

POSTPARTUM HEMORRHAGE

Postpartum hemorrhage (PPH) is the leading cause of maternal death in the developing world. The administration of oxytocin after childbirth has been shown to reduce postpartum bleeding and is the standard treatment for PPH. However, several factors can complicate its safe and effective use in resource poor settings. For instance, oxytocin requires refrigeration, sterile equipment for safe injection, and trained medical providers for administration. Since misoprostol has similar uterotonic effects as standard injectable oxytocics, its use has been investigated as an alternative for the prevention and treatment of postpartum bleeding. Misoprostol offers several important advantages over standard regimens, including its oral administration, stability at ambient temperatures, widespread availability, and low cost. Investment in misoprostol has the potential to reduce the rate of PPH and its severity, thereby contributing to the reduction in maternal mortality ratios and the successful achievement of the United Nations Millennium Development Goal (Objective 5).

What is misoprostol?

Misoprostol is a synthetic E₁ prostaglandin analog that is widely used for a number of reproductive health indications including the prevention and treatment of postpartum hemorrhage.

Why is misoprostol a good drug for PPH?

- Misoprostol tablets are cheap and widely available
- Misoprostol is stable at ambient temperatures and does not require special storage facilities
- Misoprostol can be delivered at the community level

How does misoprostol work?

Misoprostol stimulates uterine contractions and may effectively prevent or end bleeding after delivery. It may be an especially important drug in places where there are currently no other effective drugs available for prevention or treatment of postpartum hemorrhage.

- Adjunct use of misoprostol after childbirth has entered into clinical practice without evidence to support a specific regimen. To demonstrate the value-added of using misoprostol in conjunction with injectable uterotonics, Gynuity is collaborating with the Effective Care Research Unit, East London, South Africa and providers at hospitals in South Africa, Nigeria, and Uganda to test whether 400 mcg sublingual misoprostol, in addition to routine oxytocin during the third stage of labor, has a greater effect in preventing PPH than oxytocin alone.

Treatment of postpartum hemorrhage

- Several reports have suggested that misoprostol may be a powerful treatment for PPH both when used alone and in conjunction with standard uterotonics, however no standard regimens or protocols have been developed. Gynuity Health Projects, in collaboration with investigators in Burkina Faso, Ecuador, Egypt, Turkey, and Vietnam, is conducting the first large-scale, multi-site, randomized controlled clinical trial on the effectiveness of misoprostol for the treatment of primary PPH. The purpose of this trial is to ascertain whether 800 mcg sublingual misoprostol is as effective as a regimen of 40 IU oxytocin (IV) in stopping hemorrhage in tertiary care facilities. Evidence from this multi-centric trial will shed light on whether misoprostol is a viable option for treating PPH in these settings.
- Misoprostol is also being investigated as an adjunct therapy option for postpartum bleeding. In collaboration with the World Health Organization and its collaborating research centers in Argentina, Egypt, South Africa, Thailand, and Vietnam, Gynuity is researching whether 600 mcg sublingual misoprostol plus standard injectable uterotonic treatment of PPH has an additional benefit in reducing postpartum blood loss.

Objective assessment of postpartum blood loss

- As part of the large multi-country PPH treatment trial, each component of active management of the third stage of labor (AMTSL), in addition to measured postpartum blood loss, has been documented for more than 30,000 normal vaginal deliveries. This study is the largest trial to collect and measure blood loss systematically using a standardized methodology, the BRASSS-V Fixable Drape™, in hospitals. The data collected will provide pivotal information related to the effectiveness of individual components of active management on postpartum blood loss, the frequency of PPH, and care of women experiencing PPH.
- Gynuity is also collaborating with KEM Hospital in Pune, India on a randomized prospective study to compare measured blood loss using two different blood measurement techniques. Postpartum blood loss is collected and objectively assessed using either the BRASSS-V Fixable Drape™ or a bedpan measurement protocol that involves placing a shallow bedpan below the delivering woman's buttocks and weighing the collected blood and any blood-soaked gauze and pads. The purpose of this study is to ascertain if there are any differences in the distributions of values for blood loss obtained from the two measurement techniques and to document any correlation between changes in hemoglobin levels and the amount of measured blood loss.

Other Program Components

- Collaboration with pharmaceutical companies to facilitate the registration of misoprostol for PPH indications internationally.
- Development of training and educational materials.

PUBLICATIONS

Gynuity and colleagues have produced the following publications related to postpartum hemorrhage. Some of these documents can be downloaded from our website at www.gynuity.org. To solicit copies of printed publications please contact pubinfo@gynuity.org.

- Postpartum Hemorrhage: A Challenge for Safe Motherhood – Fact Sheet, March 2006
- Instructions for Use: Misoprostol for Prevention of Postpartum Hemorrhage, July 2007
- Walraven, G., J. Blum, Y. Dampha, M. Sowe, L. Morison, B. Winikoff, N. Sloan. "Misoprostol in the management of the third stage of labour in the home delivery setting in rural Gambia: A randomised controlled trial." British Journal of Obstetrics and Gynaecology (Sep 2005), 112(9), pp. 1277-1283.

This work is funded by Family Care International. For additional information please contact pubinfo@gynuity.org.

Collaborations

Gynuity is involved with a range of international agencies and working groups devoted to postpartum hemorrhage and other maternal health issues.

- Aga Khan Health Services
- Aga Khan University
- Effective Care Research Unit, East London, South Africa
- Family Care International
- Prevention of Postpartum Hemorrhage Initiative (POPPHI) Working Group
- World Health Organization

4-Oct-07