WHO recommendation against routine antibiotic prophylaxis for women undergoing operative vaginal birth

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Recommendation

Routine antibiotic prophylaxis is not recommended for women undergoing operative vaginal birth.

(Very low - quality evidence, conditional recommendation)

Publication history

First published: September 2015

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Assessed as up-to-date: September 2015

Remarks

- Operative vaginal birth” is the term used to describe delivery of the fetal head assisted by either vacuum extractor or forceps.
- Prophylactic antibiotics may be useful for other maternal conditions that could result from prolonged second stage of labour or the use of an instrument for vaginal birth (e.g. third- or fourth-degree perineal tear).

Background

Bacterial infections during labour and the puerperium are among the leading causes of maternal mortality worldwide, accounting for about one tenth of the global burden of maternal deaths.(1, 2) While the number of deaths arising from these infections has decreased considerably in high-income settings, the situation has not improved in resource-limited settings. Most of the estimated 75,000 maternal deaths occurring worldwide yearly as a result of infections are recorded in low-income countries.(3) Although the reported incidence in high-income countries is relatively low (between 0.1 and 0.6 per 1000 births), it is nonetheless an important direct cause of maternal mortality.(3, 4)

Apart from deaths and acute morbidities associated with infections during or following childbirth, long-term disabilities such as chronic pelvic pain, fallopian tube blockage and secondary infertility can also occur. Maternal infections around childbirth also have a considerable impact on newborn mortality, and an estimated 1 million newborn deaths are associated with such infections annually.(5, 6) In addition, infection-related morbidities and prolonged hospitalization can interfere with mother–infant bonding in the first days after birth.
Methods

The recommendation was developed using standardized operating procedures in accordance with the process described in the “WHO handbook for guideline development”, guided by the GRADE approach.(7) Outcomes used for this recommendation were aligned with the prioritized outcomes from the WHO recommendations on prevention and treatment of maternal peripartum infections (2015).(8)

A Cochrane systematic review was conducted on the routine administration of prophylactic antibiotics to women undergoing operative vaginal birth (vacuum or forceps).(9) In the review, randomized controlled trials relevant to the key question were screened by review authors, and data on relevant outcomes and comparisons were extracted. Evidence profiles (in the form of GRADE tables) were prepared for comparisons of interest, including the assessment and judgments for each outcome, and the estimated risks.

WHO convened a Guideline Development Group (GDG) meeting on recommendations on prevention and treatment of maternal peripartum infections in September 2015, where this recommendation was developed. The GDG comprised of a group of independent experts, who 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 of stakeholders, resource requirements, cost-effectiveness, acceptability, feasibility and equity, to formulate the recommendation. Remarks were added to clarify the recommendation, and aid implementation.

Recommendation question

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

- Among women undergoing operative vaginal birth (P), does routine antibiotic prophylaxis (I), compared with no prophylaxis (C), prevent infectious morbidities and improve outcomes (O)?

Evidence Summary

Evidence regarding the routine administration of prophylactic antibiotics to women undergoing operative vaginal birth (vacuum or forceps) was extracted from a Cochrane systematic review.(9) Only one trial with a sample size of 393 women reported on critical outcomes. The trial was conducted in the USA. Women with evidence of other inflammatory infections or allergies to penicillin class of drugs were excluded.

The evidence was supplemented with another systematic review of non-randomized studies which included three retrospective cohort studies of 1293 women.(10) Two of the studies were performed in Germany, and one in France.

Antibiotic prophylaxis versus no treatment (randomized controlled trials) (EB Table 11a)

- The trial investigated the use of 2 g of cefotetan intravenously after umbilical cord clamping versus no treatment in women undergoing instrumental deliveries.
- The trial found no differences between the treatment and control groups regarding the incidence of endomyometritis (RR 0.07; 95% CI 0.00 to 1.21) or length of maternal hospital stay (MD 0.09 days; 95% CI -0.23 to 0.41).
- The included trial did not report any other critical outcomes.

Antibiotic prophylaxis versus no treatment (nonrandomized studies) (EB Table 11b)

- Prophylactic antibiotic regimes varied between studies. One study used 4 g ampicillin or 4 g cephalexin or cefalotin, administered for at least five days. One study used 1 g of clamoxyxl administered intravenously during an intrauterine procedure or during umbilical cord clamping and repeated two and six hours later plus 0.5 g of ornidazole. One study used mebacid sulfamerazine or 2
g chloramphenicol daily for six to 10 days.

- There were no differences between the treated and untreated group in the incidence of endometritis (OR 0.67; 95% CI 0.07 to 6.04; 2 studies, 1091 women), maternal septicaemia (OR 0.32; 95% CI 0.01 to 7.90, 1 study, 336 women) or wound infection (episiotomy abscess) (OR 0.35; 95% CI 0.06 to 2.06; 2 studies, 540 women).

Implementation considerations

- The successful introduction of this recommendation into national programmes and health-care services depends on well-planned and participatory consensus-driven processes of adaptation and implementation. The adaptation and implementation processes may include the development or revision of existing national guidelines or protocols based on this recommendation.
- The recommendation should be adapted into a locally appropriate document that can meet the specific needs of each country and health service. Any changes should be made in an explicit and transparent manner.
- A set of interventions should be established to ensure that an enabling environment is created for the use of the recommendations, and that the behaviour of the healthcare practitioner changes towards the use of this evidence-based practice.
- In this process, the role of local professional societies is important and an all-inclusive and participatory process should be encouraged.

Research implications

The GDG did not identify further research priorities on this topic.

Related Links


Supporting systematic review:


Parsons AJQ, Chibueze CE, Ota E, Swa T, Oladapo OT, Mori R. Routine administration of prophylactic antibiotics for preventing infectious morbidities in women undergoing operative vaginal deliveries: a systematic review and meta-analysis. 2015.(unpublished)

References


10. Parsons AJQ, Chibueze CE, Ota E, Swa T, Oladapo OT, Mori R. Routine administration of prophylactic antibiotics for preventing infectious morbidities in women undergoing operative vaginal deliveries: a systematic review and meta-analysis. 2015.(unpublished)

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