

Vathana M, Muhunthan K. A Randomized Control Trial of Single Dose versus 24 Hours IV Antibiotic Prophylaxis in Caesarean Delivery – An Attempt to Reduce Antibiotic Use. FIGO-SAFOG-SLCOG scientific conference. Sri Lanka Journal of Obstetrics & Gynaecology 2014; Vol. 36 (suppl. 1);13.

A Randomized Control Trial of Single Dose versus 24 Hours IV Antibiotic Prophylaxis in Caesarean Delivery - An Attempt to Reduce Antibiotic Use.

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Introduction: Prophylactic use of antibiotics in women undergoing caesarean section reduces the risk of infection-related

complications. However relative effectiveness of dosage regimen is a matter of controversy.

Objectives: To compare the efficacy and safety of single combined dose of intravenous Cefuroxime and Metronidazole immediately after cord clamping against conventional multiple doses regimen to reduce postoperative infectious morbidity following the caesarean deliveries.

Method: This prospective randomized, non-blinding clinical trial consisting of 369 women undergoing caesarean section, randomly received either single combined prophylactic dose of Cefuroxime with Metronidazole after umbilical cord clamping or multiple postoperative doses of antibiotics for 24hours based on the standard protocol of the hospital. All potentially infected cases were excluded from this study. This study was conducted at Teaching Hospital, Jaffna from March to September 2013. These patients were followed prospectively for infectious and fetal complications till discharge and verbal enquiry or direct observation done during suture removal on 7th to 8th post operative day. The efficacy was measured in terms of febrile morbidity, surgical site infection, endometritis, urinary tract infection, other infectious morbidity along with duration of hospital stay. Chisquare analysis (Fisher's Exact Test) of variance were performed with equivalence margin was set at 5% (p value).

Results: 369 women were enrolled in this study, in whom 185(50.1%) randomly received single combined prophylactic dose of Cefuroxime with Metronidazole and 184(49.8%) received multiple postoperative doses of antibiotics for 24hours. The randomization was proper, as the distribution of various demographic and other baseline characteristics had a p-value of > 0.05. The incidence rates of post-caesarean infectious morbidity were 1.8% and 3.2% in a single dose and multiple dose regimens respectively with the incidence rate ratio (IRR) of 0.3 [95% CI 0.065 – 1.63] p-value = 0.284]. There were no statistically significant differences in febrile morbidity (p=0.28), wound infections (p=0.123) and median duration of hospital stay (p = 0.329) in both the groups.

Conclusions: Single combined prophylactic antibiotic usage immediately after cord clamping is equally effective as multiple conventional regimen following the cesarean deliveries in prevention of infectious morbidity and duration of hospital stay, with benefit of reduce financial burden, burden on hospital resources in terms of human resource, time and equipment and also reduces the emergence of drug selective resistant bacteria.