

ANALYSIS OF HIGH RISK FACTORS AND MATERNAL MORTALITY IN POST PARTUM HAEMORRHAGE

PRABHOT K. KAMAL ● RAMPRASAD ● BATLIWALLA P. R.

SUMMARY

An analysis of 130 cases of post partum haemorrhage, observed over a period of 5 years (1988-93) has been done to identify the risk factors and the management protocol in the current obstetric practice. Low parity (33%), high maternal age (19.6%), Anaemia (29.7%), placenta previa (1.53%), occipito posterior position, prolonged labour, prior PPH and poor obstetrical history were found to be risk factors for development of PPH. The maternal mortality was due to central placenta previa, severe jaundice, uterine inversion and atonic uterus with unnoticed uterine distention. Anticipation of possible disaster and readiness to deal with proper planning may go a long way in reducing maternal mortality.

INTRODUCTION

Since time immemorial, post partum haemorrhage has been an event of great anxiety for accoucher as well as parturient. Post partum haemorrhage ranks high on the list of causes of maternal mortality (St. George and Crandon, 1990).

In industrialised countries it is often due to obstetrical intervention, but in developing countries the leading estab-

lished causes are atonic uterus, retained placenta and genital tract injury (WHO 1990); Risk factors associated with PPH include primiparity, grand multiparity, anaemia, previous third stage complications, pregnancy induced hypertension and multiple pregnancies, alongwith several less common medical conditions (WHO, 1990). Few studies have tried to link these factors to actual occurrence of PPH. These factors can be readily managed if appropriate steps are taken in advance.

The present study was undertaken to

Dept. of Obst. & Gyn. Cama and Alibless Hospital, Bombay.

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estimate the incidence and analyse the risk factors for PPH and maternal mortality and to highlight the appropriate steps to be included in management protocol.

MATERIAL AND METHODS

The study used the current definition of primary PPH as recommended by WHO (1990) "Excess bleeding in 24 hours after birth of baby but with a minimum of 600 ml. rather than 500 ml." The women were also considered as PPH cases if heavy bleeding was noted in their charts in the first post partum day and their haemoglobin was less than 8 g/dL or shock or transfusion was recorded. The study was conducted in Cama and Albless Hospital for Women and Children, Bombay over a span of 5 years (1988-1993).

The data was recorded from the

medical records by the authors. Detailed history and examination findings were noted in order to find the possible cause of PPH. The blood loss was based on measurement from basins and blood loss on linens and sponges.

RESULTS

The common causes of PPH were uterine atony followed by vaginal laceration and cervical tear (Table I). Nearly half the cases were mild requiring minimal medical intervention.

About 29.5% cases were elderly mothers (>35 years) which constituted about 1/4th of total elderly mothers delivered in our hospital during the period of study. Teenage mothers constituted 11.5% which were 1/5 of total teenage delivered and rest of cases were between 19 and 35 years

Table I
Source and amount of haemorrhage

	No. of cases	Percentage
Source of haemorrhage		
Atonic uterus	88	64.7
Vaginal lacerations	5	4.6
Cervical tear	6	5.3
Retained placenta	4	3.07
Ragged membranes	4	3.07
Central placenta previa	2	1.53
Perineal tear	4	3.07
Secondary	17	13
Amount of haemorrhage		
600-799 ml	15	11.54
800-999 ml	64	49.24
1000-1299 ml	30	23.07
1250-1499 ml	21	16.15

of age.

There were 16.5% cases with grand multiparity (5 or more previous deliveries) and 50.78% of medium and 33.08% of low parity (Table II). History of PPH, stillbirth, fetal deaths and poor obstetrical outcome in prior pregnancies was found in the present study.

About 1/3 cases were unbooked for the current pregnancy and 1/3 cases had Hb less than 8 gm/ on first visit to the hospital (Table III). There was prolonged 1st and 2nd stage of labour in 29 and 44 cases respectively. Twelve cases had occipitotransverse/post position. Four patients had to be taken up for manual

removal of placenta and 13 cases of PPH underwent curettage for retained bits of placenta.

There were 6 cases of maternal death in the present study.

One maternal death was due to atonic uterus and one due to central placenta previa. Three cases were referred in stage of shock, where in even urgent energetic measures failed to compensate for the loss and save the patient. One case of PPH subsequently developed consumptive coagulopathy and died.

DISCUSSION

The incidence of PPH is higher in

Table II
Obstetrical history

	No. of cases	Percentage
Parity		
Low (0-1)	43	33.08
Medium (2-4)	66	50.78
High (4)	21	16.14
Single event		
Prior PPH	4	3.07
Prior fetal deaths	23	17.69
Previous stillbirths	9	6.92
Previous neonatal deaths	7	5.38
Combined events		
Poor obstetric outcome (Last pregnancy)	28	21.54
Poor obstetric outcome (Prev. to last pregnancy)	18	13.84
Poor obstetric outcome (Any prior pregnancy)	35	26.92
Abruptio	3	2.30
Precipitate labour	2	1.5
Unspecified	20	15.38

Table III
Present pregnancy and labour

	No. of cases	Percentage
Antenatal factors		
Unbooked cases	42	32.3
Hb less than 8 gm%	38	29.24
Associated medical disorder in pregnancy	4	3.07
Intrapartum factors		
Spontaneous rupture of membranes	37	28.4
Occipito transeverse/post. position labour	12	9.2
Stage I > 10 hrs.	29	22.3
Stage II > 20 min.	44	33.84
Mean birth weight > 3 kg.	48	37

elderly gravida, may be because of age related changes in connective tissue which diminish the ability of cervical, vaginal and perineal muscle to stretch resulting in greater trauma to tissues, prolonged labour and reduced uterine contractility (Turnbull and Anderson, 1978).

We found more chances of PPH in cases of low parity. This elevated risk in association with low parity is compatible with other studies (Hall et al 1985; Gilbert et al 1987; Tsu 1993). There were more cases of PPH in grand multipara but this was not statistically significant, as was also reported by Lennox (1984) and Hall et al (1985). Although, few studies (Reed 1988; WHO 1990) had shown increased risk in grand multiparae, recent studies by Combs et al (1991) and Tsu (1993) found no significant co-relation between grand multiparity and PPH.

Poor obstetrical history has bearing on the occurrence of PPH as observed in our study (Table II). This is consistent with the findings of Lennox (1984) and Hall et al (1985) wherein prior PPH, prolonged labour and prior neonatal death have been incriminated as risk factors for PPH. Estimation of blood loss is difficult and hence, history of prior PPH is many a times missed as the patients may be unaware of excessive bleeding if it is not severe enough to result in visible medical intervention.

As 29.24% of women had Hb less than 8 gm% anaemia may have some association with future development of PPH as also suggested by WHO (1990) and Tsu VD (1993).

Gilbert et al (1987) found four fold risk if the first stage was greater than 12 hrs. and three fold risk of PPH if second stage

was more than 1 hr. In our study, if 1st stage of labour was more than 10 hrs. and 2nd stage more than 20 min. then PPH was found in 29 and 44 cases respectively (Table III). PPH was due to cervical tears, ragged placental membranes, vaginal lacerations, retained placenta or uterine atony. Similar were the observations of Tsu (1993). Saunders et al (1992) had shown increased risk of PPH if 2nd stage of labour was prolonged.

Ergometrine was prophylactically used in 75% cases which might as well affect the result by suppressing PPH due to uterine atony.

Occipitotransverse position was also one of the risk factor accounting for 9.2% cases of PPH.

Analysis of maternal deaths in the study shows atonic uterus and placenta praevia as the main important factors which lead to uncontrolled bleeding and most cases were referred in the stage of shock. Energetic measures could have avoided the risk had the risk factors been known and management instituted in appropriate time. Lennox (1984) observed 4 maternal deaths, all due to PPH and observed 70% of the complications in at risk pregnancies.

The following inferences could be drawn from the study.

- Primipara is not free of the risk, so one should be vigilant even in primigravida.
- Anaemic patients were found to be more prone to develop PPH, so anaemia should be treated.
- Prolonged duration of labour and birth weight > 3 kg. (Table III) poses a significant risk for PPH.
- Patients with bad obstetrical history

should be under supervision.

- Patients with prior PPH and surgical intervention should be under strict vigilance.

Sometimes, inspite of adequate methergin, oxytocin and prostaglandin the uterus doesn't contract. In such cases, bimanual compression is a valuable method of controlling bleeding.

- Uterine packing has been also found to be quite successful in cases of PPH. Proper packing technique is very important. It is done under anaesthesia, starting at fundus till the vagina and giving abdominal pad and binder. The only danger is sepsis.

- Avoiding undue delay in decision making regarding internal iliac artery or uterine artery ligation or cesarean hysterectomy or obstetrical hysterectomy.

- Taking adequate precautions in performing lower segment cesarean section especially in cases of placenta previa. In placenta praevia care should be taken in placing incision, quick in and quick out in case the surgeon happens to go through the placenta and to make sure that haemostasis is achieved before the uterus is closed and to keep the uterine pack ready in case PPH is encountered. The uterine packing can prove to be an excellent conservative measure in these cases.

- In cases of obstetrical injuries, prior cesarean section and patient with medical disorders the patient should be kept under observation to detect occurrence of PPH at the earliest and to institute the therapy in appropriate time.

- Special training of the staff nurses, midwives and the doctors practising in the rural areas.

CONCLUSION

The study confirms several of the risk factors like, low parity, prior PPH, anaemia, prolonged labour and previously undocumented factors like maternal age > 35 years and occipito-posterior presentation and calls into questions grand multiparity.

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