



# Letter to the editor: Postpartum hemorrhage: still an enigma?

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## Abstract

Postpartum hemorrhage (PPH) is a significant cause of morbidity and mortality in low-income regions, characterized by blood losses either during the physiological postpartum ( $\geq 500$  ml) or in the immediate postpartum ( $\geq 1000$  ml), and causing variable degrees of hemodynamic instability. Although a preventable condition, PPHs may be involved in one-fourth of all maternal deaths; therefore, the risk assessment must be utilized to identify pregnancies with a higher risk of a PPH. Imaging studies can predict the PPHs in patients diagnosed with placenta previa. Still, the risk factors due to parity or duration of the second and third stages of labor are less understood. Optimizing the safety related to PPH needs consensual guidelines for healthcare and monitoring, besides prompt adequate, and timely interventions; but this is still lacking for vaginal deliveries. The aim is to emphasize the recent article published in this Journal focusing on PPH in Ecuador.

## Keywords:

Cervical myelopathy, spinal stenosis, laminoplasty.

## Abbreviations

PPH: postpartum hemorrhage.  
UAE: uterine artery embolization.  
PSC: quantified blood loss.  
TIUcBIPV: vacuum-induced intrauterine balloon tamponade.  
CES: cesárea.  
STEPS: Strategies and tools to improve the safety of parturients.

## Supplemental Information

No supplementary materials are declared.

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## Contributions from authors

**Vitorino Modesto dos Santos:** Conceptualization, Research, Data Curation, Formal Analysis, Writing – Original Draft.

**Kin Modesto Sugai:** Formal Analysis, Research, Writing – Original Draft, Writing – Revision and Editing.

**Rafael Campos Nunes:** Methodology, Project Management, Data Curation, Formal Analysis, Resources, Software, Supervision.

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## Availability of data and materials

The datasets used and analyzed during this study are available from the corresponding author upon reasonable request.

**Dear Editor:**

We read an intriguing article by Dután A and colleagues published in this journal that focuses on the leading causes, consequences, and treatment of PPH in patients from Ecuador [1]. They reviewed data from 34 patients aged 15 to 45 years who had PPH along with risk factors such as maternal and gestational ages, multiparity, type of delivery, medical history, and comorbidities [1]. The distribution of age ranges was as follows: 15-25 years (62%), 26-35 years (29%), and 36-45 years (9%). Multiple pregnancies occurred in 68% of cases, optimal prenatal care was noted in 70%, and vaginal delivery took place in 71%. Notably, 56% of patients had no risk factors, whereas prolonged delivery was observed in 17% of patients [1]. The major complication of PPH in the studied group was hypovolemic circulatory shock (84%), while the primary predisposing condition (59%) was the development of uterine tone failure [1]. The authors emphasized the importance of close clinical surveillance and prompt intervention in young multigravida patients, implementing preventive measures to avoid uterine atony and PPH [1]. In this context, it seems fitting to discuss additional recent literature to highlight the purpose of the first referenced article and enhance the general interest of non-specialists. A study in Saudi Arabia included two equal groups of 54 nurses and midwives (control group and study group) working in the delivery rooms and the postnatal unit [2]. The knowledge and skills of nurses regarding PPH management were enhanced after the simulation training, and the authors concluded that maternity nurses and midwives must have ongoing in-service simulation training to take a more active role in PPH prevention and treatment [2]. A study on uterine artery embolization (UAE) to control PPH and the need for hysterectomy was performed from February 2012 to March 2020 at a hospital in the United Arab Emirates [3]. Among 79 cases of elective (53) or emergency (26) embolization, placenta previa accreta (69.8% x 23.1%) and placenta previa (24.4% x 3.8%) were the indications for elective x emergency UAE; the necessity for UAE was the primary factor for the emergency procedure, primarily with placenta previa [3]. There were no maternal deaths, and bleeding control by UAE occurred in 78 patients, but in one case, hysterectomy was the last resort of management to stop the bleeding [3]. The authors recommended UAE as the first option to treat significant PPH because it increases survival with a low hysterectomy rate, showing no difference between emergency and elective procedures [3]. A retrospective study of 1,221 patients with term vaginal deliveries in New York City categorized patients as low (n=925), medium (n=268), or high (n=28) risk for postpartum hemorrhage [4]. The assessment of their outcome variables utilized the peripartum quantified

blood loss (QBL) and the ratio of postdelivery hematocrit to predelivery hematocrit; the high-risk score, but not the medium-risk score, was significantly associated with increased QBL compared to the low-risk score; additionally, BMI measured as a categorical variable was not significantly associated with QBL [4]. The authors emphasized the increased maternal age associated with decreased QBL, the decreased odds for QBL  $\geq$  500 mL, and an increased hematocrit ratio indicative of less blood loss. A study from October 2022 to November 2023 included 20 women who underwent vacuum-induced intrauterine balloon tamponade (vIBT) to manage PPH for one hour with 50-100 ml of saline [5]. The safety and efficacy of vIBT were confirmed, with no cases of anaphylaxis, uterine perforation, endometritis, or intrauterine balloon expulsion; the outcome was successful in 19 patients. The authors considered vIBT easy to perform, and blood transfusion was needed in six cases [5]. A study in France included women aged 18 years and over with a singleton pregnancy, in the first stage of labor, at 36-42 weeks of gestation, with epidural anesthesia and vaginal delivery [6]. The main objective was to evaluate PPH rates and the characteristics of mothers, newborns, labor, and delivery, and their relations to PPH in the 1,598 women (864 nulliparous and 680 parous); the PPH rates were 9.1% (79/864) and 7.4% (54/680), with an overall rate of 8.3% (133/1,598). PPH increased with longer durations of oxytocin use and the third stage of labor in the nulliparous group, and the risk was higher with a prolonged third stage and previous PPH in the parous group [6]. The authors suggested further research on PPH focusing on the duration of the labor's third stage. Three different methods for estimating blood loss (EBL) and risk factors related to early PPH in women undergoing cesarean section (CS) were evaluated in 21 cases and 452 controls [7]. The patients with PPH had a significant increase in surgery time (60 min. vs. 46 min), fetal birth weight (3780 g vs. 3417.5 g), uterine atony (61.9% vs. 2.2%), and myomas (9.5% vs. 1.1%); age of 31-34 years, overweight/obesity, emergency CS, and fetal macrosomia were identified as risk factors [7]. The authors highlighted emergency CS and fetal macrosomia as the strongest contributors to PPH in cases of CS, along with the role of different ways of EBL to improve hemorrhage control [7]. The new Strategies and Tools to Enhance Parturient Safety (STEPS) program for PPH management was implemented in XX women who had vaginal labor from January 2020 to November 2023, aiming to compare PPH-related outcomes for two years before and after STEPS [8]. During the four years, 24,235 women had vaginal deliveries with 11.1% of PPH before STEPS and 11.8% after STEPS; severe PPH remained unchanged, but cases requiring blood transfusion decreased [8]. The authors

concluded that the STEPS program improved PPH management, enhanced risk identification, increased targeted intervention, and reduced blood transfusion and hospitalization [8].

In conclusion, the included reviews and case studies about predisposing conditions, manifestations, consequences, and appropriate management of PPH are due to the enhanced interest in these issues, which was stimulated by the very opportune work of Dután and colleagues.

## References

1. Dután A, Hidalgo A, Vizueta C. Risk factors associated with the development of postpartum hemorrhage. A single-center observational study. *Actas Médicas (Ecuador)* 2025;35(1):27-32. doi: [10.61284/225](https://doi.org/10.61284/225)
2. Almutairi WM, Almutaraiy SM, Al-Zahrani A, Alsharif F, Faheem WA, Abunar A, Thabet HA. Transforming Postpartum Care: The Efficacy of Simulation Training in Hemorrhage Management Among Nurses. *Healthcare (Basel)*. 2025 Mar 4;13(5):549. doi: [10.3390/healthcare13050549](https://doi.org/10.3390/healthcare13050549). PMID: 40077113; PMCID: PMC11898481.
3. Elbiss H, Al Awar S, Koteesh J, Khair H, Maki S, Abdalla DH, Abu-Zidan FM. Uterine artery embolization in the management of postpartum hemorrhage. *World J Emerg Surg*. 2025 Jan 23;20(1):6. doi: [10.1186/s13017-025-00580-z](https://doi.org/10.1186/s13017-025-00580-z). PMID: 39849514; PMCID: PMC11755801.
4. Gutierrez-Disla R, Gheewala R, Fogel J, Jacobs AJ. Hemorrhage risk score and peripartum quantified blood loss. *Proc (Bayl Univ Med Cent)*. 2024 Nov 5;38(1):7-14. doi: [10.1080/08998280.2024.2419193](https://doi.org/10.1080/08998280.2024.2419193). PMID: 39712423; PMCID: PMC11657149.
5. Shimaoka R, Takahashi Y, Ono H, Inuzuka S, Matsui M, Asai K, Iwagaki S. Safety and efficacy of the initial application of vacuum-induced intrauterine tamponade for the management of postpartum hemorrhage. *Taiwan J Obstet Gynecol*. 2025 Jan;64(1):46-52. doi: [10.1016/j.tjog.2024.08.005](https://doi.org/10.1016/j.tjog.2024.08.005). PMID: 39794050.
6. Voillequin S, Quibel T, Rozenberg P, Rousseau A. Duration of the second and third stages of labor and risk of postpartum hemorrhage: a cohort study stratified by parity. *BMC Pregnancy Childbirth*. 2025 Feb 11;25(1):143. doi: [10.1186/s12884-025-07229-4](https://doi.org/10.1186/s12884-025-07229-4). PMID: 39934771; PMCID: PMC11817052.
7. Włodarczyk Z, Śliwka A, Maciocha H, Paruszewski S, Wyszyńska J, Kłopecka M, Afrykańska G, Śliwińska M, Ludwin A, Stanirowski PJ. The Role of Accurate Estimations of Blood Loss and Identification of Risk Factors in the Management of Early Postpartum Hemorrhage in Women Undergoing a Cesarean Section. *J Clin Med*. 2025 Mar 10;14(6):1861. doi: [10.3390/jcm14061861](https://doi.org/10.3390/jcm14061861). PMID: 40142668; PMCID: PMC11943044.
8. Zhang P, Fan Y, Song H, Lv Y, Geng H, Ma P, Cui H, Jia Y, Chen X. Step forward: implementation and evaluation of STEPS program to optimize postpartum hemorrhage management in vaginal deliveries. *Am J Obstet Gynecol MFM*. 2025 Jan;7(1):101581. doi: [10.1016/j.ajogmf.2024.101581](https://doi.org/10.1016/j.ajogmf.2024.101581). Epub 2024 Dec 14. PMID: 39675700.

## Declarations

### Approval of the ethics committee and consent to participate

Not required.

### Publication consent

Not required.

### Conflicts of interest

The authors have no conflicts of interest.

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