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CAN´T WE PREVENT PRIMARY POSTPARTUM HEMORRHAGE (PPH)?

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ABSTRACT

Objective: The objective of our study is to determine the risk factors of primary post partum hemorrhage (PPH), so that its avoidable factors can be prevented.
Design: Descriptive study.
Place and Duration of Study: This prospective study was conducted in labour ward of Nawabshah hospital Sindh Pakistan from 5th April 2008 to 8th Dec 2008.
Patients and Methods: Total of 121 patients were included in the study. Inclusion criteria were all patients admitted with or developed primary PPH in hospital after normal delivery or cesarean section. Exclusion criteria were patients with history of bleeding disorders and those on Heparin or Warfarin therapy.
Patient's information was recorded on predesigned proforma. which includes sociodemographic data, mode of delivery, spontaneous, induced, delivery conducted by and risk factors for primary PPH. Assessment of general health including anemia, B.P, abdominal, pelvic examination and laboratory investigations were done.
Results: A total of 121 cases of primary PPH were managed in study duration. Out of 121 patients majority 70(57.85 %) belongs to age group of 21-30 years.
Regarding parity, 84 (69.42%) was grandmultipara, while 16 (13.22 %) patients were multipara.
Majority of patients i.e. 71(58.67%) were unbooked, while 50(41.32%) were booked. 99(81.81%) patients were delivered in hospital.
Regarding cause of PPH, uterine atony was identified as major cause seen in 98 (80.99%) of patients while genital tract injuries were seen in 23 (19%) of patients
Commonest risk factor of PPH was grandmultiparity seen in 84 (69.42 %) of cases.
Conclusion: Results of our study showed that unbooked, uterine atony, grandmultiparity, augmented and induced labor were commonest risk factors responsible for primary postpartum hemorrhage.

Key words: primary postpartum hemorrhage, uterine atony.

INTRODUCTION:

Postpartum hemorrhage (PPH) remains the major cause of maternal morbidity & mortality worldwide and is still an important issue even in the developed world. [1] Primary PPH is defined as the blood loss of greater than 500 ml from genital tract in the first 24 hrs following delivery [2]. This compares with 1000 ml of blood loss for cesarean section [3]. There are 600,000 maternal deaths reported worldwide every year. 99% of these occur in developing countries [4]. 25% of deaths in developing world are due to PPH, the prevalence is 34% in Pakistan [5]. In majority of the cases death is due to avoidable factors. Common causes of PPH are uterine atony, retained placental tissues, uterine rupture, lower genital tract trauma, uterine inversion, and DIC [6,7]. Most common risk factors for uterine atony are prolong labour, augmented labour, grand multiparity, polyhydramnios and retained placenta. Prevention of uterine atonny is the key to

reducing the incidence of primary PPH.

Knowledge of the factors predisposing to uterine atony has application at two levels. The antenatal period & the management of labour. In a country like Pakistan, where trained medical personnel do not supervise a majority of all births, an understanding of the risk factors can help in antenatal identification of women at a high risk for PPH. These women can then be advised to deliver at centers which have appropriate facilities for careful management of labour and should the need arise, for the treatment of PPH. Objective of this study is to determine the risk factors of primary PPH, so that its avoidable factors can be prevented.

MATERIAL & METHODS.

This descriptive study was conducted in labour ward of Nawabshah hospital Sindh Pakistan. All the cases admitted with or developed primary PPH during the period of 5th April 2008 to 8th Dec 2008 were analyzed.

Inclusion criteria were all patients admitted with or developed primary PPH in hospital after normal delivery or cesarean section. Exclusion criteria were patients with history of bleeding disorders and those on heparin or warfarin therapy.

Patients information was recorded on predesigned proforma, which includes sociodemographic data, mode of delivery, spontaneous, induced, delivery conducted by and risk factors for primary PPH. Assessment of general health including anemia, B.P, abdominal, pelvic examination and laboratory investigations was done.

Management includes resuscitation, uterine massage, uterine exploration, use of oxytocic agents, prostaglandins, minor surgical procedures and major surgical interventions were determined. Numbers of transfusions were given.

All data was analyzed by SPSS version 11. Frequency & percentages were calculated to describe the results.

RESULTS.

A total of 121 cases of primary PPH were managed in study duration. Out of 121 patients, 9(7.43 %) were below 20 years of age and 70(57.85 %) belonged to age group of 21-30 years. Regarding parity, 84 (69.42%) were grandmultipara, while 16 (13.22 %) patients were multipara. (Table1). 71(58.67%) belonged to low socioeconomic group while 45 (37.19%) belonged to middle class. (Table 1)

Majority of patients i.e. 71(58.67%) were unbooked, while 50(41.32%) were booked.

99(81.81%) patients were delivered in hospital while 22 (18.18%) patients delivered at home by dai, TBAs. In 17 (14 %) patients labour was induced, 5 (4.13 %) labour was spontaneous, in 30 (24.79 %) patients labour was augmented, while in 69 (57 %) patients underwent cesarean section.

41 (33.88 %) patients delivered spontaneously, in 8 (6.61 %) patients vacuum was used while 3 (2.47 %) patients were delivered by forceps.

Regarding cause of PPH, uterine atony was identified as major cause seen in 98 (80.99%) of patients while genital tract injuries were seen in 23 (19%) of patients (Table 2).

Commonest risk factor of PPH was grandmultiparity seen in 84 (69.42 %) of cases (Table3). Blood pressure was unrecordable in 80(66.11 %), systolic B.P below 90 mmHg was in 89 (73.35%), systolic B.P above 90 mmHg in 32 (26.44%) patients.

Hemoglobin level less than 9gm/dl seen in 37(30.57 %) while above 9 gm/dl seen in 84 (69.42 %) cases. Three (2.47 %) patients went into acute renal failure, while maternal death occurs in 1 (0.82 %) patient (Table 4).

TABLE 1.
SOCIODEMOGRAPHIC DATA OF PATIENTS
(n=121)

VARIABLES	NUMBER	PERCENTAGE
AGE (years)		
<20	9	7.43
21-30	70	57.85
31-40	27	22.31
>41	15	12.39
PARITY		
primi	21	17.35
multipara	16	13.22
grandmultipara	84	69.42
S.E.C		
Poor class	71	58.67
Middle class	45	37.19
Upper class	5	4.13

TABLE 2.
CAUSES OF PRIMARY PPH
(n=121)

Causes of primary PPH	number	percentage
1. Uterine atony	**98**	**80.99**
Augmented labour	30	30.61
Prolong labour	43	43.87
Retained placenta	4	4.08
Couvillier uterus	3	3.06
Placenta previa	2	2
Multiple pregnancy	6	6.12
Polyhydramnios	6	6.12
Macrosomic baby	4	4.08
2. Genital tract		
injuries	**23**	**19.0**
Rupture uterus	3	13.0
Cervical tears	15	65.21
Vaginal tears/		
lacerations	5	21.7

DISCUSSION.

Massive PPH is an emergency life threatening situation and an obstetrician's nightmare [8].

Regarding age of patients, this study showed that frequency was high among women aged 21-30 years was about 57.85 %. It is

comparable to statistics from Nigeria where 71% women who suffered from primary PPH were in age group of 15-29 years. Whereas study by Vivien showed that incidence of PPH was 88% in patients aged 20-29 years. [9]

It is noted in this study that primary PPH occurred more in non booked cases i.e. 58.67% while it was 41.32% among booked cases having regular antenatal visits. This is contrary to results of different studies from developing countries where incidence in non booked cases was only 10%. In our country due to illiteracy and poor domiciliary midwifery services women do not realize significance of antenatal checkup. Preventive measures i.e. identification of cases of PPH during pregnancy, treatment of anemia and hospital delivery of high risk patients were ignored. It was shown in another study that illiterate, poor, unbooked multiparous patients are at high risk of complications of pregnancy and labour [10].

The commonest cause of primary PPH in this study was found to be uterine atony which is seen in 80.99 % of cases. These results are close to an Irish study, where 76% of massive primary PPH was due to uterine atony [11]. While an Indian study showed that 17.5% of PPH related maternal deaths were due to uterine atony. [12]

Grandmultiparity was the main risk factor for uterine atony in this study, which was seen in 69.42% of cases. This is comparable to results of study carried out by Evaldson. He studied 1262 cases. Out of these patients, 17.9% were grandmultipara and rate of primary PPH was high among grandmultipara while it was low among patients of medium or low parity.

Grandmultiparas are considered to be at high risk of PPH but some studies suggest that the risk may not be greater than women of low parity [13].

Other risk factors identified as prolonged labour, augmented labour, placental complications, multiple pregnancy and previous History of PPH are similar to that described by George Condous.[14]

Our study revealed 0.82% of maternal mortality due to PPH, which seems to be quite less than that reported in other studies (Karachi 20%, [15] India 16-19% [12]). Timely treatment can prevent most of the PPH related mortalities. On the other side, morbidities were high showing the severity of hemorrhage.

To avoid maternal morbidity & mortality, it is essential to find out the avoidable factors responsible for the development of PPH and its consequences, which was the main aim of the study. The two vital role players in this context are standard antenatal care [16] & skilled birth attendance [17]. despite the fact that good antenatal care helps to recognize the risk factors for development of PPH and also in time diagnosis of preexisting health problem such as anemia, cardiac disease and hypertension which may render the women more susceptible to dreadful consequences of PPH. It is still being observed in many studies [18] that even with the recognition and proper management of risk factors, PPH cannot be prevented in most of the cases and there is no impact of prenatal screening on the occurrence of this complication. However, properly organized antenatal visits provide an opportunity to educate the women regarding the importance of skilled birth attendance and may be effective tool for better utilization of emergency obstetrical services.

TABLE 3.
RISK FACTORS OF PRIMARY PPH

Risk factors of primary PPH	number	percentage
Grandmultiparity	**84**	**69.42**
APH	5	4.13
Instrumental delivery	11	9
Previous history of PPH	3	2.47
Multiple pregnancy	6	4.95
No risk factors	8	6.61
Obstructed labour	4	3.30

TABLE 4.
COMPLICATIONS DUE TO PPH

Risk factors of primary PPH	number	percentage
Anemia	**118**	**97.52**
Puerperal fever due		
to pelvic infection	8	6.61
Hypovolemic shock	98	80.99
UTI	4	3.30
Acute renal failure	3	2.47
Maternal death	1	0.82
Sheehan syndrome	0	0

CONCLUSION:

Results of our study showed that unbooked, uterine atony, grandmultiparity, augmented and induced labour were commonest risk factors responsible for primary postpartum hemorrhage. PPH can be prevented by unnecessary inductions/ augmentations of labour, identification of high risk patients, reduced parity & better awareness of the importance of antenatal care.

REFERENCES:

1. Khan KS, Wajdyla D, Sayl L, Gulmezoglu AM, Van Look PF. WHO analysis of causes of maternal death: A systematic review. Lancet 2006; 367: 1066- 1074.
2. Michael S. Rogers, Alan M.Z. Chang. Post partum hemorrhage and other problems of the third stage. High Risk pregnancy management options 3rd ed. Elsevier 2006: 1560–65.
3. Obstetrical Haemorrhage In: Cunningham FG, Grant NF, Gilstrapa LC, Hauth JC, Leveno KJ, Wenstrom KD, ediotors.21st William's Obstetrics. Newyork: McGrawhill Professional; 2001.p.612–69.
4. Boumeester FW, Bolte AC, Van Geinun HP. Pharmacological and surgical therapy for primary post partum hemorrhage. Curr Pharma 2005;11:759–73.
5. World Health Organization. Attending to 136 million births, every year: make every mother and child count: The world Report 2005. Geneva Switzerland: WHO, 2005. p. 62–3.
6. Mac-Mullen NJ, Dulski LA, Meagher B. Parental hemorrhage. MCN Am J Matern Child Nurse 2005;30:46–51.
7. Wain Scott MP. Pregnancy Post partum hemorrhage (home page on internet) e Medicine .com Inc (updated 2004 Nov 24; cited 2005 May 10). Available from: http://www.emedicine .com.
8. Haq G, Tayyab S. Control of postpartum and post-abortal haemorrhage with uterine packing. J Pak Med Assoc 2005 Sep; 55(9): 369-71.
9. Vivien. Postpartum hemorrhage in Zimbabwe a risk factor analysis. Am J Peerennial 1992;8:5:6, 441-44.

10. Ashraf T. Maternal mortality: a four year review. JColl Phy Surg Pakistan 1996;6:159-61.
11. Rizvi F, Mackey R, Barrett T, Mckenna P, Geary M.Successful reduction of massive post partum hemorrhage by use of guidelines and staff education. BJOG 2004; 111:495-8.
12. Chahbara S, Sirohi R.Trends in maternal mortality due to hemorrhage: two decades of Indian rural observations Obstet Gynecol 2004; 24:40-3.
13. Abu-Heija AT, Chalabi HE. Great grandmultiparity: is it a risk? J Gynaecol 1998;18:136–8.
14. Condous G, Bourne T. Postpartum uterine atony. Progress in obstetrics and Gynaecology editor John Stud 17: pp 164–74.
15. Karim F, Khan NH. Maternal mortality, reasons & remedies. Med Channel 1998; 4: 19-22.
16. Oyieke JB, Obore S, Kigondu CS. Millennium development goal 5; a review of maternal mortality at Kenyatta National Hospital , Nairobi. East Afr Med J 2006; 83: 4-9.
17. Robinson JJ, Wharrad H.The relationship between attendance at birth and maternal mortality rate and exploration of United Nations data sets including the ratios of physicians and nurses to population, GNP per capita and female literacy. J Adv Nurs 2001; 34:445-55.
18. Tasnim N, Mahmud G, Arif MS. Impact of reduced prenatal visit frequency on obstetric outcome in low risk mothers. J Coll Physicians Surg Pak 2005; 15:26-9.