

Saving women's lives: evidence-based recommendations for the prevention of postpartum haemorrhage

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Failure of the uterus to contract adequately after childbirth (atonicity) is the most common cause of postpartum haemorrhage (PPH), the leading cause of maternal death in Africa and Asia.¹ Attempts to identify women at risk of atonic PPH have been unsuccessful. Numerically, more women without risk factors have atonic PPH compared to those with risk factors. To prevent atonic PPH, interventions should therefore be targeted at all women during childbirth.

Active management of the third stage of labour has been described as a package comprising the following interlocking interventions: administration of a prophylactic uterotonic after birth of the baby, and usually also early cord clamping and cutting, and controlled cord traction.² Other definitions in this package include uterine massage, but without reference to the timing of cord clamping.³ In contrast, expectant (also called physiological or conservative) management involves waiting for signs of separation and allowing the placenta to deliver spontaneously, or aided by gravity or nipple stimulation.² While there is agreement on the beneficial effects of active management of the third stage of labour for prevention of PPH, there is less consensus on issues such as importance of the intervention's individual components, the best methods and the requirements for safe administration of this intervention under conditions of limited resources. In particular, the choice of uterotonics has been the subject of discussion and debate.

Injectable oxytocin has been recommended for routine use in the active management of the third stage of labour;³ however, a safe injection requires skills and sterile equipment. Oxytocin may be inactivated if exposed to high ambient temperatures.⁴ In contrast, misoprostol,

a prostaglandin analogue with uterotonic effects, is reportedly more stable than oxytocin and has been administered by oral, sublingual and rectal routes in several studies.⁵ Misoprostol use for prevention of PPH has been approved⁶ or included in national guidelines⁷ in some countries. Suggestions have been made to provide misoprostol tablets where oxytocin is not available⁸ to non-skilled providers⁹ and to women themselves to prevent PPH.¹⁰

The WHO Technical Consultation on the Prevention of Postpartum Haemorrhage in Geneva on 18–20 October 2006 reviewed the evidence and provided answers to some of these questions following a widely-accepted methodology for guideline development.¹¹ In head-to-head comparisons of uterotonics in the context of active management of labour, injectable oxytocin and injectable ergometrine are equally effective for preventing PPH. Injectable ergometrine has more side-effects and is less stable in heat and light compared to oxytocin. Oral ergometrine is thought to be ineffective.^{4,12} Compared to oxytocin, severe PPH and the use of additional uterotonics occur significantly more often with oral misoprostol. This uterotonic has more side-effects and higher acquisition costs than oxytocin. There is insufficient evidence to support the use of misoprostol by other routes, or injectable prostaglandins instead of oxytocin for prevention of PPH. Therefore, oxytocin is the drug of choice for the prevention of atonic PPH. (The complete set of recommendations¹³ from this consultation and its supporting evidence are available at www.who.int/making_pregnancy_safer/en)

What should maternal health programme managers do with these recommendations? When national guidelines are updated and informed decisions are

made on preventing the major cause of maternal deaths, the WHO recommendations can form the basis of local judgements. Additional factors to consider may include cost: at programme level, oxytocin with disposable syringes and needles is currently less expensive to procure than misoprostol in the dose used for PPH prevention. The increased incidence of severe PPH and the increased need for additional uterotonics among women receiving misoprostol for PPH prevention have significant programmatic implications, especially in settings where anaemia is common and access to emergency obstetric care is limited.

Concerns about oxytocin's stability in tropical environments without refrigeration possibly overstate the problem. Oxytocin is relatively stable at temperatures below 30 °C.⁴ Moreover, when oxytocin is used routinely for active management of the third stage (for every parturient), the rapid turnover of stock will result in shorter environmental exposures. Surveys in Africa show that oxytocin is available and accessible in most health facilities and the lack of oxytocin is often due to health system failures that affect any commodity.^{14,15} Maternal health programme managers should also use the experience of cold chain management for immunization programmes to ensure a more stable environment for oxytocin. If private enterprises can keep cola drinks or beer cold, even in remote areas of countries without stable power supplies, the same should be possible for oxytocin.

Training for skilled providers should ensure competency in safe injection and infection-prevention practices, as well as competency in active management of the third stage of labour as a routine in all childbirths. Making oxytocin available as a single-dose disposable pack will

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further help to reduce concerns related to injection safety.

In addition, programme activities should seek to expand community awareness, response and demand for quality maternal health services, and should include activities within the health system to review all maternal deaths and

severe morbidity and to act on lessons learned.

While there is evidence that administration of misoprostol alone by skilled providers in the absence of other components of active management of the third stage of labour is likely to reduce the risk of PPH,¹⁶ there is currently insufficient

evidence for the safe use of misoprostol by lay providers in non-facility settings. Inappropriate use of powerful uterotonic drugs, especially before childbirth, can be associated with significant maternal and perinatal morbidity and even death. ■

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Corrigenda

In Vol. 85, issue number 3, 2007, page 163, the second author's name should read "A Mushtaque R Chowdhury" and the third author's affiliation should read "Knowledge Management and Sharing, WHO, Geneva, Switzerland."