Uterine atony and uterotonics in postpartum haemorrhage

The International Federation of Gynecology and Obstetrics (FIGO) recognises that postpartum haemorrhage (PPH) continues to be the leading cause of maternal morbidity and mortality around the world. In 2022, the FIGO Committee on Childbirth and PPH produced a supplement issue of the *International Journal of Gynecology and Obstetrics* devoted to the management of PPH.[1] The publication illustrated that despite collaborative efforts, there remains a lack of implementation of management recommendations, and a lack of unified guidelines to tackle this life-threatening condition. The publication summarises the best available evidence for both prevention and treatment of PPH. Uterotonics represent one key element of an armamentarium available to save women's lives by preventing or treating PPH.

Postpartum haemorrhage: contributory factors

PPH is responsible for the deaths of 70,000 women annually, with most of those deaths occurring in Africa and South Asia.[2] And it is one of the most common causes of maternal death, regardless of income or practice setting. Maternal anaemia, which may occur as a result of menstrual irregularities, diet and underlying chronic conditions, is common, and is a recognised risk factor for PPH.[3] FIGO understands that historic and ongoing limitations in access to trained personnel and critical resources such as clean water systems, nutritious diet, educational opportunities and health care provision particularly regarding menstrual disorders contribute to higher rates of anaemia in certain communities.[4] Globally, 29.9% of women of reproductive age are anaemic, but rates are significantly higher in central and west Africa and in south Asia. Within the USA, anaemia prevalence is higher among Black women than other racial or ethnic groups. Such racial disparities can result from, among other drivers, higher risk of nutrient deficiency; greater exposure to infection including HIV and malaria; and lower levels of health care access.[3]

Other important factors contributing to PPH include infections and parasites, and conditions which result in uterine distention, such as polyhydramnios, multiple gestation, or abnormal placentation. Likewise, conditions that contribute to uterine atony such as infection, coagulation defects and the use of magnesium sulphate can increase the risk of PPH.

FIGO reminds clinicians to recognise the most common causes of PPH when anticipating or assessing the clinical picture. As an aide memoire these are tone, trauma, tissue and thrombin.[1] Clinicians should realise that any treatment that avoids the conditions under which PPH occurs is ideal, and therefore recognising or treating risk factors is a prerequisite. It is important to note that PPH occurs in both high- and low-resource settings; however, the likelihood of a woman dying because of PPH is higher in under-resourced settings.[5] PPH therefore requires both prevention and a prompt and systematic response, to make a difference.

Uterine Atony

While the definition, diagnosis and prevalence of uterine atony may vary across settings, uterine atony, or inadequate uterine tone, is estimated to cause 70−80% of postpartum haemorrhage and in most cases should be suspected first, in the aetiology of postpartum haemorrhage.[6] Recently, some authors have questioned uterine atony as a causative factor in PPH and have suggested that uterine atony may be an 'opinion' of treating clinicians, with an absence of scientific evidence that uterotonics have any effect on maternal mortality.[7]

We would refer them to a meta-analysis including almost 200 studies, and 136,000 women, which demonstrated that uterotonics reduce PPH rates during vaginal and caesarean deliveries.[8] Additionally, the recent E -MOTIVE study of 80 hospitals and more than 200,000 women in Africa revealed that early detection of PPH with a bundle treatment approach led to reduced PPH and fewer deaths. These results relied on measuring blood loss and rapid first-response treatments with uterine massage, oxytocic drugs, tranexamic acid, intravenous fluids, examination and escalation.[9] FIGO's position is that there is no question that uterotonics are essential, and that they do need to be an integral part of a systematic bundle approach.

The Need for Uterotonics

FIGO proposes a "bundle approach" in the management of PPH, with uterotonics as a fundamental component. Risk factors for PPH are anticipated in such a safety care bundle, which recommends readiness, recognition, response and reporting. The first step is readiness and the use of uterotonics for the third stage of labour for all births is an important element. If a woman experiences PPH, implementation of a "first response" bundle is recommended, with uterotonics, along with crystalloids, uterine massage and tranexamic acid, followed by a "response to refractory PPH" bundle that continues uterotonics and tranexamic acid but may be accompanied by compression approaches and uterine tamponade. Refractory PPH is defined as haemorrhage requiring second-line interventions, including three or more uterotonics, bimanual uterine compression, uterine balloon tamponade/vacuum-induced haemorrhage control devices, or surgical treatment such as cervical or high vaginal laceration repair, uterine cavity exploration, surgical devascularization procedures, uterine compression sutures, or hysterectomy.[10]

FIGO and the International Federation of Midwives (ICM) recently issued a joint statement on the use of uterotonics during active management of third stage of labour to prevent PPH and described the advantages and disadvantages of each of the available medications.[11] The statement also included the training of support personnel for deliveries.

FIGO's position on the issue

PPH is most often a result of uterine atony, according to current available evidence, and the use of uterotonics should be an integral part of the care bundle. Early recognition and treatment are essential.

Because of the complexities of PPH, uterotonics alone may not suffice. Predisposing factors for PPH are also contributing factors for higher maternal mortality. These include anaemia, inadequate nutrition, poor access to UHC and populations marginalised by social, racial and economic circumstances. Providing preventive, equitable health care across the lifespan of women, from adolescence through the reproductive years, is essential.

FIGO is dedicated to improving women's health and rights, and to reducing disparities in health care available to women and newborns worldwide. As such, FIGO acknowledges the influence of structural racism on differentiated rates of anaemia and incidence of PPH, and the urgent need to address these social determinants as part of a holistic approach to women's health.

FIGO recommendations

- All health care providers become well versed in the factors that predispose to post-partum hemorrhage and patient groups at greatest risk, from preconception health care to pregnancy and childbirth.
- Anemia should be proactively managed with iron therapy, including consideration of intravenous infusion when moderate to severe.
- A systematic bundle approach that involves readiness, recognition, response and reporting should be implemented in every delivery and birthing facility.
- The E-MOTIVE elements should be universally adopted.
- Clinicians and facilities that provide birthing care for women should ensure processes and supplies are in place and regularly maintained to provide routine preventative measures and prompt emergency response measures in the face of PPH.
- All health systems and clinicians provide appropriate training in the prevention, diagnosis and treatment of PPH.
- There is a commitment to recognise and resolve the systemic racism that adversely impacts on care delivery and outcomes, at each and every level.

FIGO commitments

FIGO commits to supporting and advocating for the reduction of maternal morbidity and mortality, and one element is the successful and knowledgeable use of uterotonics. FIGO recognises that saving women's lives requires improving their health and wellbeing across their lifespan in a life-course approach. To cite the recommendations of the IJGO review:

- FIGO will lobby and work with other international organizations to reduce maternal mortality and morbidity due to PPH.
- FIGO will work with all national societies in collaboration with nurses and midwives to lobby with their respective regional and national organisations to promote and implement these recommendations.
- All OBGYN societies in conjunction with other health care societies must endorse a strategy for effective prevention and treatment of PPH.
- All national societies must lobby with their local national governments to establish a PPH bundle approach and make the medical supplies and surgical equipment needed for the management of PPH readily available in all regions of their countries.
- All health systems are obligated to provide respectful care of the woman, the infant and the family. Health systems must provide appropriate and effective medications, water, oxygen, equipment, training, and transfer mechanisms to reduce maternal morbidity and mortality.

FIGO will fulfil its commitments by:

- developing and disseminating resources on uterotonics, including the complexity of prevention and treatment of PPH, for health care professionals

- influencing health systems, policymakers and providers to ensure that they are made aware of the impact of preconception health and pregnancy care on the health of their populations
- advocating for supportive capacity building, for gynecologists, obstetricians, frontline health care providers, and childbirth educators
- advocating for resources that support data collection and monitoring mechanisms at institutional and country levels for assessing and monitoring PPH rates and management practices
- advocating for safe and respectful care, including addressing and tackling systemic racism.

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About FIGO

FIGO is a professional membership organisation that brings together more than 130 obstetrical and gynaecological associations from all over the world. FIGO's vision is that women of the world achieve the highest possible standards of physical, mental, reproductive and sexual health and wellbeing throughout their lives. Our work to achieve this vision is built on four pillars: education, research implementation, advocacy and capacity building.

FIGO leads on global programme activities, with a particular focus on sub-Saharan Africa and South East Asia. We advocate on a global stage, especially in relation to the Sustainable Development Goals (SDGs) pertaining to reproductive, maternal, newborn, child and adolescent health and wellbeing, and non-communicable diseases (SDG3). We also work to raise the status of women and enable their active participation in achieving their reproductive and sexual rights, including through addressing female-genital mutilation (FGM) and gender-based violence (SDG5).

We also provide education and training for our Member Societies and build capacities of those in low-resource countries through strengthening leadership, translating and disseminating good practice and promoting policy dialogues.

FIGO is in official relations with the World Health Organization and a consultative status with the United Nations.

About the language we use

Within our documents, we often use the terms 'woman', 'girl' and 'women and girls'. We recognise that not all people who require access to gynaecological and obstetric services identify as a woman or girl. All individuals, regardless of gender identity, must be provided with access to appropriate, inclusive and sensitive services and care.

We also use the term 'family'. When we do, we are referring to a recognised group (perhaps joined by blood, marriage, partnership, cohabitation or adoption) that forms an emotional connection and serves as a unit of society.

FIGO acknowledges that some of the language we use is not naturally inclusive. We are undertaking a thorough review of the words and phrases we use to describe people, health, wellbeing and rights, to demonstrate our commitment to developing and delivering inclusive policies, programmes and services.

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