Original Article

Postpartum haemorrhage: A cause of severe acute maternal morbidity and mortality

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Abstract

Objectives: To know the incidence of Severe Acute Maternal Morbidity (SAMM) and Mortality because of Post-Partum Hemorrhage (PPH). To categorize PPH cases to enable prediction of severity of PPH possible in order to prevent mortality. **Methods:** It is a retrospective analysis of cases of PPH managed at this centre over a period of two years. The cases were analysed for the interventions done to manage PPH. Cases of PPH were categorized into uncomplicated and complicated as per predefined criteria. Cases both delivered in this institution and referred from outside were included. Cases referred out were not included. **Results:** During the study period of two years 9060 women delivered. During the same period 86 cases of PPH were managed. 55 cases of PPH were from this hospital delivered women giving a rate of 6/1000 deliveries. 31cases of PPH were managed as referrals to this hospital. Out of 86, 27 suffered massive blood loss and required multiple interventions, we categorized them as 'complicated PPH'. 8 deaths occurred due to PPH during this study period and all these deaths belonged to 'complicated PPH' category. **Conclusion:** Identifying a case of 'SAMM' from PPH is identifying a case of 'complicated PPH', its incidence in this study is 2.98/1000 deliveries and 31.39 for 100 cases of PPH. Identifying a case of PPH to a category 'complicated PPH' and prompt action on it will prevent maternal mortality from PPH. A need of additional measures to control PPH should initiate life saving protocols (a dedicated team who would arrange adequate blood, adequate laboratory support, adequate surgical skill, adequate close monitoring and if required transportation with all on the way assistance) as these are the cases which survive only if they are lucky to get good care.

Key words: severe acute maternal morbidity, post-partum hemorrhage, Complicated PPH, uncomplicated PPH.

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INTRODUCTION

Postpartum Haemorrhage (PPH) is commonly defined as a blood loss of 500 ml or more within 24 hours after birth, while severe PPH is defined as a blood loss of 1000 ml or more within the same timeframe. PPH affects approximately 2% of all women who give birth: it is associated not only with nearly one quarter of all maternal deaths globally but is also the leading cause of maternal mortality in most low-income countries. PPH is a significant contributor to severe maternal morbidity and long-term disability as well as to a number of other severe maternal conditions generally associated with more substantial blood loss, including shock and organ dysfunction[1].

Severe acute maternal morbidity (SAMM), also known as "near miss", is defined as "A very ill pregnant or recently delivered woman who would have died had it not been that luck and good care was on her side"[2].

A series of delays contribute to the late receipt of definite PPH care and to the PPH-related death in low-resource countries including: [3]

1) Delay in problem recognition, including an inability to accurately quantify the amount of blood loss;

2) Delay in deciding to seek assistance from skilled obstetric care providers;

3) Delay in reaching a facility that can provide lifesaving treatment; and

4) Delay at that facility in the receipt of definitive emergency obstetric care.

Identifying a case of PPH who belong to 'SAAM' category and initiating adequate and prompt care to her instead of leaving her to just luck-events, is the making good care deliberately available to her. The present study

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aims at- how to identify these cases of PPH who need special and intense efforts to save their life.

MATERIALS AND METHODS

Indoor case papers of all maternity admissions were searched for cases of PPH. Cases which were referred to other centres were excluded for reasons of 'outcome not known'. Cases of PPH were analysed to obtain data under following heads (Table 1).

Uterotonics used were oxytocin, methyl ergometrine, carboprost tromethamine and misoprostol. All cases received uterine massage before any other intervention was begun. Cases requiring more than simple measures and plenty of blood were categorized as complicated.

OBSERVATIONS AND RESULTS

Table 1: The heads under which data analysis is done

1. Total number of PPH cases	2. Number of PPH cases from study hospital deliveries.
3. Number of PPH cases from referrals.	4. Number of PPH cases of traumatic hemorrhage.
5. Number cases of PPH of traumatic + atonic hemorrhage.	6. Number cases of PPH of pure traumatic hemorrhage.
7. Number of cases of retained placenta with PPH	8. Number of PPh cases with DIC
9. Number of cases of PPH because of uterine infection.	10. Number of cases primary and secondary hemorrhage.
11. Cases managed by uterotonics alone.	12. Cases managed by Uterotonics + 2 or less blood transfusions.
13. Cases managed by surgical repair with or without 1 unit blood transfusion.	14. Cases managed by 3 or more than 3 units blood and/ or blood component transfusions.
15. Cases managed by manual removal of placenta.	16. Cases managed by surgical repair + 2 or more blood transfusions.
17. Cases managed by hysterectomy	18. Cases managed by intrauterine packing.
19. Cases managed by internal iliac artery ligation.	20. Deaths

Table 2: Distribution of PPH cases

Total deliveries	9060		Total	
Post-partum hemorrhage (86)	Primary PPH	Secondary PPH	PPH	
	76	10	86	
Study hospital deliveries	53	2	55	86
Referrals	23	8	31	
Traumatic	15	3	18	
Traumatic + Atonic	10	00	10	
Pure Atony	45	00	45	86
Retained placenta	04	00	04	
DIC	02	00	02	
Infection	00	07	07	

Table 3: Uncomplicated and Complicated PPH

Severity of PPH (Number of cases)	Management interventions	Number of cases	Total
Uncomplicated PPH (59)	Only uterotonics	15	59
	Uterotonics + 2 or less blood transfusions	24	
	Surgical repair with or without 1 unit blood transfusion	20	
Complicated PPH (27)	3 or more than 3 units blood and/ or blood component transfusion	33 (only 5 cases were managed purely by blood transfusions, all others required additional interventions)	68 (This total is more than 27 because many cases required a primary intervention plus variable units of blood transfusions)
	Manual removal of placenta	04 (1 received 3 units blood)	
	Surgical repair + 2 or more blood transfusions	09 (5 cases required more than 2 units of blood transfusions, 4 received 2 units)	
	Hysterectomy	12	
	Intrauterine packing	01	
	Internal Iliac Artery Ligation	01	
Deaths	More than one intervention and 3 or more blood/ blood products infusion.	08	

Table 2 and 3 show observations of analysis of these 9060 cases of PPH. Table 2 shows types of PPH, causative factors of PPH; and site of origin of the case and its distribution. Table 3 also shows the interventions done for the cases of PPH. Table 3 shows all deaths occurred in cases that required more than one intervention and 3 or more blood or blood products indicating these cases belonged to complicated PPH category.

DISCUSSION

Post partum hemorrhage world over is a prominent cause of Severe Acute Maternal Morbidity and Maternal Mortality. Practicing preventive measures and early detection are the most important factors in avoiding its deterioration into morbidity and mortality. Often inability to ascertain the degree and severity of PPH is the reason for delay in initiating the appropriate action at appropriate moment. The analysis of the data from this study suggests a method to identify cases which are possibly cases of SAAM from PPH. A team approach and aggressive management of this category the 'complicated PPH' would certainly be a step in preventing deaths from PPH. This study shows the common features that are shared by deaths from PPH and 'complicated PPH'. There were no deaths in the group categorized as 'uncomplicated PPH', these cases required simple management options to arrest PPH. We recommend a approach where categorizing PPH cases into 'complicated PPH', and 'uncomplicated PPH' should be practiced as a continuum while managing a case of PPH.

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