

# The Efficacy of Ampicillin Compared with Ceftriaxone on Preventing Cesarean Surgical Site Infections

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## ABSTRACT

**Background:** Cesarean surgical site infections (SSIs) can be prevented by proper preoperative antibiotic prophylaxis. Differences in clinical practice remain according to obstetricians' preference despite clear guidelines on the preoperative antibiotic prophylaxis. The aim of the study was to compare the efficacy of ampicillin and ceftriaxone prescribed to prevent cesarean SSIs.

**Methods:** This prospective cohort study was conducted at a tertiary hospital in Thailand from January 2007 to December 2012. Data from the medical record database were collected. Propensity scores for ceftriaxone treatment were calculated from potential influencing confounders. The cesarean SSI rates of ceftriaxone versus those of the ampicillin treatment group were estimated by multilevel mixed-effects Poisson's regression nested within propensity score-class and were expressed as rate ratio (RR).

**Results:** Data of 4,149 cesarean patients were collected. Among these, 911 patients received ceftriaxone whereas 3,238 patients received ampicillin as preoperative antimicrobial prophylaxis. Total cesarean SSIs, incisional SSIs, and organ/space SSIs in ceftriaxone group were 1.3%, 0.1%, and 1.2% compared to 4.1%, 1.2%, and 2.9% in ampicillin group. After adjusted for confounding factors, the rate ratios of total cesarean SSIs, incisional SSIs, and organ/space SSIs in the ceftriaxone group compared with the ampicillin group were not different (RR, 1.10; 95% CI 0.58-2.08), (RR, 0.23; 95% CI 0.03-1.78), and (RR, 1.62; 95% CI 0.83-3.18), respectively.

**Conclusions:** The efficacy of ampicillin and ceftriaxone to prevent cesarean SSIs was similar indicating that ampicillin may be used as antibiotic prophylaxis in cesarean section. Well-designed randomized controlled trial is needed to affirm this finding.

**Keywords:** Ampicillin, Antibiotic prophylaxis, Ceftriaxone, Cesarean infections, Propensity score

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