

Timing of Prophylactic Antibiotics during Cesarean: a Meta-analysis up to 2012

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Objective: To summarize the recent studies' results of the timing of perioperative antibiotics at cesarean delivery and determine the optimal timing of prophylactic antibiotic in cesarean delivery.

Method: We searched the articles published in MEDLINE (2008.1-2012.2), EMBase (2008.1-2012.2) and Cochrane Central Register of Controlled Trials (Issue 2 of 12, Feb 2012). Only randomized controlled trials (RCTs) that compared prophylactic antibiotic administration before skin incision or after clamping the umbilical cord were included.

Result: 7 RCTs were included, which contained 1354 women received prophylactic antibiotics before skin incision and 1246 women after clamping the umbilical cord. The meta-analysis shows that preoperative prophylactic antibiotics can reduce the risk of postpartum endometritis (RR=0.57, 95% CI 0.36, 0.90), wound infection (RR=0.67, 95%CI 0.42,1.07), and total infectious morbidity (RR=0.70, 95% CI 0.53, 0.93), had no significant influence on neonatal sepsis (RR=0.86,95% CI 0.51,1.47), sepsis workups (RR=0.93,95% CI 0.72,1.21), or neonatal intensive care unit admissions (RR=0.69,95% CI 0.94,1.34) compared to after clamping the umbilical cord.

Conclusion: The advantage of antibiotic administration before skin incision in postpartum infection was reducing in comparisons with the meta-analysis in 2008. More RCTs which considered the infant's bacterial flora as measurement were needed to determine whether the difference was existed.

Key words: antibiotics, cesarean delivery, endometritis, meta-analysis