Appraisal of WHO recommendations for the prevention of postpartum haemorrhage (WHO/MPS/07.06)

Lamaran Makama Dattijo

Department of Obstetrics &Gynaecology, Jos University Teaching Hospital, Jos, Nigeria

Dattijo LM. Appraisal of WHO recommendations for the prevention of postpartum haemorrhage (WHO/MPS/07.06). Paper presented at: Training Course in Sexual and Reproductive Health Research 2010. Geneva Foundation for Medical Education and Research. 2010 Jul 26. Available from: http://www.gfmer.ch/SRH-Course-2010/assignments/Prevention-postpartum-haemorrhage-Dattijo-2010.htm

Contents

Abbreviations used in the text

AMTSL	Active Management of Third Stage of Labour
CHEW	Community Health Extension Worker
CHO	Community Health Officer
FIGO	International Federation of Gynaecology and Obstetrics
ICM	International Confederation of Midwives
MDG	Millennium Development Goals
PPH	Postpartum Haemorrhage
RCOG	Royal College of Obstetricians and Gynaecologists
SSA	Sub-Saharan Africa
UK	United Kingdom
UNICEF	United Nations Children Fund
USAID	United State Agency for International Development
WHO	World Health Organization

Summary

The document is on prevention of postpartum haemorrhage. It was put together by the departments of Making pregnancy safer and Reproductive health research in collaboration with international experts based on the WHO technical consultations on prevention of post partum haemorrhage in 2006.[1]

The document consisted of several parts which shed light on the issue that was being addressed, the methodology adopted, distillation of key points of interests, references utilized and instruments that were used in data collection. Works of Prendiville and Cotter were the main source on which the document was based.[1,2] This was not surprising considering the emergence of evidence-based methods in clinical decision making. Meta-analyses, systematic reviews and randomized controlled trials (RCTs) are placed at the top of the hierarchy of evidence.

Post partum haemorrhage is a major cause of maternal morbidity and mortality as revealed by the document and it is notoriously difficult to predict. Blood estimation difficulties and the fact that majority of women deliver outside health facilities in the areas where fatality from PPH was highest was also mentioned. Active management of third stage of labour (AMTSL) was advanced as a panacea for postpartum haemorrhage and was claimed to be superior to expectant management of third stage of labour at least in presence of skilled attendants. Oxytocin was the drug of choice in the document.

Data for the document was collected via questionnaire sent out to health professionals which were subsequently evaluated and the draft presented at the technical consultation.

Main recommendations in the document include: skilled attendants should offer AMTSL to all women, oxytocin should be given to all women in preference to ergometrine, further research on oral misoprostol is needed, early cord clamping only when indicated and no change in practice on delivery of placenta by controlled cord traction. Areas of further research were highlighted. These include dose and route of misoprostol, usage by unskilled attendant, effect on breastfeeding and role of individual components of active management.

The document is said to be applicable to both developed and developing countries. It called for dissemination and collaboration with regional bodies and professional associations across the world.

Literature review

Background

Postpartum haemorrhage (PPH) resulting from uterine atony is a major preventable cause of maternal morbidity and mortality especially in developing countries.[3] Efforts to reduce mortality from postpartum haemorrhage have been complicated by the fact that many deaths occur outside health facility and the delays in accessing health care, these in the developing countries bring to the fore, the obstetric pathology of poverty.[3,4] The Millennium Development Goal (MDG) 5, which aims to reduce maternal mortality by three-quarters by 2015, continues to be a daunting task for most developing countries. In Sub-Saharan Africa, for every 16 women, one will die of pregnancy and childbirth-related conditions and PPH accounts for 25% of the aetiology of maternal mortality.[4] Tackling PPH will no doubt help towards attainment of MDG 5.

Definition

A widely used definition of PPH is the loss of blood from the genital tract in excess of 500mls.[4-6] However, this definition has little or no clinical significance and blood loss is in itself difficult to measure. Other definitions have been advanced based on alteration of maternal vital signs and blood volume depletion. The WHO definition of 500 ml is increasingly becoming irrelevant, as most healthy mothers in the developed world can withstand a blood loss of more than 500 ml without any hemodynamic compromise.[4]

Causes

Primary postpartum haemorrhage is traditionally considered as a disorder of one or more of the four processes: uterine atony, retained clots or placental debris, genital lesions or trauma, and disorders of coagulation. An aide memoire is the four Ts: tonus, tissue, trauma and thrombin.[3] Uterine atony alone accounts for 75–90% of cases of postpartum haemorrhage. It can occur after normal vaginal delivery, instrumental vaginal delivery and abdominal delivery.

Risk factors

Every child-bearing woman is potentially at risk for postpartum hemorrhage.[3] It is said to occur in approximately 4 percent of vaginal deliveries.[3,11] Several studies have identified risk factors for the condition and some include: previous history of PPH, prolonged first and second stages of

labour, use of oxytocin augmentation and instrumental vaginal delivery. However, PPH often occurs in women with no identifiable risk factors. Its unpredictability makes the provision of emergency obstetric care a necessity in sub Saharan Africa where maternal mortality is high.

Management of third stage of labour

The prevention of postpartum haemorrhage is predicated on its anticipation, and active management of the third stage of labour. Primary postpartum haemorrhage due to uterine atony occurs when the relaxed myometrium fails to constrict the blood vessels, thereby allowing haemorrhage. The uteroplacental circulation at term receives about 1l/min hence;[3] postpartum haemorrhage is capable of exsanguinating the mother within a very short time especially in Sub-Sahara Africa (SSA) where anaemia is endemic. It is noteworthy that all non-surgical therapeutic modalities for postpartum haemorrhage involve enhancement of uterotonicity.[3] This is the basis for some components of AMTSL. Management of third stage can be expectant or active. Expectant management of the third stage of labour is also called the physiologic method and is best described as a "hands off" approach. The umbilical cord is not clamped or cut until cessation of pulsating; separation of the placenta occurs without intervention; and the placenta is delivered spontaneously or aided by gravity.[3,4] In active management, the physician facilitates the separation and delivery of the placenta and enhances the effectiveness of the uterine contractions to shorten the duration of the third stage of labour and reduce the risk of postpartum haemorrhage.

Meta-analysis of studies has concluded that active management of the third stage in the hospital setting was superior to expectant management in reducing blood loss, incidence of postpartum haemorrhage and duration of the third stage.[5,6] It was also associated with reduced postpartum anaemia, decreased need for blood transfusion, and less use of additional therapeutic uterotonic drugs. [5-7] While the literature suggests that active management using the standard oxytocics can reduce postpartum haemorrhage, the package is difficult to implement in developing countries with high case fatality from postpartum hemorrhages.[4] Majority of births also take place outside health facilities and are supervised solely by traditional birth attendants. Even where AMTSL is said to be practiced, it is said to mean different thing to different groups of health professionals.[8,9] In a survey of UK midwives and Obstetricians, it was found out that AMTSL is widely used by both obstetricians and midwives in the UK. But Syntometrine® is usually used for vaginal births and oxytocin for caesarean births; when this is given and when the cord is clamped varies.[10] Correct practice of AMTSL according to the ICM/FIGO definition was observed in 7% using ergometrine and none using oxytocin in Tanzania.[9] All providers used ergometrine for AMTSL instead of oxytocin as recommended by ICM/FIGO.[9]

Prevention of PPH has elicited robust interest from researchers throughout the world.[10-12] Drugs like misoprostol, carbetocin and traxanemic acid have been focus of research in AMTSL. Leung et al reported that intramuscular carbetocin is as effective as intramuscular syntometrine in preventing postpartum haemorrhage after vaginal delivery in the low-risk obstetric population. Carbetocin is less likely to induce hypertension than syntometrine. Although it is more costly, it has a low incidence of adverse effect.[13] They suggested that Carbetocin should be considered as a good alternative to conventional uterotonic agents used in managing the third stage of labour.[13] Further studies on the use of carbetocin in women suspected or diagnosed to have hypertensive disorder or pre-eclampsia is needed to see if it could become the drug of choice for this subgroup

of pregnant women. The place of misoprostol in community prevention of PPH has been an area of intense debate.[1,2,12] Because of the enormous benefits of using an effective oral uterotonic in the third stage of labour and since misoprostol could be used in this manner on a large scale worldwide, further research is essential to better assess the potential beneficial and harmful effects of the drug.[12]

Enough evidence has been advanced in multiple studies to warrant use of active management of third-stage labour;[4-6,10] however, because active management of third-stage labour is a multiple-step intervention, further research should be conducted to determine which aspects give the most protection against postpartum haemorrhage and which might hold some risk if used incorrectly or alone.

Guideline appraisal

Scope and purpose

The document is explicit on its objective which is to provide evidence based methods to prevent post partum haemorrhage by advocating active management of third stage of labour for all women. Target consumers of the guideline are expected to be skilled professional and policy makers. It is meant for both developed and developing countries. This is where the scope of the guideline fell victim to the "one size fits all" mind set associated with evidence-based methodology.[7] When implementing evidence into practice, it is just as important to consider an individual patient's circumstances; an aspect not always considered and not easily represented in forest plots. A woman delivering in Nigeria and her counterpart in Canada despite the obvious difference in their set up were recommended to have the package of AMTSL. Women in developed countries generally enjoy better health and nutrition than those in developing countries. Routine active management of the third stage of labour with the specific objective of reducing statistically significant postpartum blood loss, and its relevance to maternal mortality rates in developed countries seem to be questionable.[7] Many women in developed countries may be exposed to interventions that might not necessarily be the best option for them. Sadly too, the document recommendations for no fault of it; cannot be implemented to those that really need in developing countries due to shortage and mal-distribution of skilled attendants.[3,4]

Stakeholder's involvement

The involvement of stakeholders in the development of the document is commendable. External technical advisers of repute have been involved. There was also good spread of the advisers across various regions of the world. International organizations like UNICEF, USAID and the Royal college of Obstetricians and Gynaecologists were observers in the process of the document development. No statement of conflict of interest was noted. This should have been addressed considering the array of notable experts in the field of maternal health that participated in the process. There was also no evidence that patients' views were sought.

Guideline development

The methodology used to develop the document is robust and of high quality.[1] The search strategy was well described including the database searched and the search terms used.

Systematic review was used to summarize evidence from randomized trials, screened and profiles sent to members of technical consultation group for review. Some findings however, are from observational studies and case reports. While the process was rigorous, some recommendations raise questions with regard to the relevance of statistically significant outcomes versus clinically significant outcomes when informing clinical decisions.[7] The given recommendations are clear and precise but their link to evidence especially as regards the practice environment in developed countries is weak.[4,7] Peer-review process can be deemed to be adequate.

Applicability

Effective implementation of evidence-based health care practices remains a significant challenge in health facilities around the world.[8-10] Nigeria has a health system that has three levels: tertiary, secondary and primary. This document is well known among obstetricians and midwives only in Nigeria's tertiary hospitals and the recommendations of the document are to a large extent adhered to. The situation is however different in secondary level of care. The recommendations are largely unknown .The implementation of the document here is dependent on the quality of the personnel in the facility which varies from one area to the other. At the primary health care facility, due to the absence of appropriate complement of personnel, the recommendations are not known. At this level community health extension workers (CHEW) and officers (CHO) dominate the staff. In this level of care, organization is poor, lack of adequate human resources and the poor quality of the available human resources could be said to be responsible for the lack of implementation of these recommendations.

In Nigeria, maternal mortality ratio is 800 per 100000 live births with haemorrhage accounting for about 25% of all maternal death.[3] Poverty, illiteracy, unavailability of trained personnel continues to accentuate the problem.[3] Use of evidence-based guidelines improves quality of care, the behaviour of health care practitioners, and the health outcomes of patients.[4] Effective dissemination and implementation strategies for these guidelines are needed at all levels of maternity care in Nigeria.

Conclusion

The WHO document on prevention of postpartum haemorrhage is based on the available evidence on the issue as at 2006. It gave recommendations after a thorough review of the available evidence by experts in the field. While the document is applicable to both developed and developing countries, the individual circumstances of the women need to be considered.

I recommend the use of this document in all levels of care in Nigeria and other developing countries where post partum haemorrhage is a major cause of maternal mortality.

References

1. World Health Organization. WHO Recommendations for the prevention of postpartum haemorrhage. World Health Organization, 2007. Geneva.

2. World Health Organization. WHO guidelines for the management of postpartum haemorrhage and retained placenta. World Health Organization, 2009. Geneva.
3. B-lynch C, Keith LG, Lalonde AB, Karoshi M (eds). Textbook of Postpartum Haemorrhage. Sapiens Publishing. 2006. Dumfriesshire UK.
4. Miller S, Lester F, Hensleigh P. Prevention and treatment of postpartum hemorrhage: new advances for low-resource settings. J Midwifery Womens Health. 2004 Aug;49(4):283-92.
5. Prendiville WJ, Elbourne D, McDonald S. Active versus expectant management in the third stage of labour. Cochrane Database Syst Rev. 2000;(3):CD000007.
6. Elbourne DR, Prendiville WJ, Carroli G, Wood J, McDonald S. Prophylactic use of oxytocin in the third stage of labour. Cochrane Database Syst Rev. 2001;(4):CD001808.
7. Soltani H. Global implications of evidence 'biased' practice: management of the third stage of labour. Midwifery. 2008 Jun;24(2):138-42.
8. Althabe F, Buekens P, Bergel E, Belizán JM, Campbell MK, Moss N, Hartwell T, Wright LL. A behavioral intervention to improve obstetrical care. N. Engl. J. Med. 2008 May 1;358(18):1929-40.
9. Mfinanga GS, Kimaro GD, Ngadaya E, Massawe S, Mtandu R, Shayo EH, Kahwa A, Achola O, Mutungi A, Knight R, Armbruster D, Sintasath D, Kitua A, Stanton C. Health facility-based Active Management of the Third Stage of Labor: findings from a national survey in Tanzania. Health Res Policy Syst. 2009;76.
10. Farrar D, Tuffnell D, Airey R, Duley L. Care during the third stage of labour: a postal survey of UK midwives and obstetricians. BMC Pregnancy Childbirth. 2010;1023.
11. Maughan KL, Heim SW, Galazka SS. Preventing postpartum hemorrhage: managing the third stage of labor. Am Fam Physician. 2006 Mar 15;73(6):1025-8.
12. Hofmeyr GJ, Gülmezoglu AM, Novikova N, Linder V, Ferreira S, Piaggio G. Misoprostol to prevent and treat postpartum haemorrhage: a systematic review and meta-analysis of maternal deaths and dose-related effects. Bull. World Health Organ. 2009 Sep;87(9):666-77.
13. Leung SW, Ng PS, Wong WY, Cheung TH. A randomised trial of carbetocin versus syntometrine in the management of the third stage of labour. BJOG. 2006 Dec;113(12):1459-64.
14. Asuzu MC. The necessity for a health systems reform in Nigeria. Journal of Community Medicine & Primary Health Care. 2004;16:(1) 1-3.