 shows that, 322 (75%) women had require blood transfusion during antenatal period due to mod-severe anaemia and post natal require 94 (22%) and medical disorder such as thalassaemia and sickle cell ds which were 1.2%.

Table 5: Distribution according to type of Transfusion (Blood and its Component)

Blood and its components	Frequency (N=425)	Percentage %
RCC	328	77.2
RCC & FFP	87	20.5
RCC & Cryo & FFP	5	1.2
RCC & Cryo	3	0.7
Whole blood	1	0.2
Cryo	1	0.2

- This table is shows that maximum women were transfused RCC were 328 (77.2%), 20.5% received RCC & FFP, 1.2% received RCC & CRYO & FFP, 0.7% transfused RCC & CRYO and 0.2% received CRYO and whole blood.

4. Discussion

The present study was conducted in the Department of Obstetrics and Gynecology N. S. C. B. Medical College, Jabalpur Madhya Pradesh. It was a prospective observational study.

Women who received blood and its component for various obstetric indications, and qualifying the inclusion criteria formed the study group. Total 425 women included in the study. Incidence of transfusion practices in our obstetric ward found to be 26.6%.

Age distribution

Out of 425women, 96.7% cases belonged to age group 20-30 year, 2.6% were in >30 years age group and 0.7% were in age group <20years.

Since the reproductive age group commonly between 20-30yrs, we found majority of women in this group.

In the study by Chawla et al.¹³ maximum women found to be in the age group 20-30 years. Singh S et al¹⁴, also found the maximum number of women in the age group 20-30 years. In study by F Choudhary et al.,¹ maximum women were between age group 20-30years comprising 76.5%. Our results are comparable with our study.

Demographic distribution

In our study 90.4% women belonged to rural area while 9.6% were from urban area.

Singh S et al.,¹⁴ found 53.5% women from urban areas while 46.5% from rural area in their study.

Since our institution is a tertiary center we receive many patients from vicinity rural areas.

Socioeconomic Status

In our study, 88.7% belonged to lower class, 10.6 % belonged to middle class and 7% belonged to upper class.

Singh S et al.¹⁴ found that maximum women were in lower income category in their study.

Booking status

We found 97.4% women unbooked while 2.6 % booked in the present study.

F Choudhary et al.¹¹, reported 52.2% unbooked cases and 47.4% booked.

Parity-

In present study, majority of women 77.2% were multigravida while 22.8 % found to be primigravida.

In the study conducted by F Choudhary et al.¹¹ out of 158 cases, 68% were multiparous and 31% women were primigravida.

In study conducted by Chawla et al.¹³ 53% were multiparous, while 46% women were primi gravida. We found similar results in our study.

Gestational age

In the present study, 80% women were in between 36-40 weeks of gestation, 12% were in less than 12 weeks, 10.4% were in 28-36 weeks, 3.3% between 12-28 weeks and 0.7% were in 40 weeks. Chawla et al.,¹³ reported 71% women between 31-40 weeks gestational age.

Mode of delivery

In present study 73.6%, women delivered vaginally, 17.6% underwent cesarean section, 2.6% had operative vaginal delivery, while 4% subjected to dilatation and curettage. 2.1% cases had exploratory laparotomy. Chawla et al.¹³ found 50% vaginally delivery, 31.25% cesarean section and 3.12% operative vaginally delivery respectively. The results are comparable.

Factors responsible for blood transfusion

In our study 322 women (75%) were moderate to severely anaemic, 8 were ectopic cases (1.9%) while 19 (4.5%) received as a sequel to varying types of abortion. 94 (22%) transfusion were due to post partum factors like varying degree postpartum haemorrhage, abnormal labor and delivery while 1.2% cases owing to haemoglobinopathies (thalassaemia and sickle) required transfusion.

Study conducted by Chawla et al.¹³ found anaemia in antenatal period as the most common indication for transfusion. Patel VP et al.,¹² reported 70% transfusion due to obstetrics hemorrhage and 30% due to anaemic status during antenatal period.

Type of transfusion (blood and its components)

In our study 77.2% women received Red Cell Concentrate (RCC), 20.5% received RCC and Fresh Frozen Plasma (FFP), 1.2% received combination of RCC, Cryoprecipitate and FFP, 0.7% received RCC and Cryoprecipitate and 0.2% each received Cryoprecipitate and whole blood.

Study conducted by Patel VP et al.,¹² found 80% women transfused with Packed Cell Volume (PCV), 20% received combination of blood and blood products like FFP, CRYO and PRC.

5. Conclusion

The transfusion practices though, have declined due to strict screening protocol and control procedures, yet a significant amount of blood/component transfusion have been seen in obstetric units. Severe anaemia and placental cause postpartum hemorrhage is still a major cause for transfusion in Obstetrics. Blood transfusion, though a life saving procedure, requires appropriateness in transfusion practices.

6. Recommendation

Since blood/component transfusion is lifesaving procedure, we recommend collaborative measures of a team consisting of obstetrician, physician/hematologist and anaesthesiologist to formulate strategies, guidelines and policies regarding transfusion practices and its appropriateness.

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