New WHO recommendations on prevention and treatment of postpartum hemorrhage

Özge Tunçalp *, João Paulo Souza, Metin Gülmezoglu

Department of Reproductive Health and Research, WHO, Geneva, Switzerland

ABSTRACT

Improving health care for women during childbirth in order to prevent and treat postpartum hemorrhage (PPH) is an essential step toward achieving Millennium Development Goal 5. In March 2012, WHO held a Technical Consultation on the Prevention and Treatment of Postpartum Haemorrhage to review current evidence and to update previously published PPH guidelines. The present paper provides an overview of the most recent WHO guidelines for both prevention and treatment of PPH, with an emphasis on the key messages and changes.

1. Introduction

Despite the progress made in reducing morbidity and mortality due to postpartum hemorrhage (PPH), PPH is still the leading cause of maternal mortality in low-income countries and the primary cause of nearly one-quarter of all maternal deaths globally [1]. Improving health care for women during childbirth in order to prevent and treat PPH is an essential step toward achieving Millennium Development Goal 5.

In March 2012, WHO held a Technical Consultation on the Prevention and Treatment of Postpartum Haemorrhage to review current evidence and to update previously published PPH guidelines [2]. In line with the earlier guidelines, the new recommendations followed a structured process of scoping and prioritizing the questions, conducting systematic reviews, grading the quality of the evidence, and finalizing the recommendations via multi-stakeholder guideline panel. A total of 22 systematic reviews were used as the evidence base for the new guidelines, which address both prevention and treatment of PPH [3].

The present paper provides an overview of the most recent WHO guidelines for the prevention and treatment of PPH, with an emphasis on the key messages and changes.

2. Prevention of PPH

Postpartum hemorrhage is commonly defined as blood loss of 500 mL or more within 24 hours of birth. The burden of PPH can be substantially reduced through the use of prophylactic uterotonics during the third stage of labor, and by timely and appropriate management.

In this context, active management of the third stage of labor (AMTSL) has become a central component of the PPH reduction strategies of governments around the world. Initially, AMTSL comprised a package of 3 components: administration of a uterotonic immediately after the birth of the infant; controlled cord traction (CCT) to deliver the placenta; and early cord clamping [1]. Massage of the uterine fundus after delivery of the placenta was sometimes included in AMTSL. Subsequently, early cord clamping was dropped owing to the absence of clear benefits to the mother and because of the benefits to the infant of late cord clamping [4].

In 2012, the results of a large WHO multicenter trial were published and incorporated into new WHO recommendations regarding AMTSL [5]. The study showed that the addition of CCT did almost nothing to reduce hemorrhage, except for small reductions in blood loss and the duration of the third stage of labor. The findings underline the importance of oxytocin as the key component of the AMTSL package.

The new WHO guidelines recommend that administration of oxytocin remains central to the implementation of AMTSL and that the performance of CCT is an optional component if a skilled birth attendant assists the delivery. However, in settings in which skilled birth attendants are not available, CCT is not recommended under this guidance. It should be noted that CCT is the first intervention for managing...
The WHO guidelines do not recommend sustained uterine massage as an intervention to prevent PPH among women who have already received prophylactic oxytocin. However, the assessment of uterine tonus through abdominal palpation during the immediate postpartum period is recommended for early identification of uterine atony in all women.

In summary, based on the most recent evidence, the understanding of the contribution of each component of the AMTSL package has evolved. The uterotonic is the primary intervention, CCT may add a small benefit, and uterine massage may add no benefit for the prevention of PPH among women who have received a uterotonic. Table 1 summarizes the recommendation status of these different components based on the level of provider.

The recommendations also discuss alternative uterotonics for the prevention of PPH. Misoprostol and ergot derivatives are recommended if oxytocin is not available but caution should be exercised when opting for ergot derivatives in unscreened populations, as these drugs have clear contraindications in women with hypertensive disorders. In settings in which skilled birth attendants are not present and oxytocin is unavailable, misoprostol (600 μg orally) administration by community health workers and lay health workers is recommended for the prevention of PPH. However, the use of misoprostol as an alternative uterotonic should not detract from the objective of making oxytocin widely accessible.

In terms of reducing blood loss during the third stage of labor in cesarean deliveries, oxytocin (intravenous [IV] or intramuscular) is the recommended uterotonic for the prevention of PPH. The WHO guidelines also note that carbopolice, an oxytocin analog, is associated with a reduction in the use of additional uterotonic agents, although it is more expensive and associated with no difference in the occurrence of severe hemorrhage compared with oxytocin. In cesarean deliveries, cord traction for removal of the placenta is recommended over manual removal.

3. Treatment of PPH

The use of uterotonics—with oxytocin alone as the first choice—has a central role in the treatment of PPH. Intravenous oxytocin is the first-line uterotonic; this recommendation also covers women who have already received this drug for PPH prophylaxis. However, the guidelines acknowledge the fact that IV oxytocin might not be available in all settings owing to shortage of drugs and/or healthcare providers, and they encourage decision makers in these settings to aim to make oxytocin widely accessible.

In settings in which IV oxytocin is not available or if the bleeding does not respond to oxytocin, the use of IV ergometrine, oxytocin–ergometrine fixed dose, or a prostaglandin drug (including 800 μg of sublingual misoprostol) is considered a valid alternative. However, if PPH prophylaxis with misoprostol has been administered with no injectable uterotonics available, there is insufficient evidence to guide further misoprostol dosing, and the risk of potential toxicity must be considered.

Uterine massage for the treatment of PPH as soon as it is diagnosed and initial fluid resuscitation with isotonic crystalloids are recommended. If PPH persists, the use of intrauterine balloon tamponade and uterine artery embolization, given the available resources, is recommended for the treatment of PPH due to uterine atony. The next step is the use of surgical interventions, which should be utilized without further delays.

The guidelines also recommend a number of temporizing measures until appropriate care is available, especially for women awaiting transfer. These include bimanual uterine compression, external aortic compression, and non-pneumatic anti-shock garments. Fig. 1 summarizes the general overview of PPH treatment.

The guidelines highlight the use of tranexamic acid in cases of refractory atonic bleeding or persistent trauma-related bleeding.

4. Health systems and organization of care

The ultimate goal of these recommendations is to improve the quality of care and health outcomes related to PPH; they can only have the intended impact on the lives of women if they are effectively implemented in the facilities and countries in which they are needed the most. Therefore, health facilities delivering maternity services are encouraged to adopt formal protocols for the prevention and treatment of PPH as well as for referrals to a higher level of care. While doing so, the setting and experience-related differences should be taken into account. The use of simulation training for PPH treatment is recommended in pre-service and in-service training programs. Moreover, monitoring the use of uterotonics after birth for the prevention of PPH is recommended as a process indicator for programmatic evaluation.

5. Moving forward

During the development of these guidelines, critical knowledge gaps where further research is needed have also been identified. The key research priority underlined was to examine the effects of prenatal distribution of misoprostol to pregnant women for self-administration during the third stage of labor in settings in which the use of oxytocin is not feasible. Therefore, WHO suggests that programs based on community distribution of misoprostol to pregnant women during the prenatal period for self-administration are implemented in the context of research or with thorough monitoring and evaluation.

In conclusion, while promotion of universal coverage for essential interventions such as measures for prevention and management of PPH continues globally, it should not be forgotten that high coverage does not necessarily translate into better health outcomes for women. Quality of care also relates to how and when these interventions are delivered within the continuum of care and functioning referral systems. Hence, all of these recommended activities should take place within a comprehensive package of interventions to prevent and manage PPH, along the community-to-hospital continuum of care.

Table 1

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<tr>
<th>Recommendation status of the individual components for AMTSL by provider.</th>
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<tbody>
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<td>Uterotonics</td>
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<td>Early cord clamping</td>
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<td>Controlled cord clamping</td>
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<td>Continuous uterine massage</td>
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Conflict of interest

The authors have no conflicts of interest.

References


