# What treatment approach to intrapartum maternal fever has the best fetal outcomes?

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## Evidence-based answer

A combination of beta-lactam and aminoglycoside antibiotics are the recommended empiric agents for the treatment of acute chorioamnionitis, given that no head-to-head trials exist (strength of recommendation [SOR]: **C**, based on expert opinion). Intrapartum antibiotic treatment is not superior to postpartum antibiotics for reducing neonatal sepsis and pneumonia (SOR: **C**, based on patient-oriented, underpowered randomized trials).

## Clinical commentary

**Carefully follow laboring patients with fever for other signs of chorioamnionitis**

The data on the best antibiotic treatment of clinical chorioamnionitis remains as slim as ever, it appears. But since experts continue to recommend potentially toxic gentamicin as part of therapy, you should carefully monitor laboring patients at term who develop a fever for the development of other diagnostic signs of chorioamnionitis. While maternal and fetal tachycardia are frequently caused by conditions other than infection, their appearance in a febrile gravida should prompt full chorioamnionitis therapy (even in patients already on empiric antibiotics for group B streptococci). With epidural anesthesia, uterine tenderness is an unreliable sign of infection. Purulent amniotic fluid is a late sign and rarely contributes clinically.

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## Evidence summary

Acute chorioamnionitis (or intraamniotic infection) poses a high risk of maternal and neonatal morbidity. Neonatal sepsis or pneumonia occurs in up to 24% of infants born to mothers with chorioamnionitis;[1] 1% to 2% of pregnancies complicated by chorioamnionitis end in neonatal death.[1,2]

Acute chorioamnionitis is defined as intrapartum maternal fever and maternal tachycardia, fetal tachycardia, uterine tenderness, or purulent amniotic fluid.[1,3] Antibiotic treatment of acute chorioamnionitis is widely accepted, yet *in vivo* studies to determine the most effective empiric antibiotic regimens are lacking.

### Intrapartum antibiotics probably reduce sepsis

Although few well-designed trials stand out, a Cochrane review[4] summarizing 2 relevant studies is available. Gibbs et al[3] performed an underpowered, randomized comparative trial of intrapartum vs postpartum treatment of chorioamnionitis,

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**Tachycardia in a febrile pregnant woman should prompt treatment for chorioamnionitis, even if she's already on antibiotics for group B strep**

with both groups (45 patients total) receiving ampicillin 2 g IV every 6 hours plus gentamicin 1.5 mg/kg IV every 8 hours.[3] Those women who underwent cesarean section also received clindamycin 900 mg IV every 8 hours starting at cord clamping. In this study, investigators reported neonatal sepsis was significantly reduced with intrapartum treatment (0 vs 21%; *P*=.03, number needed to treat=4.8), as were neonatal hospital stays (3.8 vs 5.7 days; *P*=.02), regardless of delivery method. The study had been planned for 92 patients; it was stopped early (n=48) after an interim analysis.

Because of the small sample size, other findings from the study must be viewed with caution. Intrapartum treatment with antibiotics was associated with a "significant" clinical reduction in neonatal sepsis (relative risk [RR]=0.08; 95% confidence interval [CI], 0.00–1.44) and pneumonia (RR=0.15; 95% CI, 0.01–2.92) compared with treatment given immediately postpartum; however, neither value was truly statistically significant according to the Cochrane review.[4]

The research suggests a potential benefit to adding clindamycin to ampicillin and gentamicin. In an effort to test this, 1 study randomized 133 women into 2 arms—treatment with ampicillin, gentamicin, and clindamycin compared with ampicillin and gentamicin alone—and found no additional benefit in regards to neonatal sepsis (RR=2.16; 95% CI, 0.20–23.21) or neonatal death (RR=0.72; 95% CI, 0.12–4.16).[1] There was a trend towards a decrease in the incidence of postpartum endometritis in women who received ampicillin, gentamicin, and clindamycin, but this did not reach statistical significance (RR=0.54; 95% CI, 0.19–1.49).[4]

**FAST** TRACK

**There was a downward trend in the incidence of postpartum endometritis in women who received ampicillin, gentamicin, and clindamycin**

## Recommendations from others

A 2002 bulletin from American College of Obstetricians and Gynecologists (ACOG) and the American Academy of Pediatrics[5] recommended the combination of ampicillin 2 gm IV every 4 to 6 hours or penicillin 5 million units IV every 4 to 6 hours, plus an aminoglycoside (such as gentamicin 1.5 mg/kg IV every 8 hours), since this regimen provides appropriate coverage for typical organisms associated with acute chorioamnionitis. At the time the bulletin was published, the use of single daily dosing of aminoglycoside did not have sufficient studies to back its use. In addition, ACOG recommends adding clindamycin, metronidazole, or an extended-spectrum third-generation cephalosporin to the treatment regimen if cesarean section is required, to provide coverage for anaerobic organisms. They recommend clindamycin 900 mg IV every 8 hours to replace amoxicillin in penicillin-allergic patients. The Nottingham Guideline Development Group recommends amoxicillin 2 gm IV initially then 1 gm every 8 hours, and in place of gentamicin, recommends metronidazole 500 mg IV, every 8 hours (or 1 gm PR twice a day).[6] Both recommendations suggest clindamycin 900 mg IV every 8 hours to replace amoxicillin in penicillin-allergic patients. For patients with nonanaphylactic reactions to penicillin, they recommend cefotaxime 1 g IV every 8 hours. ■

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