



Mainspring of Deaths in Women

PPH

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Abstract: “Postpartum hemorrhage” (PPH) is one the most common major cause of maternal mortalities throughout the world in obstetrics. It is the loss of blood i.e. 500ml resulting from vaginal delivery and 1000ml from Caesarian delivery after 24 hours of postpartum. PPH is divided into two parts that is “primary” & “secondary”. Primary postpartum happens in between 24 hours and secondary postpartum happens more than 24 hours up to 14 weeks of postpartum. Recent publications have shown a great incidence in increase of postpartum over years .Prenatal identification of women who are at risk, early assessment of blood loss and effective management of postpartum hemorrhage can save many lives of women.

Key Words – Postpartum Hemorrhage, Maternal Morbidity. Maternal Mortality.

I. INTRODUCTION

Postpartum haemorrhage (PPH) is a leading cause of maternal mortality and morbidity worldwide and 75-90% of these haemorrhage results from uterine atony. Delayed and substandard obstetrics care can kill a woman within hours of Major Obstetric Haemorrhage (MOH). Prenatal identification of at risk women, prompt assessment of blood loss, effective management and involvement of multidisciplinary teams is of utmost importance to save the lives of these women. However, even with the best prenatal care, PPH occurs, it can occur without any risk factors. The first step in management is achieving haemodynamic stability, second being arrest of bleeding, both are done simultaneously. Cases of refractory PPH is managed by postpartum hysterectomy which results in complete inability in hosting a future pregnancy, a psychological impact and risk of intra operative surgical morbidities. This review discusses the current evidence based management of PPH, existing controversies in transfusion of blood and blood products and newer advances in this field. It was conducted by searching the English language medical literature using Medline (1994-2015). The current scenario in developing countries mandates research on newer and practicable strategies to tackle PPH which can be implemented effectively and have an upper edge over the existing practices in the management of PPH.^[1]

Post partum hemorrhage is defined as blood loss of 500 ml or above. It is the most common cause of pre-mature mortality of women world wide. Our objective was to evaluate the most common etiology and method of management of Post partum Hemorrhage in a tertiary care hospital of Karachi.It was a cross sectional study conducted at Liaquat National Hospital Karachi, during the period of July 2011 to May 2012. Review include mode of delivery, possible cause of postpartum hemorrhage, supportive, medical and surgical interventions. All the women admitted with post partum hemorrhage or develop PPH in hospital after delivery were included in our study. Bleeding disorder and use of anticoagulants were set as exclusion criteria. Diagnosis was made on the basis of blood loss assessment which was made via subjective and objective evaluation. During the targeted months, out of total 1493 deliveries ($26/1493 = 1.741\%$) 26 cases of post partum hemorrhage were reported with a mean age of 26.153 ± 7.37 . No deaths were reported and all cases were referred and unbooked cases. All Patients were conscious, tachycardiac and hypotensive. Most of the women were suffering from hemorrhage during or after the birth of their 1st child. Primary post partum hemorrhage emerge as the most common type of post partum hemorrhage and uterine atony was detected as the most common cause of primary post partum hemorrhage. Retained products of conception was the most common cause of secondary post partum hemorrhage and hysterectomy was found to be the most frequent method of management of post partum hemorrhage This study highlights the existing variable practices for the management of postpartum hemorrhage. Hemorrhage associated morbidity and mortality can be prevented by critical judgment, early referral and resuscitation by attendants. Introduction of an evidence-based management model can potentially reduce the practice variability and improve the quality of care.^[2]

A limited body of evidence addresses interventions for managing PPH. The most effective treatments and the order in which to use treatments remain unclear. Diagnosis of PPH is subjective, which makes it difficult to compare the severity of PPH and determine the comparability of participants within and across studies. The trajectory of care, rationale for choice of intervention, and component of care ultimately responsible for controlling bleeding are also frequently unclear because of the need for rapid intervention in an emergency situation. Few studies included in this review addressed pharmacologic or medical management, including transfusion for supportive management of ongoing PPH, and the evidence reviewed is insufficient to comment on effects of such interventions. The success of uterine-sparing techniques, such as uterine balloon tamponade, embolization, uterine compression sutures, and uterine and other pelvic artery ligation, in controlling bleeding without the need for additional procedures or surgeries ranged from 36 to 98 percent. However, these data come from a limited number of studies with a small number of participants. Harms of interventions are diverse and not well understood. Some studies reported an association between rFVIIa and thromboembolic events, but sample sizes were small. Some studies with longer term followup reported adverse effects on future fertility and menstrual changes in women undergoing embolization. Need for reoperation was reported after hysterectomy. Evidence is insufficient to assess the effects of interventions for anemia after PPH is stabilized, and systems-level interventions showed little benefit in reducing the incidence or severity of PPH or the need for transfusion or hysterectomy. Further research is needed across all interventions for PPH management, especially pharmacologic interventions, which are the most frequently used first-line therapies.^[3]

Postpartum hemorrhage (PPH) is a major cause of maternal mortality and morbidity worldwide. Several recent publications have noted an increasing trend in incidence over time. The international PPH collaboration was convened to explore the observed trends and to set out actions to address the factors identified. We reviewed available data sources on the incidence of PPH over time in Australia, Belgium, Canada, France, the United Kingdom and the USA. Where information was available, the incidence of PPH was stratified by cause. We observed an increasing trend in PPH, using heterogeneous definitions, in Australia, Canada, the UK and the USA. The observed increase in PPH in Australia, Canada and the USA was limited solely to immediate/atonic PPH. We noted increasing rates of severe adverse outcomes due to hemorrhage in Australia, Canada, the UK and the USA. Key Recommendations 1. Future revisions of the International Classification of Diseases should include separate codes for atonic PPH and PPH immediately following childbirth that is due to other causes. Also, additional codes are required for placenta accreta/percreta/increta. 2. Definitions of PPH should be unified; further research is required to investigate how definitions are applied in practice to the coding of data. 3. Additional improvement in the collection of data concerning PPH is required, specifically including a measure of severity. 4. Further research is required to determine whether an increased rate of reported PPH is also observed in other countries, and to further investigate potential risk factors including increased duration of labor, obesity and changes in second and third stage management practice. 5. Training should be provided to all staff involved in maternity care concerning assessment of blood loss and the monitoring of women after childbirth. This is key to reducing the severity of PPH and preventing any adverse outcomes. 6. Clinicians should be more vigilant given the possibility that the frequency and severity of PPH has in fact increased. This applies particularly to small hospitals with relatively few deliveries where management protocols may not be defined adequately and drugs or equipment may not be on hand to deal with unexpected severe PPH.^[4]

Postpartum hemorrhage is one of the rare occasions when a general or acute care surgeon may be emergently called to labor and delivery, a situation in which time is limited and the stakes high. Unfortunately, there is generally a paucity of exposure and information available to surgeons regarding this topic: obstetric training is rarely found in contemporary surgical residency curricula and is omitted nearly completely from general and acute care surgery literature and continuing medical education. The purpose of this manuscript is to serve as a topic specific review for surgeons and to present a surgeon oriented management algorithm. Medline and Ovid databases were utilized in a comprehensive literature review regarding the management of postpartum hemorrhage and a management algorithm for surgeons developed based upon a collaborative panel of general, acute care, trauma and obstetrical surgeons' review of the literature and expert opinion. A stepwise approach for surgeons of the medical and surgical interventions utilized to manage and treat postpartum hemorrhage is presented and organized into a basic algorithm. The manuscript should promote and facilitate a more educated, systematic and effective surgeon response and participation in the management of postpartum hemorrhage.^[5]

A massive transfusion protocol may offer major advantages for management of postpartum hemorrhage. The etiology of postpartum hemorrhage, transfusion outcomes and laboratory indices in obstetric cases requiring the massive transfusion protocol were retrospectively evaluated in a tertiary obstetric center. We reviewed medical records of obstetric patients requiring the massive transfusion protocol over a 31-month period. Demographic, obstetric, transfusion, laboratory data and adverse maternal outcomes were abstracted. Massive transfusion protocol activation occurred in 31 patients (0.26% of deliveries): 19 patients (61%) had cesarean delivery, 10 patients (32%) had vaginal delivery, and 2 patients (7%) had dilation and evacuation. Twenty-six patients (84%) were transfused with blood products from the massive transfusion protocol. The protocol was activated within 2h of delivery for 17 patients (58%). Median [IQR] total estimated blood loss value was 2842 [800-8000]mL. Median [IQR] number of units of red blood cells, plasma and platelets from the massive transfusion protocol were: 3 [1.75-7], 3 [1.5-5.5], and 1 [0-2.5] units, respectively. Mean (SD) post-resuscitation hematologic indices were: hemoglobin 10.3 (2.4)g/dL, platelet count 126 (44)×10⁹/L, and fibrinogen 325 (125)mg/dL. The incidence of intensive care admission and peripartum hysterectomy was 61% and 19%, respectively. Our massive transfusion protocol provides early access to red blood cells, plasma and platelets for patients experiencing unanticipated or severe postpartum hemorrhage. Favorable hematologic indices were observed post resuscitation. Future outcomes-based studies are needed to compare massive transfusion protocol and non-protocol based transfusion strategies for the management of hemorrhage.^[6]

Postpartum hemorrhage (PPH) remains a significant contributor to maternal morbidity and mortality throughout the world. The majority of research on this topic has focused on efforts to prevent PPH. Sound data exist that active management of the third stage of labor can reduce the occurrence of PPH. Although there remains debate regarding the optimal protocol for active management, it appears at this time that oxytocin is the preferable uterotonic to use. Misoprostol may be a reasonable option

where parenteral administration of an uterotonic is not feasible. There is little evidence to guide treatment decisions should PPH occur.^[7]

While inferior to oxytocin injection in both efficacy and safety, orally administered misoprostol has been included in the World Health Organization Model List of Essential Medicines for use in the prevention of postpartum haemorrhage (PPH) in low-resource settings. This study evaluates the costs and health outcomes of use of oral misoprostol to prevent PPH in settings where injectable uterotonics are not available. A cost-consequences analysis was conducted from the international health system perspective, using data from a recent Cochrane systematic review and WHO's Mother-Baby Package Costing Spreadsheet in a hypothetical cohort of 1000 births in a mixed hospital (40% births)/community setting (60% births). Costs were estimated based on 2012 US dollars. Using oxytocin in the hospital setting and misoprostol in the community setting in a cohort of 1000 births, instead of oxytocin (hospital setting) and no treatment (community setting), 22 cases of PPH could be prevented. Six fewer women would require additional uterotonics and four fewer women a blood transfusion. An additional 130 women would experience shivering and an extra 42 women fever. Oxytocin/misoprostol was found to be cost saving (US\$320) compared to oxytocin/no treatment. If misoprostol is used in both the hospital and community setting compared with no treatment (i.e. oxytocin not available in the hospital setting), 37 cases of PPH could be prevented; ten fewer women would require additional uterotonics; and six fewer women a blood transfusion. An additional 217 women would experience shivering and 70 fever. The cost savings would be US\$533. Sensitivity analyses indicate that the results are sensitive to the incidence of PPH-related outcomes, drug costs and the proportion of hospital births. Our findings confirm that, even though misoprostol is not the optimum choice in the prevention of PPH, misoprostol could be an effective and cost-saving choice where oxytocin is not or cannot be used due to a lack of skilled birth attendants, inadequate transport and storage facilities or where a quality assured oxytocin product is not available. These benefits need to be weighed against the large number of additional side effects such as shivering and fever, which have been described as tolerable and of short duration.^[8]

Postpartum haemorrhage (PPH) is one of the most threatening and unpredictable emergencies in obstetrics. Worldwide it is a leading cause of maternal death. The outcome significantly depends on competent management by a skilled interdisciplinary team. For health professionals, PPH might cause stress, anxiety and inability to act adequately. It is estimated that 70-80% of maternal deaths related to PPH are due to preventable management errors. This leads to the conclusion that health professionals need training in order to competently manage a PPH emergency. The aim of this study is to summarise the evidence on the effectiveness of different training methods to support the professional and competent management of PPH. A systematic literature review was conducted. The search was performed on the data bases Cochrane Library, Embase, Medline, CINAHL complete and MIDIRS and was supplemented by hand searching. The selected studies were analysed and checked for content and quality based on specific criteria. The 11 included studies support the effectiveness of simulation training. The subjective indicators «self-confidence», «knowledge», «competence» «stress levels», «team work» and «communication» could be improved, as well as the objective indicators «team performance» and «knowledge». 3 studies could establish a sustainable effect of the simulation training 6 weeks, 3 months and 6 months, respectively, after the training session. However, in all included studies this effect was not tested in a clinical context. Therefore the clinical effectiveness of simulation-based training on clinical outcome is unknown. 2 studies indicate a benefit of simulation-based training versus the lecture and discussion-based method. In addition, no evidence exists as to whether the effectiveness of simulation-based training depends on high fidelity circumstances such as the location at which training is taking place (simulation centre vs. local obstetrics room) or whether it could be influenced by teamwork training. It is recommended to offer an interdisciplinary training on a regular basis even after accomplished graduation training of professionals in the field of obstetrics. No recommendations can be made concerning the type and frequency of training. There is an urgent need for more evidence related to the effectiveness of different training methods for adequate PPH management.^[9]

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