

Short Communication

Suggested Interdisciplinary Approach for Managing Postpartum Haemorrhage Caused by Uterine Atony-A Call for Updated Guidelines

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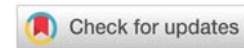
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Abstract

Postpartum Hemorrhage (PPH) is a significant cause of maternal morbidity and mortality, often exacerbated by inadequate adherence to established guidelines. This article examines the critical role of uterine atony and explores the impact of factors such as inaccurate blood loss estimation and hematological complications. It critiques the existing clinical guidelines for insufficiently addressing the role of hematologists and proposes the integration of early assessment techniques, including viscoelastic hemostatic assays and targeted fibrinogen replacement, to more effectively manage coagulopathy. The article also highlights recent advancements, such as the Alma device, and advocates for a multidisciplinary approach that includes both obstetricians and hematologists to enhance PPH management and improve patient outcomes.

Introduction

Postpartum Hemorrhage (PPH) blood loss ≥ 500 ml is a leading cause of maternal morbidity and mortality in obstetrics and complicates up to 10% of all deliveries. The incidence of PPH is rising due to an incomplete implementation of guidelines [1]. Massive bleeding also has significant hematological consequences. It often leads to anemia and can result in complications like disseminated vascular coagulopathy which is often diagnosed when uncontrollable bleeding or multi-organ failure exists [2].

The primary cause is uterine atony, but can also result from birth canal injuries or retained placenta. Physiologically, the myometrium contracts during and after the delivery of the placenta to halt bleeding. When this contraction does not occur, open blood vessels in the uterine cavity continue to bleed.

PPH can arise from various reasons such as prolonged labor, uterine over-distention (e.g., macrosomia or twins), infections, placental abnormalities, or bladder distention.

However, the predominant issue remains the lack of uterine contraction after the delivery, which is essential for stopping the bleeding. Traditional definitions of PPH, based on the blood loss amount are challenging to monitor and can be misleading, potentially leading to delays in the treatment due to underestimation of the amount. There are inaccuracies in blood loss estimation, and at the same time, the amount of blood loss does not necessarily reflect the severity of bleeding.

Management

The current clinical guidelines, while similar across various associations, generally recommend initial measures which are: Manual uterine massage, followed by IV oxytocin, IM ergometrine, or prostaglandins.

Should these measurements fail, uterine balloon tamponade, such as the Bakri balloon is suggested [3]. If the bleeding continues, uterine artery embolization [4] or other surgical interventions, including uterine compression sutures [5], uterine and hypogastric artery ligation [6], or even hysterectomy.

These guidelines often do not mention the role of the hematologist [7]. The hematologists are called to the delivery room and consulted usually after such complications have developed, which many times may delay the needed critical interventions.

However, in a recent publication by haematologists, the early assessment of PPH was addressed. It is essential to allow early characterization of coagulopathy, estimate bleeding severity, and improve outcomes. During PPH fibrinogen levels decrease before other coagulation factors, and hypofibrinogenemia is an early marker of PPH severity. Viscoelastic (VET) hemostatic assays provide an assessment of hemostatic disorders, and low fibrinogen, and enable VET-guided fibrinogen replacement [8].

The importance of addressing hematological issues in PPH is also highlighted in anesthesiology literature, which stresses the need for timely recognition of abnormal coagulation and simultaneous consideration of hemostatic support strategies. Coagulopathies do exacerbate massive hemorrhage, making it essential to administer tranexamic acid for abnormal bleeding and use fibrinogen concentrate rather than fresh frozen plasma to manage fibrinogen deficiency [9].

The existing guidelines were established when the Balloon tamponades were already in use. These balloons are inserted into the uterus and inflated with saline to apply pressure on the uterine walls in order to mechanically stop bleeding. However, all the guidelines were published before the introduction of new intrauterine vacuum-induced hemorrhage control devices, such as the Alma device.

The Alma device contracts the uterus using low negative pressure, which mimics the physiological process of stopping the bleeding after birth. The adoption of such devices could revolutionize PPH management by preventing bleeding more effectively through natural uterine contractions, and potentially even reducing the need for further medical interventions.

A comprehensive approach to PPH should involve evaluating vital signs, clinical symptoms, coagulation status, and hemodynamic changes. However, even the FIGO guidelines do not include the hematologists in the primary management team, as they are crucial and needed for assessing possible hematological complications such as coagulopathy, particularly since fibrinogen levels often decrease before other coagulation factors. Low fibrinogen levels are a known marker of bleeding severity. Tools like viscoelastic haemostatic assays enable rapid assessment of hemostatic disorders and can guide the targeted fibrinogen replacement.

An interdisciplinary approach is strongly advocated, emphasizing the collaboration between obstetricians and hematologists. In severe PPH cases, hematologists should be involved already early in the process in order to assess possible hemostatic disorders, monitor fibrinogen levels, and assist the team during the treatment. The hematologist can also provide crucial support if complications like disseminated intravascular coagulopathy arise.

We call for updated PPH guidelines that incorporate emerging uterine contraction devices and advocate for a team structure that includes both obstetricians and hematologists in order to improve the parturient outcome.

Conclusion

Postpartum Hemorrhage (PPH) remains a critical challenge in obstetric care, contributing to maternal morbidity and mortality. The rising incidence of PPH underscores the need for more effective management strategies, particularly given the limitations of traditional blood loss estimation and the underutilization of hematological expertise. The current clinical guidelines overlook the integration of hematologists who can play a crucial role in addressing coagulopathy and its complications.

The introduction of new technologies, such as the Alma device, offers promising advancements in mimicking physiological uterine contractions to control bleeding more effectively. To enhance PPH management, it is essential to adopt a comprehensive and interdisciplinary approach that includes both obstetricians and hematologists.

The revision of PPH guidelines to incorporate these emerging devices and strategies is advocated, ensuring a collaborative approach that integrates both obstetric and hematological expertise. By doing so, we can advance the management of PPH, optimize patient care, and ultimately reduce the incidence of maternal morbidity and mortality.

References

- Bláha J, Bartošová T. Epidemiology and definition of PPH worldwide. *Best Pract Res Clin Anaesthesiol.* 2022;36(3-4):325-339. Available from: <https://doi.org/10.1016/j.bpa.2022.11.001>
- Erez O, Othman M, Rabinovich A, Leron E, Gotsch F, Thachil J. DIC in pregnancy - Pathophysiology, clinical characteristics, diagnostic scores, and treatments. *J Blood Med.* 2022;13:21-44. Available from: <https://doi.org/10.2147/JBM.S273047>
- Wright CE, Chauhan SP, Abuhamad AZ, Bakri balloon in the management of postpartum hemorrhage: a review. *Am J Perinatol.* 2014;31(11):957-964. Available from: <https://doi.org/10.1055/s-0034-1372422>
- Brown M, Hong M Jr, Lindquist J. Uterine artery embolization for primary postpartum hemorrhage. *Tech Vasc Interv Radiol.* 2021;24(1):100727. Available from: <https://doi.org/10.1016/j.tvir.2021.100727>
- Allam MS, B-Lynch C. The B-Lynch and other uterine compression suture techniques. *Int J Gynaecol Obstet.* 2005;89(3):236-241. Available from: <https://doi.org/10.1016/j.ijgo.2005.02.014>
- İçen MS, Findik FM, Akin Evsen G, Ağaçayak E, Yaman Tunç S, Evsen MS, et al. Hypogastric artery ligation in postpartum hemorrhage: a ten-year experience at a tertiary care center. *J Obstet Gynaecol.* 2021;41(4):536-540. Available from: <https://doi.org/10.1080/01443615.2020.1755623>
- FIGO PPH Technical Working Group; Begum F, Beyeza J, Burke T, Evans C, Hanson C, Lalonde A, et al. FIGO and the International Confederation of Midwives endorse WHO guidelines on prevention and treatment of postpartum hemorrhage. *Int J Gynaecol Obstet.* 2022;158 Suppl 1(Suppl 1):6-10. Available from: <https://doi.org/10.1002%2Fijgo.14199>



8. Rigouzzo A, Froissant PA, Louvet N. Changing hemostatic management in postpartum hemorrhage. *Am J Hematol.* 2024;Suppl 1: 99. Available from: <https://doi.org/10.1002/ajh.27264>

9. Hofer S, Blaha J, Collins PW, Ducloy-Bouthors AS, Guasch E, Labate F, et al. Haemostatic support in postpartum hemorrhage: A review of the literature and expert opinion. *Eur J Anaesthesiol.* 2023;40(1):29-38. Available from: <https://doi.org/10.1097/eja.0000000000001744>

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