WHO recommendation on the use of non-pneumatic anti-shock garments for the treatment of postpartum haemorrhage

21 September 2012

**Recommendation**

The use of non-pneumatic anti-shock garments is recommended as a temporizing measure until appropriate care is available.

*(Weak recommendation, low-quality evidence)*

**Publication history**

**First published:** September 2012

**Updated:** No update 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.
- The GDG noted that research evaluating the potential benefits and harms of non-pneumatic anti-shock garments is ongoing. Based on the evidence available, the GDG regarded non-pneumatic anti-shock garments as a temporizing measure while transfer is awaited.

**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.

The non-pneumatic anti-shock garment (NASG) is a device developed as a temporizing measure to regain hemodynamic stability and allow patient transfer or definitive PPH treatment.(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 (1, 2). Outcomes used for this recommendation were the prioritized outcomes from the WHO recommendations on prevention and treatment of postpartum haemorrhage (2012).(3)

No RCTs were identified which reported on the use of pneumatic or non-pneumatic anti-shock garments for the treatment of PPH. Evidence from case series and before-and-after trials was evaluated. (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 use of non-pneumatic anti-shock garment (I) compared to no treatment (C) improve outcomes (O)?

Evidence summary

No RCTs were identified which reported on the use of pneumatic or non-pneumatic anti-shock garments for the treatment of PPH. Before-and-after studies and case series have, however, been published and summarized. The use of non-pneumatic anti-shock garments (NASGs) has been reported in two before-and-after studies in Egypt (990 women) and Nigeria (169 women). In the first study, uterine atony was present in 40 % of the cases, and in 35% of the cases in the second.(5,6)

Women treated with NASGs in the Egyptian study had a reported total mean measured blood loss significantly lower during the intervention phase than during the pre-intervention phase (253.2 ml versus 378.9 ml; Pb0.01). A similar lower total mean measured blood loss was also observed between the phases in the Nigerian study (73.5 ml versus 253 ml).

Maternal mortality was significantly lower in the intervention phase than in the pre-intervention phase (7 deaths [8.1%] versus 21 deaths [25.3%]; RR 0.32 [95% CI, 0.14 to 0.72]) in the Egyptian study but not in the Nigerian study (RR 0.46 [95% CI, 0.17 to 1.27]). In both studies, the risk of blood transfusion was not statistically significantly different.

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.

Related links


Managing Complications in Pregnancy and Childbirth: A guide for midwives and doctors

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

Related resources

VIDEO: Active management of third stage of labour

Education material for teachers of midwifery. Managing postpartum haemorrhage.

Research implications

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

References

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Can the Non-pneumatic Anti-Shock Garment (NASG) reduce adverse maternal outcomes from

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