WHO recommendation on the use of external aortic compression for the treatment of postpartum haemorrhage

21 September 2012

Recommendation

The use of external aortic compression for the treatment of postpartum haemorrhage due to uterine atony after vaginal birth is recommended as a temporizing measure until appropriate care is available.

(Weak recommendation, very-low-quality evidence)

Publication history

First published: September 2012

Updated: No updated planned

Assessed as up-to-date: September 2012

Remarks

- The GDG noted that the use of manoeuvres and other procedures requires training and that maternal discomfort and complications associated with these procedures have been reported.
- External aortic compression has long been recommended as a potential life-saving technique, and mechanical compression of the aorta, if successful, slows blood loss. The GDG placed a high value on this procedure as a temporizing measure in the treatment of postpartum haemorrhage.

Background

Postpartum haemorrhage (PPH) is defined as blood loss of 500ml or more within 24 hours after birth. PPH is the primary cause of nearly one-fifth of all maternal deaths globally. Most of these deaths occur during the first 24 hours after birth. The majority could be prevented through the use of prophylactic uterotonics during the third stage of labour, and by timely and appropriate management.

External aortic compression is an emergency manoeuvre proposed to reduce postpartum haemorrhage and permit time for resuscitation and control of bleeding.(1)
Methods

The recommendation was developed using standardized operating procedures in accordance with the process described in the “WHO handbook for guideline development”, based on the GRADE approach. (2,3) Outcomes used for this recommendation were the prioritized outcomes from the WHO recommendations on prevention and treatment of postpartum haemorrhage (2012).(4)

No randomized controlled trials have examined the use of external aortic compression for the treatment of PPH. Evidence from one prospective study, one case report and a quasi-randomized study was evaluated. (1,5,6) Data on relevant outcomes and comparisons were extracted.

WHO convened a Guideline Development Group (GDG) meeting in March 2012. This group of independent experts used the evidence profiles to assess evidence on effects on the pre-specified outcomes. GDG members discussed the balance between desirable and undesirable effects, overall quality of supporting evidence, values and preferences, magnitude of effect, balance of benefits versus disadvantages, resource usage, and feasibility, to formulate the recommendation. Remarks were added to clarify the recommendation, and aid implementation.

Further information on procedures for developing this recommendation are available here.

Recommendation question

For this recommendation, we aimed to answer the following question:

For women with postpartum haemorrhage (P), does external aortic compression (I) compared to no treatment (C) improve outcomes (O)?

Evidence Summary

A prospective study conducted in Australia examined the haemodynamic effects of external aortic compression in non-bleeding postpartum women. Successful aortic compression, defined as the absence of a femoral pulse and unrecordable blood pressure in a lower limb, was achieved in 11 of the 20 women. The authors concluded that the procedure was safe for healthy subjects and may be of benefit as a temporizing measure for the treatment of PPH while resuscitation and management plans are made.

Subsequently, one case report from Australia has described the use of internal aortic compression as a temporizing measure to control severe PPH due to placenta percreta at the time of caesarean section.

A quasi-randomized study (240 women) conducted in Egypt observed a decrease in the use of additional uterotonics and blood transfusions when a device for external aortic compression was used in addition to conventional treatment compared to conventional treatment only.

Further information on evidence supporting this recommendation are available here.
Implementation considerations

The successful introduction of evidence-based policies related to the prevention and management of PPH into national programmes and health care services depends on well-planned and participatory consensus-driven processes of adaptation and implementation. These processes may include the development or revision of national guidelines or protocols based on this recommendation. The recommendation should be adapted into locally-appropriate documents and tools that are able to meet the specific needs of each country and health service. Modifications to the recommendation, where necessary, should be justified in an explicit and transparent manner. An enabling environment should be created for the use of this recommendation, including changes in the behaviour of health care practitioners to enable the use of evidence-based practices. Local professional societies may play important roles in this process and an all-inclusive and participatory process should be encouraged.

Research implications

The GDG did not identify any research priorities related to this recommendation.

Related Links

WHO recommendations on prevention and treatment of postpartum haemorrhage (2012) - full document and evidence tables

Pregnancy, Childbirth, Postpartum and Newborn Care: A guide for essential practice

Managing Complications in Pregnancy and Childbirth: A guide for midwives and doctors (2nd ed)

References


Citation

WHO Reproductive Health Library. WHO recommendation on the use of external aortic compression for the