

A Randomized Controlled Trial on the Efficacy and Safety Profile of Single Oral Dose of Fosfomycin tromethamine versus Cefuroxime axetil in the treatment of Asymptomatic Bacteriuria among Pregnant Women

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ABSTRACT

Introduction: Urinary tract infections are one of the most common illnesses among women during pregnancy. The pregnancy-induced physiological and hormonal changes predispose them to develop these kinds of infection. If left untreated, UTI in pregnancy may lead to adverse fetal outcomes. The fosfomycin derivative, Fosfomycin tromethamine, a broad-spectrum bactericidal antibiotic has been approved as an oral single-dose treatment for acute uncomplicated cystitis. **General Objective:** To determine the efficacy and safety profile of a single 3-g dose of Fosfomycin tromethamine versus Cefuroxime axetil in the treatment of asymptomatic bacteriuria among pregnant patients. **Methods:** This is a randomized controlled trial involving 70 pregnant women, on their second to third trimester of pregnancy diagnosed with asymptomatic bacteriuria through urine cultures. Pathogens were tested for sensitivity to both Fosfomycin and Cefuroxime. Each participant was randomly assigned to either Fosfomycin group (n 35) or Cefuroxime group (n 35). Patients were followed-up during and after treatment to check for any side effects. Post-treatment urine cultures were performed a week after treatment. **Results:** The most common isolated pathogen on the two groups was *Escherichia coli* which was present in 64.29%, followed by *Klebsiella pneumoniae* (17.14%) and *Enterococcus faecalis* (10%). Three participants (4.2%) had an unfavorable response to treatment. Fosfomycin showed a 100% eradication rate compared to Cefuroxime which has 91.4% eradication rate (P value 0.18). Presence of drug resistant strains missed during conventional testing due to the heterogeneity of resistance (in vivo resistance) could have caused the difference. The relative risk of nausea is 14 times higher in the Fosfomycin group than in the Cefuroxime group (1.99-100.77). **Conclusion:** There was no statistically significant difference in terms of efficacy between Fosfomycin and Cefuroxime. There is a higher risk of nausea with Fosfomycin than with Cefuroxime. Considering other treatment such as Fosfomycin, may help decrease resistance to the more common antibiotics used in the treatment of ASB in pregnancy.

Acinetobacter Colonization in Normal Labor and Preterm Premature Rupture of Membranes

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ABSTRACT

Objective: Several anecdotal reports suggest that infection with *Acinetobacter baumannii* in pregnancy can result in adverse maternal and neonatal effects. These are preterm premature rupture of membranes (PPROM), ascending infection and chorioamnionitis with fetal effects of prematurity and complications including morbidity and mortality. We conducted a prospective case-control study to determine the maternal and neonatal effects of *Acinetobacter baumannii* infection in pregnant women with PPRM as compared to those with term labor. **Methods:** 104 women with PPRM and 111 women in normal labour had a vaginal swab cultures taken prospectively at the time of admission into the labor room. Neonatal swab cultures were taken from the axilla and ear of the newborn. All swabs were cultured on-to *Acinetobacter* selective agars and incubated for 24 hours at 37°C. All red colonies on CHROMagar, suspected of *Acinetobacter* were sub-cultured and identified by using the VITEK card (ID-GNA, Biomeriux, USA) on VITEK* 2 automated platform. **Results:** Sixteen cases were *Acinetobacter baumannii* positive, including 8 among PPRM (7.69%), and 8 women in normal labor (7.48%). Among the PPRM cases, 4 of the 8 culture positive cases were delivered by a caesarean section, while all 8 of the term women were delivered normally (p value 0.02). None of the pregnant women developed any evidence of sepsis. Four babies of mothers with membrane rupture, and two babies of normal labour mothers had positive cultures. None of the newborns developed sepsis. **Conclusions:** Our data suggests that *Acinetobacter* infection is not associated with adverse pregnancy outcomes, in both normal labour as well as women with premature preterm rupture of membranes.