

DOI: <http://dx.doi.org/10.18203/2320-1770.ijrcog20172314>

Original Research Article

Clinical study of post partum haemorrhage from a teaching hospital in Maharashtra, India

Fasiha Tasneem^{1*}, Shyam Sirsam², Vijayalakshmi Shanbhag¹

¹Department of Obstetrics and Gynecology, Dr. Shankarrao Chavan Government Medical College Vishnupuri, Nanded, Maharashtra, India

²Department of Obstetrics and Gynecology, Government Medical College, Akola, Maharashtra, India

Received: 05 March 2017

Accepted: 01 April 2017

***Correspondence:**

Dr. Fasiha Tasneem,

E-mail: fasiha.aziz@yahoo.com

Copyright: © the author(s), publisher and licensee Medip Academy. This is an open-access article distributed under the terms of the Creative Commons Attribution Non-Commercial License, which permits unrestricted non-commercial use, distribution, and reproduction in any medium, provided the original work is properly cited.

ABSTRACT

Background: To study the cases of postpartum haemorrhage, their causes and management in a tertiary care centre.

Methods: A retrospective study of cases of postpartum haemorrhage for a period of 3 yrs was conducted in Dept. of OBGY at a rural tertiary care center and teaching hospital in Maharashtra. The major causes, management modalities, morbidity and mortality associated with it were discussed.

Results: Out of 37515 deliveries over the period of 3 years (2014-2016), there were 1333 cases of PPH out of which accounted for a prevalence of 3.55%. Study showed that 86% of cases were due to atonic PPH, 9.9% due to traumatic PPH, and 0.97% were due to both atonic and traumatic PPH. 2.7% of cases were due to retained placenta, 0.07% were due to bleeding diathesis.

Conclusions: In an era with availability of excellent uterotonics and active management of 3rd stage of labour even today postpartum haemorrhage stands first as the cause of maternal morbidity and mortality. Even though with excellent medical and surgical interventions, maternal mortality due to PPH has been significantly reduced, the field still needs extensive research and new modalities to prevent and manage post-partum haemorrhage.

Keywords: B lynch, Post-partum haemorrhage, Uterotonics

INTRODUCTION

Post-partum haemorrhage is the leading cause of maternal morbidity and mortality and accounts for one quarter of cases of maternal mortality worldwide.¹ It is among the manageable causes of maternal mortality that if managed properly can prevent most of the cases of maternal deaths. According to WHO, obstetric haemorrhage causes 127000 deaths annually worldwide and is the leading cause of maternal mortality.² Death due to pregnancy is still an important cause of premature death of women worldwide. Post-partum haemorrhage occurs unpredictably and is an equal opportunistic killer.³ PPH is a frequent complication of delivery and its incidence is commonly reported as 2-4% after vaginal

delivery and 6% after caesarean section with uterine atony being the most common cause in 50% of the cases.⁴

Post-partum haemorrhage is defined as blood loss from the genital tract, exceeding 500ml within 24hrs of vaginal delivery and 1000ml during caesarean section.⁵ It is also now a day defined as any blood loss that has a potential to produce or produces haemodynamic instability. Massive obstetric hemorrhage is a major cause of maternal mortality and morbidity worldwide. It is defined (among others) as the loss of >2,500ml of blood, and is associated to a need for admission to critical care and/or hysterectomy.⁶ It is not only a life-threatening situation but also an obstetrician's nightmare.⁷ Anticipation of risk factors and active management of the third stage of labor, including the prophylactic application of uterotonics, are

considered to be among the keypoints in the prevention of PPH.⁸

Many national and international studies show that uterine atony is the commonest cause of PPH followed by trauma to genital tract, adherent placenta, uterine angle extension and retained placenta.⁹ Generally, PPH requires early recognition of its cause, immediate control of the bleeding source by medical, mechanical, invasive-non-surgical and surgical procedures, rapid stabilization of the mother's condition, and a multidisciplinary approach.⁸ Second-line treatment of PPH remains challenging, since there is a lack of univocal recommendations from current guidelines and sufficient data from randomized controlled trials.⁸

Even in tertiary care centres as us with availability of excellent uterotonics and active management of third stage of labour still PPH dominates as the cause of maternal mortality. Our basic aim was to study the major causes of PPH in our hospital and its management.

METHODS

A retrospective study was conducted for a period of three years from Jan 2014 to Dec 2016 at Dr. Shankarrao Chavan Government Medical College Vishnupuri, Nanded, a tertiary care centre in Marathwada region of Maharashtra. It is situated in the banks of Godavari river and has availability of all essential medications and excellent surgical hands and operation theaters.

In this study, we collected data of all the deliveries (37515) primarily conducted in our centre and the cases of PPH referred from peripheries. The study included all the cases of normal vaginal delivery, assisted vaginal deliveries and Caesarean section.

The cases with blood loss after normal delivery >500ml or after Caesarean section >1000ml managed by uterotonics alone or requiring <2 blood transfusions were taken as cases of uncomplicated PPH.

The cases requiring >2 blood transfusions with uterotonics and the cases requiring surgical intervention in the form of B Lynch or internal iliac artery ligation or even obstetric hysterectomy were taken as cases of complicated PPH.

RESULTS

The retrospective study for the period of three years showed that out of 37515 deliveries conducted in the study hospital there were 1149 cases of PPH. There were 184 cases of PPH referred from the peripheries. Totally there were 1333 (3.55%) cases of PPH reported in three years. The incidence of PPH in our study was found to be 3.5%. A similar study conducted in south India showed an incidence of 5.1% and 3.1% respectively.^{7,10} While it

varies between 0.5-9.5% in different studies done in Pakistan.⁹⁻¹²

Amongst these majority of the cases were due to atonicity i.e. 1147 cases were of atonic PPH accounting to 86% of the total cases. Most important and major finding in our study was that the most common cause of Post-partum hemorrhage was uterine atony, which is loss of tone in the uterine musculature. Normally, contraction of the uterine muscle compresses the vessels and reduces flow. This increases the likelihood of coagulation and prevents bleeds. Thus, lack of uterine muscle contraction can cause an acute hemorrhage. These findings were evident by the studies conducted in America and Pakistan.^{9,10,13,14} (Table 1).

Table 1: Prevalence of PPH.

Type of PPH		Number (1333)	Percentage (100%)
Atonic PPH	Uncomplicated	1080	81.02
	Complicated	67	4.87
Inversion of uterus		2	0.15
Traumatic PPH	Uncomplicated	60	4.50
	Complicated	72	5.40
Mixed (Atonic+ Traumatic)		13	0.97
Retained placenta	Uncomplicated	22	1.65
	Complicated	14	1.05
Infection		2	0.15
Bleeding diathesis		1	0.07
Total		1333	100

Among these majority of the cases were treated with uterotonics alone i.e. 1080 cases and were taken as cases of uncomplicated PPH.

Table 2: Management of PPH.

Type of intervention	Number (total 1333)	Percentage (100%)
Uterotonics +<2 blood transfusions	1080	81.02%
Uterotonics + >2 blood transfusions	58	4.35%
Perineal tear repair	60	4.50%
Surgical intervention	135	10.12%
Total	1333	100%

So, in our study we found that 81% of the cases of atonic PPH were treated with uterotonics with or without less than two blood transfusions. Whereas some cases of atonic PPH i.e. 67 cases required >2 blood transfusions or

surgical intervention and were taken as cases of complicated PPH. These complicated atonic PPH cases accounted for 4.87% of the cases. There were 2 cases of inversion accounting for 0.15% cases (Table 2).

DISCUSSION

Out of these cases 18 cases required B Lynch. Among these in 6 cases bleeding was controlled with B Lynch alone whereas rest of the 12 cases required further intervention. So, among the cases of complicated atonic PPH, in 8.9% of the cases bleeding was controlled with B lynch alone. Uterine compression suturing (UCS) was recommended as the first-line measure preventing hysterectomy in patients with uterine atony who respond to bimanual compression.^{8,15,16} In a recent prospective population-based study, the estimated rate of use of UCS was 18 cases per 100,000 deliveries (95% CI; 15-20 per 100,000); UCS was mostly attempted in women delivering by caesarean section and in only 8.5% of patients delivering vaginally.^{8,17} Results of our study are also consistent with the study conducted by Shaikh et al in Hyderabad where 8% of cases were treated with B Lynch.⁷ In 29 cases of complicated atonic PPH internal iliac artery ligation was carried out. Internal iliac artery ligation (IIAL) has been advocated as an effective measure of controlling intractable PPH and preventing maternal death.¹⁸ IIAL does not result in complete blockage of blood supply to the female pelvic organs but contributes to a significant decrease.¹⁹ The technique has been used in patients with uterine atony and abnormal placentation.²⁰ Among these 29 cases in 13 cases the bleeding was controlled with internal iliac artery ligation alone without any other surgical intervention. i.e. 19.40% of the cases of complicated atonic PPH were managed by internal iliac artery ligation alone with blood transfusions. Joshi et al.¹⁸ pointed out that IIAL not only contributes to the prevention of hysterectomy but also in cases where hysterectomy cannot be prevented, it facilitates hysterectomy as in case of uterine trauma. The overall success rate of IIAL in our study was found to be 44.82%. Overall success rates reported in other studies varies from 42 to 93%.²¹⁻²³

One of the most difficult decisions in obstetrics, which should be made by an experienced obstetrician in close cooperation with an experienced anesthetist, is to determine if and when conservative fertility preserving approaches make no longer sense and immediate peripartum hysterectomy (pH) is required to save lives.²⁴ 15 cases of complicated atonic PPH required obstetric hysterectomy as a last resort to control bleeding. It accounted for 22.33% of cases of complicated atonic PPH. Our study showed that in our hospital, of the cases of atonic PPH 94.15% of the cases were managed by uterotonics alone, 2.87% cases required blood transfusions along with uterotonics, 0.52% of cases required B Lynch, in 1.13% of cases internal iliac artery ligation was done and 1.30% of cases required obstetric hysterectomy. Out of 1333 cases of PPH, 132 cases were

due to trauma to the genital tract. It accounted for 9.9% of cases. Some cases of perineal tear were treated in labour room under local anaesthetics and it accounted for 60 cases. i.e. 45% of the cases were managed in labour room. 72 cases of traumatic PPH required vaginal or cervical exploration and in those cases surgical repair was done in OT under short GA. This accounted for 54.96% of the cases of traumatic PPH (Table 3).

Table 3: Surgical intervention in PPH.

Operative interventions	Number (total-135)	Percentage (100%)
B Lynch	06	4.44%
B Lynch + internal iliac A ligation	07	5.18%
Internal iliac A ligation	13	9.62%
Internal iliac A ligation+ obstetric hysterectomy	04	2.96%
Obstetric hysterectomy	06	4.44%
B Lynch+ internal iliac A ligation + Obstetric hysterectomy	05	3.70%
Cervical exploration with repair	72	53.33%
Manual removal of placenta	14	10.37%
Uterine packing or ballon catheter(tamponade)	06	4.44%
Reposition of uterus by O'Sullivan's method for inversion of uterus	02	1.48%

In our study, we found that 13 cases had both atonic and traumatic components. This accounted for 0.9% of the total cases of PPH. These cases needed prolonged hospitalization and caused serious morbidity in the patients. It was found that 2.70% of the cases i.e. 36 cases were due to retained placenta. Out of these 14 cases required manual removal of placenta in OT i.e. 38.88% of the cases of retained placenta required intervention in OT whereas rest of the cases were treated in labour room with uterotonics and the placenta was removed manually in labour room. The patients with bleeding diathesis like Idiopathic Thrombocytopenic Purpura were treated with extra caution and rarely ended up with PPH. 0.07% of the cases of PPH was due to bleeding diathesis.

CONCLUSION

Post-partum haemorrhage is the nice way of saying that we let our women bleed to death. In this era with availability of excellent uterotonics and active management of third stage of labour even today PPH stands first as the cause of maternal mortality and morbidity. This study highlights the existing variable practices for management of PPH. Haemorrhage associated mortality can be prevented by critical judgement and early intervention. So, in order to tackle this deadly condition, it is essential to assess the risk

factors and blood loss during delivery. It is recommended to strictly follow the authorized management plan in order to prevent the patient with complications and death. Even though with excellent medical and surgical intervention maternal mortality due to PPH has been significantly reduced, the field still needs extensive research and proper protocols to manage PPH.

Funding: No funding sources

Conflict of interest: None declared

Ethical approval: The study was approved by the Institutional Ethics Committee

REFERENCES

1. Devi KP, Singh LR, Singh LB, Singh MR and Singh NN. Postpartum haemorrhage and maternal deaths in north east India. *J Obstet Gynaecol.* 2015;5:635-8.
2. WHO, A newsletter of world wide activity. Making Pregnancy Safer. 2007;4:1-8.
3. Edhi. Post partum hemorrhage: causes and management. *BMC Research Notes.* 2013;6:236.
4. Amy JJ. Severe Post Partum Haemorrhage: A Rational Approach, *The National Medic J Ind.* 1998;11:86-8.
5. Muhammad S, Chandraharan E. Chapter 23 postpartum haemorrhage, *Aria's practice guide to high risk pregnancy and delivery, a south Asian perspective, Elsevier publication, 4th ed;*389-98.
6. Guasch E, Gilsanz F. Massive obstetric hemorrhage: Current approach to management. *Med Intensiva.* 2016;40(5):298-310.
7. Shaikh S, Bano N, Talpur S, Balouch R. "Postpartum Hemorrhage: An Experience At Tertiary Care Hospital, Hyderabad" *MC.* 2013;19(1):44-7.
8. Rath W, Hackethal A, Bohlmann MK. Second-line treatment of postpartum haemorrhage (PPH) *Arch Gynecol Obstet.* 2012;286:549-61.
9. Sheikh L, Najmi N, Khalid U, Saleem T. Evaluation of compliance and outcomes of a management protocol for massive postpartum hemorrhage at a tertiary care hospital in Pakistan. *BMC Pregnancy Childbirth.* 2011;11(1):28,1-7.
10. Sheikh L, Zuberi NF, Riaz R, Rizvi JH. Massive primary postpartum haemorrhage: setting up standards of care. *J-Pakistan Med Assoc.* 2006, 56(1):26.
11. Ishaq T, Khattak I, Amin S. Postpartum Haemorrhage A Preventable Complication Of Labour. *Professional Med J.* 2011;18 (4):604-10.
12. Abro ST, Kashif F, Shaikh S, Baloch R. Postpartum Hemorrhage-a Major Killer of Mothers. *Medical Channel.* 2009;15(4):180-3.
13. Edhi MM, Aslam HM, Naqvi Z, Hashmi H. Post partum hemorrhage: causes and management. *BMC Res Notes.* 2013;6:236.
14. Khan U and El-Refaey H. Pathophysiology of Postpartum Hemorrhage and Third Stage of Labor, *A Comprehensive Text book of Postpartum Hemorrhage, glown, 2nd Edition;*94-100.
15. Wise A, Clark V. Strategies to manage major obstetric haemorrhage. *Curr Opin Anaesthesiol.* 2008;21:281-7.
16. Akoury H, Sherman C. Uterine wall partial thickness necrosis following combined B-Lynch and Cho square sutures for the treatment of primary postpartum hemorrhage. *J Obstet Gynaecol Can.* 2008;30:421-4.
17. Kayem G, Kurinczuk JJ, Alfirevic Z, Spark P, Brocklehurst P. On behalf of the UK Obstetric Surveillance System (UKOSS). Uterine compression sutures for the management of severe postpartum hemorrhage. *Obstet Gynecol.* 2011;117:14-20.
18. Joshi VM, Otiv SR, Majumder R, Nikam YA, Shrivastava M. Internal iliac artery ligation for arresting postpartum haemorrhage. *BJOG.* 2007;114:356-61.
19. Gungor T, Simsek A, Oezdemir AO, Pektas M, Danisman N, Mollamahmutoglu L. Surgical treatment of intractable postpartum hemorrhage and changing trends in modern obstetric perspective. *Arch Gynecol Obstet.* 2009;280:351-5.
20. Sziller I, Hupucz P, Papp Z. Hypogastric artery ligation for severe hemorrhage in obstetric patients. *J Perinat Med.* 2007;35(3):187-92.
21. Doumouchsis SK, Papageorghiou AT, Arulkumaran S. Systematic review of conservative management of postpartum hemorrhage: what to do when medical treatment fails. *Obstet Gynecol Surv.* 2007;62:540-7.
22. Fargeaudou Y, Morel O, Soyer P, Gayat E, Sirol M, Boudiaf M, et al. Persistent postpartum haemorrhage after failed arterial ligation: value of pelvic embolisation. *Eur Radiol.* 2010;20:1777-85.
23. Gungor T, Simsek A, Oezdemir AO, Pektas M, Danisman N, Mollamahmutoglu L. Surgical treatment of intractable postpartum hemorrhage and changing trends in modern obstetric perspective. *Arch Gynecol Obstet.* 2009;280:351-5.
24. Chandrahan E, Arulkumaran S. Surgical aspects of postpartum haemorrhage. *Best Pract Res Clin Obstet Gynaecol.* 2008;22:1089-02.

Cite this article as: Tasneem F, Sirsam S, Shanbhag V. Clinical study of post partum haemorrhage from a teaching hospital in Maharashtra, India. *Int J Reprod Contracept Obstet Gynecol* 2017;6:2366-9.