



The Causes of Postpartum Hemorrhage Leading to Packed-Cell Transfusion

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Dear Editor,

Postpartum hemorrhage (PPH) is defined as the loss of more than 500 mL or 1000 mL of blood following vaginal birth or cesarean section, respectively, within the first 24 hours after delivery. Poor uterine tone following childbirth, uterine trauma or rupture, pregnancy products remain, and underlying maternal diseases such as coagulopathy account for the majority of PPH cases (1, 2).

Some procedural factors, including cesarean section delivery, overuse of medical labor induction, instrumental vaginal delivery, curettage, and episiotomy, as well as some women's maternal characteristics, including advanced age, primary gravid, history of previous cesarean section, coagulopathy diseases, obesity, multiple pregnancies, and gestational hypertensive disorders, can increase the risk of PPH (3-6).

Although remarkable developments have taken place in the medical and surgical treatment, PPH is still a leading cause of maternal mortality (7), and its prevalence is unreasonably high, especially in low-income countries. For instance, the prevalence of PPH in lower-income countries has been reported to be 4 to 11 per 1,000 deliveries (8). Prevention and perfect management of PPH can considerably reduce the maternal peripartum morbidity and mortality. To this end, discovering the underlying causes of PPH seems to be the first and most important step to take.

This retrospective and descriptive study investigated 80 pregnant women aged 18 - 38 years with packed cell transfusion indication after the delivery in Ali Ibne Abitaleb Hospital, Zahedan, Iran, in 2017 - 2019.

Among the causes leading to packed cell transfusion in the study population, cesarean section (31.2%) was the

most prevalent cause, followed by placenta accreta (15%), abortion (15%), and placenta previa (12.5%). Although there were no significant differences among PPH causes leading to packed cell transfusion in terms of age (P-value = 0.690), women with placenta Previa were the oldest participants, and pregnant women with mole and ectopic pregnancy were the youngest ones.

The reported global incidence of PPH varies greatly according to the country, quality of medical records, estimation methods of blood loss, and discharge time of childbirth women (5, 9, 10). Furthermore, PPH is a major cause of maternal mortality worldwide. Although most of these deaths occur in low-income countries, recent assessments have suggested an increasing trend of PPH in high-income countries (11-13).

Despite the presence of PPH risk, the assessment of blood loss, monitoring women after childbirth, as well as on-time application of packed cells and other blood products can reduce maternal mortality and save 1500 life/year worldwide (14).

According to our study results, moreover, women delivering their babies through cesarean section were more likely to lose blood than women having vaginal births. The current cesarean section delivery, as well as positive history of cesarean section are significant risk factors of PPH due to the increased risk of abnormal placentation, hemorrhage, and peripartum hysterectomy (15, 16).

Although adopting blood transfusions and procedures to control bleeding can be lifesaving, these products are hardly available and extremely expensive. Hence, it is absolutely vital to preserve and apply them appropriately. It was suggested that future studies with longer follow-up of

pregnant women should be conducted to investigate different populations with different races/ethnicity and socioeconomic situations.

Footnotes

Authors' Contribution: Study concept and design: A. A; data collection: M. H; drafting of the manuscript: R. M and Z. A; critical revision of the manuscript: A. A, and R. M; statistical analysis: H. A. All authors read and approved the final manuscript.

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Ethical Approval: This study was conducted in accordance with the Helsinki Declaration, and was approved by the Zahedan University of Medical Sciences Ethics committee (link: ethics.research.ac.ir/ProposalCertificateEn.php?id=89635).

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