World Health Organization

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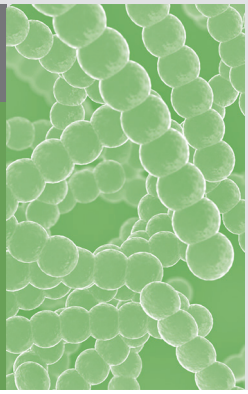
WHO recommendations for prevention and treatment of maternal peripartum infections

Executive summary

Guidance for effective interventions to reduce the global burden of maternal infections and their complications around the time of childbirth



Introduction

Bacterial infections around the time of childbirth account for about one tenth of the global burden of maternal death. Although the majority of these deaths are recorded in low-income countries, childbirth-related infections are also an important direct cause of maternal mortality in high-income countries. Apart from severe morbidity and death, women who experience peripartum infections are also prone to long-term disabilities such as chronic pelvic pain, fallopian tube blockage and secondary infertility. Maternal infections before or during childbirth are also associated with an estimated 1 million newborn deaths annually.

Several factors have been associated with increased risk of maternal peripartum infections, including pre-existing maternal conditions (e.g. malnutrition, diabetes, obesity, severe anaemia, bacterial vaginosis, and group B streptococcus infections) and spontaneous or provider-initiated conditions during labour and childbirth (e.g. prolonged rupture of membranes, multiple vaginal examinations, manual removal of the placenta, and caesarean section). As such, the strategies to reduce maternal peripartum infections and their short- and long-term complications have been largely directed at preventive measures where such risk factors exist.

Globally, the most common intervention for preventing morbidity and mortality related to maternal infection is the use of antibiotics for prophylaxis and treatment. However, the misuse of antibiotics for obstetric conditions and procedures that are thought to carry risks of maternal infection is common in clinical practice. Such inappropriate use of antibiotics among women giving birth has implications on global efforts to contain the emergence of resistant bacteria strains and, consequently, on global health. The *WHO global strategy for containment of antimicrobial resistance* underscores the importance of appropriate use of antimicrobials at different levels of the health system to reduce the impact of antimicrobial resistance, while ensuring access to the best treatment available. Therefore, appropriate guidance for health professionals and policy-makers on the need for antibiotics – and the type of antibiotics – for the prevention and treatment of maternal peripartum infections would align with the WHO strategy and, ultimately, improve maternal and newborn outcomes.

The goal of the present guideline is to consolidate guidance for effective interventions that are needed to reduce the global burden of maternal infections and their complications around the time of childbirth. This forms part of WHO's efforts to improve the quality of care for leading causes of maternal death, especially those clustered around the time of childbirth, in the post-MDG era. Specifically, it presents evidence-based recommendations on interventions for preventing and treating genital tract infections during labour, childbirth or the puerperium, with the aim of improving outcomes for both mothers and newborns.

Target audience

The primary audience for this guideline is health professionals who are responsible for developing national and local health protocols and policies, as well as managers of maternal and child health programmes and policy-makers in all settings.

The guideline will also be useful to those directly providing care to pregnant women, including obstetricians, midwives, nurses and general practitioners. The information in this guideline will be useful for developing job aids and tools for both pre- and inservice training of health workers to enhance their delivery of care to prevent and treat maternal peripartum infections.

Guideline development methods

The development of this guideline was guided by standard operating procedures in accordancewith the process described in the *WHO handbook for guideline development*. Briefly, these included:
(i) identification of priority questions and critical outcomes; (ii) retrieval of the evidence;
(iii) assessment and synthesis of the evidence;
(iv) formulation of recommendations; and
(v) planning for the dissemination, implementation, impact evaluation and updating of the guideline.The scientific evidence supporting the recommendations was synthesized using the Grading of Recommendations Assessment, Developmentand Evaluation (GRADE) approach. Up-to-date systematic reviews were then used to prepare evidence profiles for the prioritized questions. Then WHO convened a technical consultation in April 2015 where an international group of experts – the Guideline Development Group (GDG) – formulated and approved the recommendations based on the synthesized evidence.

Recommendations

The WHO technical consultation adopted 20 recommendations covering prioritized questions related to the prevention and treatment of maternal peripartum infections. The prevention aspect of the recommendations focuses on the routine use of minor procedures (e.g. perineal/pubic shaving), antimicrobial agents for vaginal and caesarean birth, and antibiotic prophylaxis for preventing infection in infection-prone conditions and obstetric procedures (prelabour rupture of membranes, meconium- stained amniotic fluid, perineal tears, manual removal of the placenta, operative vaginal birth and caesarean section). The recommendations on treatment of maternal peripartum infections are specific to antibiotic management of chorioamnionitis and postpartum endometritis. For each recommendation, the overall quality of evidence was graded as very low, low, moderate or high. The GDG qualified the direction and strength of each recommendation by considering this quality of evidence and other factors, including the balance between benefits and harms, values and preferences of stakeholders, and resource implications of the intervention. To ensure that each recommendation is correctly understood and applied in practice, the contributing experts provided additional remarks as needed. Guideline users should refer to these remarks and the evidence summaries in the full version of the guideline if there is any doubt as to the basis of any of the recommendations and how to best implement them.

The WHO recommendations on interventions to prevent and treat maternal peripartum infections are summarized in the table below. In accordance with WHO guideline development procedures, these recommendations will be constantly reviewed and updated following identification of new evidence, with major reviews and updates at least every five years. WHO welcomes suggestions regarding additional questions for inclusion in future updates of the guideline.

Summary list of WHO recommendations for prevention and treatment of maternal peripartum infections

Context	Recommendations	Strength of recommendation and quality of the evidence[a]
Prevention of peripartum infections	1. Routine perineal/pubic shaving prior to giving vaginal birth is not recommended.	**Conditional recommendation** based on very low-quality evidence
	2. Digital vaginal examination at intervals of four hours is recommended for routine assessment of active first stage of labour in low-risk women.	**Strong recommendation** based on very low-quality evidence
	3. Routine vaginal cleansing with chlorhexidine during labour for the purpose of preventing infectious morbidities *is not* recommended.	**Conditional recommendation** based on moderate-quality evidence
	4. Routine vaginal cleansing with chlorhexidine during labour in women with group B Streptococcus (GBS) colonization *is not* recommended for prevention of early neonatal GBS infection.	**Conditional recommendation** based on very low-quality evidence
	5. Intrapartum antibiotic administration to women with group B Streptococcus (GBS) colonization is recommended for prevention of early neonatal GBS infection.	**Conditional recommendation based on very low-quality evidence**
	6. Routine antibiotic prophylaxis during the second or third trimester for all women with the aim of reducing infectious morbidity *is not* recommended.	**Strong recommendation based** on very low-quality evidence
	7. Routine antibiotic administration *is not* recommended for women in preterm labour with intact amniotic membranes.	**Strong recommendation based** on moderate-quality evidence
	8. Antibiotic administration is recommended for women with preterm prelabour rupture of membranes.	**Strong recommendation based** on moderate-quality evidence
	9. Routine antibiotic administration *is not* recommended for women with prelabour rupture of membranes at (or near) term.	**Strong recommendation based** on low-quality evidence
	10. Routine antibiotic administration *is not* recommended for women with meconium-stained amniotic fluid.	**Conditional recommendation** based on low-quality evidence
	11. Routine antibiotic prophylaxis is recommended for women undergoing manual removal of the placenta.	**Strong recommendation based** on very low-quality evidence
	12. Routine antibiotic prophylaxis *is not* recommended for women undergoing operative vaginal birth.	**Conditional recommendation** based on very low-quality evidence
	13. Routine antibiotic prophylaxis is recommended for women with a third- or fourth-degree perineal tear.	**Strong recommendation** based on very low-quality evidence
	14. Routine antibiotic prophylaxis *is not* recommended for women with episiotomy.	**Strong recommendation** based on consensus view
	15. Routine antibiotic prophylaxis *is not* recommended for women with uncomplicated vaginal birth.	**Strong recommendation** based on very low-quality evidence

Context	Recommendations	Strength of recommendation and quality of the evidence[a]
Prevention of peripartum infections ***(continued)***	16. Vaginal cleansing with povidone-iodine immediately before caesarean section is recommended.	**Conditional recommendation** based on moderate-quality evidence
	17. The choice of an antiseptic agent and its method of application for skin preparation prior to caesarean section should be based primarily on the clinician's experience with that particular antiseptic agent and method of application, its cost and local availability.	**Conditional recommendation** based on low-quality evidence
	18.0 Routine antibiotic prophylaxis is recommended for women undergoing elective or emergency caesarean section.	**Strong recommendation** based on moderate-quality evidence
	18.1 For caesarean section, prophylactic antibiotics should be given prior to skin incision, rather than intraoperatively after umbilical cord clamping.	**Strong recommendation** based on moderate-quality evidence
	18.2 For antibiotic prophylaxis for caesarean section, a single dose of first-generation cephalosporin or penicillin should be used in preference to other classes of antibiotics.	**Conditional recommendation** based on very low-quality evidence
Treatment of peripartum infections	19. A simple regimen such as ampicillin and once-daily gentamicin is recommended as first-line antibiotics for the treatment of chorioamnionitis.	**Conditional recommendation** based on very low-quality evidence
	20. A combination of clindamycin and gentamicin is recommended as first-line antibiotics for the treatment of postpartum endometritis.	**Conditional recommendation** based on very low-quality evidence