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Primary Postpartum Haemorrhage – Morbidity And Mortality

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ABSTRACT

Background: To study the incidence of primary postpartum haemorrhage, morbidity and mortality. **Methods:** Study was carried out in department of obstetrics and gynaecology, Swaroop Rani Nehru and associated Hospital, M..L.N. Medical College Allahabad. All pregnant women who underwent vaginal delivery and those who were admitted within 24 hours of delivery were included in the study .Group allocation was done randomly in three groups. Analysis of study data was done by chi square test. **Result:** The incidence of primary postpartum haemorrhage was 4%.Maximum incidence was noted in group A (5.8%) and minimum in group C (4.2%) .The morbidity which were related to primary postpartum haemorrhage were anaemia (68%),infection (42%),blood transfusion related complications (26%),DIC(4%), and hysterectomy (3%). 0.3% of patients died of severe postpartum haemorrhage .Management options included intensive therapy ,B-Lynch sutures and hysterectomy. **Conclusion:** ?

Keywords: Obstructed labour, Uterine rupture.

INTRODUCTION

Postpartum hemorrhage (PPH) has been a nightmare for obstetricians since centuries. Currently in developed countries, embolism is the leading cause of maternal mortality, following improvement in the prevention and the treatment of the three traditional horsemen (hemorrhage, infection and hypertension). However, in developing countries, PPH continues to be a leading cause accounting for 25-43% of maternal deaths. An early observational study of WHO reported that blood loss more than 500 ml occurs in 40% women after vaginal delivery and more than 1000 ml in 30% women after an elective repeat cesarean section. The WHO technical working group, 1990, defined PPH as bleeding in excess of 500 ml in the first 24 h after delivery. PPH is a frequent complication of delivery and its incidence is commonly reported as 2-4% after vaginal delivery and 6% after cesarean section with uterine atony being the cause in about 50% cases.

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Many studies have suggested this to be an underestimation of normal loss and some suggest cutoff for clinically significant PPH should now be revised to 1000 ml. The aim of this study was to identify the causes for early PPH and to assess the extent of morbidity, especially the "near-miss" cases as well as mortality associated with it. "Near-miss" morbidity is considered to be an underestimated but more sensitive indicator of maternal health than mortality.

Primary postpartum haemorrhage has traditionally been defined as blood loss of greater than 500 mL within 24 hours of delivery, the incidence of which is quoted as approximately 5%. More recently, this definition has been challenged, due in particular to the inaccuracies of blood loss measurement. Furthermore, clinical definitions now include a fall in haematocrit and the need for transfusion.[1] Massive primary postpartum haemorrhage is defined as a blood loss of greater than 1000 mL within 24 hours of delivery and although there is little reported in the literature, the incidence is reported as 1–2% of all deliveries.[2] Although postpartum haemorrhage remains a far greater problem in developing countries, it features consistently as a significant cause of maternal mortality in developed countries, with an incidence of approximately one in 100,000 deliveries.[3] Substandard care, including a lack of

familiarity with guidelines and a delay in recognition of the severity of blood loss, has been repeatedly cited as contributing factors. Previously identified risk factors for primary postpartum haemorrhage include maternal obesity, advanced maternal age, babies weighing more than 4 kg, antepartum haemorrhage and prolonged labour. We conducted study to find out cases of massive postpartum haemorrhage at our hospital to assess the incidence, to identify possible aetiological factors, and if possible, to implement change based on findings of the study.

MATERIALS AND METHODS

The study was conducted in the department of obstetrics and gynaecology, Swaroop Rani Nehru and associated Hospital, Moti Lal Nehru Medical College, Allahabad .All pregnant women who underwent vaginal delivery or caesarean section and those who were admitted within 24 hours of delivery in emergency ward. The cases were those in whom blood loss was more than 500ml in vaginal delivery and more than 1000ml in caesarean section .A detailed clinical history including parameters maternal age, parity, gestation, mode of delivery, cause of postpartum haemorrhage and grade of doctor managing the case were recorded in set proforma. Treatment allocation was done randomly in three groups. Group A received 800 microgramms of misoprostol orally, group B received 10 units oxytocin and methylergometrine and group C received 250 microgramms of 15 methyl PGF2 alpha. In case of postpartum haemorrhage type of postpartum haemorrhage was noted. Variables concerning delivery such as mode of delivery, episiotomy, tears, atonicity of uterus, perineal laceration, haematomas, any retained products of conceptions was noted. Examination of placenta was done. Maternal complications were noted including coagulation and renal dysfunction, need for transfusion and admission to the High Dependency Unit (HDU). Blood loss was measured. In an attempt to determine cases of maternal mortality, we looked at cases of severe acute maternal morbidity. Our definition was based on all of the following being present: postpartum haemorrhage ≥2500 mL, blood transfusion ≥8 units, development of disseminated intravascular coagulation and admission to the High Dependency Unit.

Deviation was analysed and were categorised as minor or major. Minor deviations were those where one step in the management process was omitted (e.g. not giving a baseline oxytocic bolus but instead going straight to a 40 IU oxytocin infusion). Major deviations were those where two or more steps in the management process were omitted.

RESULTS

Out of 1521 patients studied ,85 patients (5.5%) had primary postpartum haemorrhage .Majority of women who had postpartum haemorrhage were of age group 26- 30 years, multiparous, unbooked, were residing in rural areas, and were from lower socioeconomic status.

Mean haemoglobin level at the time of admission in all the three groups was 9.08 gm/dl. Maximum fall in haemoglobin was seen in group A and minimum fall in haemoglobin 48 hours after delivery was seen in group c. [Table 3] Mean haematocrit level at the time of admission was 27.78% in all the three groups. Maximum fall in haematocrit was seen in group A and minimum fall 48 hours after delivery was seen in group C.

Mean amount of blood loss in vaginal delivery in group A was maximum and minimum in group C [Table 5]. In group A, maximum number of patients suffered from postpartum haemorrhage (10 patients, 4.76%) than group B and C. Mean amount of blood loss in caesarean section was maximum (600ml) in group A and minimum in group Band C. In group A, maximum number of patients had major postpartum haemorrhage (25 patients, 7.65%).

Atonicity of uterus was the most common cause of postpartum haemorrhage in all the three groups in vaginal and caesarean delivery [Table 5].

Maximum number of the patients(10%) in group A required intensive therapy and minimum number of patients in group B and C required intensive therapy [Table 7]. Maximum number of patients (8 patients, 1.5%) in group A required surgical intervention, minimum number of patients in group B (6 patients, 1.1%) required surgical intervention. [Table 6]. 6 patients (0.39%) died of severe postpartum haemorrhage. In group A, maximum number of patients (3 patients, 0.75%) died of severe postpartum haemorrhage, minimum number of patients in group B (1 patient, 0.25%) died of severe postpartum haemorrhage. [Table 9]

Table 1: Age, Socioeconomic Status, Habitat And Booked Status Of The Patients.

Variables		Group A		Group B		Group C	
		Cases	%	Cases	%	Cases	%
Age	Mean age ± SD	26±2.75	86	25±2.79	82	26±2.7	84
Socioeconomic status	Low	29	5.7	21	4.1	23	4.5
	Middle	4	o.78	3	0.59	2	0.39
	High	2	0.39	2	0.39	2	0.39
Habitat	Urban	8	0.94	8	0.94	8	0.94
	Rural	21	2.4	20	2.1	20	2.1
Booked status	booked	2	1	1	0.5	1	0.5
	Unbooked	33	12.13	22	7.7	25	9.6

Table 2: Parity Of The Patients

Parity	Group A		Group B		Group C	
	Cases	controls	cases	controls	Cases	Controls
P1+0	2	50	1	33	2	33
P2+0	2	60	2	100	3	90
P3+0	5	150	3	160	1	168
P4+0	5	87	8	80	8	72
P5+0	13	75	7	80	6	80
P6+0	8	50	5	30	5	40

Table 3: Distribution according to mean haemoglobin level at the time of admission (Hb1) and after 48 hours of delivery (Hb2)

Variables	Group A		Group B		Group C	
	Hb 1	Hb 2	Hb 1	Hb 2	Hb 1	Hb 2
Number	507	507	507	507	507	507
Minimum	10	9	10	9	10	9
Maximum	14	13.8	13	12.7	13	12
Mean	9.08	8.009	9.010	8.2	9.08	8.4
Std deviation	0.84	0.832	0.7396	0.7399	0.7396	0.8100

Table 4: Mean Haematocrit At The Time Of Admission (HCT 1) And After 48 Hours Of Delivery (HCT 2)

Variables	Group A		Group b		Group c	
	Hct 1	Hct 2	Hct 1	Hct 2	Hct 1	Hct 2
Number	507	507	507	507	507	507
Minimum	30	27	30	27	30	27
Maximum	42	40	39	38.1		
Mean	27.73	24	27.73	24.98	27.73	24.78
Std deviation	2.522	2.95	2.124	2.384	2.12	2.3814

Table 5: Distribution Of Blood Loss In Ml In Vaginal Delivery And Caesarean Section -

Blood loss (ml)	Group A				Group B				Group C			
	Vaginal delivery		Caesarean section		Vaginal delivery		Caesarean section		Vaginal delivery		Caesarean section	
	No	%	No.	%	no	%	No	%	No	%	No	%
59-199	10	4.8	-	-	6	2.8	-	-	10	4.8	-	-
200-349	186	89	50	15	185	88.9	59	18%	189	90.8	45	13%
350-499	6	2.8	60	18	4	1.9	50	15%	6	2.8	60	18%
500 - 1000	10	4.76	190	58	7	3.36	180	55%	7	3.36	195	60%
1000 - 1500	-s	-	20	6	-	-	16	5%	-	-	20	6%
>1500	-	-	5	1.5	-	-	4	1.2%	-	-	5	1.5%

Table 6: Causes Of Postpartum Haemorrhage In Vaginal Delivery And Caesarean Section

CAUSES	Group A				Group B				Group C			
	Vaginal delivery		Caesarean section		Vaginal delivery		Caesarean section		Vaginal delivery		Caesarean section	
	NO.	%	No	%	NO	%	No	%	NO	%	No	%
Atonicity	4	30	10	50	2	20	5	35	2	20	7	35
Retained products	2	20	1	5	2	20	1	5	2	20	1	5
Prolonged labour	1	10	2	8	1	10	1	5	1	10	1	5
Genital tract trauma	1	10	-	-	1	10	-	-	1	10	-	-
Placenta praevia	-	-	5	28	-	-	5	25	-	-	5	25
Adherent placenta	1	20	3	16	2	20	4	20	2	20	4	20
Ruptured uterus	-	-	2	8	-	-	1	5	-	-	2	5
Obstructed labour	1	10	3	12	2	20	3	15	2	20	3	15

Table 7: Treatment Options For Primary Postpartum Haemorrhage

Treatment options	GROUP A		GROUP B		GROUP C	
Intensive therapy	No.	%	No.	%	No.	%
	51	10	35	7	40	8
Blood transfusion	No.	%	No.	%	No.	%
	35	7	25	5	25	5
Surgery	No.	%	No.	%	No.	%
	8	1.5	6	1.1	7	1.3

Table 8: Morbidity Due To Postpartum Haemorrhage

Morbidity	Group A	Group B	Group C
Blood loss >2000ml	20	20	18
Blood loss>3000ml	5	3	5
Blood transfusion	28	25	25
Blood tnans>6 units	8	6	6
Admit in ICU	6	5	5
Examination under anaesthesia	3	0	0

DISCUSSION

Massive postpartum haemorrhage is associated with significant maternal morbidity and a small but consistent maternal mortality rate. Confidential Enquiry reports continue to highlight substandard care as an important factor in deaths attributable to postpartum haemorrhage.[3] This includes a lack of familiarity with the guidelines, which should be readily available in all delivery suites, a delay in involving more senior staff and a failure to adequately assess total blood loss prior to the development of a coagulopathy.

This study revealed an incidence of primary postpartum haemorrhage about 5.2% of all deliveries, an incidence similar to that reported elsewhere.[2] The distribution of cases according to their aetiology was also similar to other studies. Grand multiparity is considered by some workers to be a risk factor for postpartum haemorrhage,[5] and indeed this was demonstrated in our series. Specific risk factors for postpartum haemorrhage were not identified.

The guidelines for the management of postpartum haemorrhage were followed only when the blood loss was thought to be very substantial. This observation is not entirely unexpected, as this has previously been identified as a cause for concern.[3] Greater focus on the evolving processes of clinical governance and clinical risk management has been advocated,[6,7] and this approach in our study with stricter adherence to the guidelines has led to a reduction in the incidence of massive postpartum haemorrhage.

Although the incidence of postpartum haemorrhage of greater than 1 L is quoted as approximately 1% of all deliveries, in reality, life-threatening postpartum haemorrhage or near-miss mortality due to haemorrhage is thought to occur on average four times a year in a large obstetric unit.[8] Our initial data suggest that the figure is more like eight times a year for our large unit and we noted that this complication was not particularly associated with deviation from hospital guidelines. The relative infrequency of this obstetric emergency does not allow for a familiarity with the drill required to manage this situation efficiently.

Women delivered by caesarean section deliveries, both elective and emergency, in 61% of massive postpartum haemorrhage cases. This underlines the fact that caesarean section is not an insignificant operation. The significant differences in relative risk of primary postpartum haemorrhage calculated in this series only serves to reinforce this point. This information is not only interesting but also clinically very important for counselling purposes.[3]

Almost 35% of all patients in this study received misoprostol. It has been shown to produce rapid sustained uterine contraction and can be effectively administered orally, vaginally or rectally.[4] It is a cheap and effective alternative to carboprost in poor resource setting, A randomised controlled trial from South Africa by Etuk S J et al has reported that rectal misoprostol appears to be a safe method of treating postpartum haemorrhage and may even be better than a combination of intramuscular syntometrine and an intravenous syntocinon infusion in poor resource settings.[9]

CONCLUSION

Most of the women in present study who had postpartum haemorrhage were young ,illeterate, multiparous, unbooked, belonged to lower socioeconomic status and were rural dwellers. These results suggest that early marriage, early child bearing ,malnourishment, lack of awareness and accessebility of various obstetric health services increases the incidence of postpartum haemorrhage resulting in increased maternal morbidity and mortality due to postpartum haemorrhage. In the present study most common cause of postpartum haemorrhage was found to be uterine atony which might be due to lack of active management of 3rd stage of labour. Most of the deliveries complicated by postpartum haemorrhage seen in the study were conducted by unskilled attendants having little knowledge or no knowledge of 3rd stage of labour.

Since deaths due to postpartum haemorrhage are potentially preventable its management starts with the identification of risk factors. The next most important line of management is active management of 3rd stage of labour, prompt and adequate replacement of intravascular blood volume .In order to reduce maternal morbidity and mortality from postpartum haemorrhage women should be encouraged to make use of existing health facilities by looking and receiving antenatal care, every attendant at delivery need to have knowledge ,skills and critical judgement required to carry out active manage ment of 3rd stage of labour and have access to appropriate management.

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