Abstract # 146

Prophylactic Oxygen for the Prevention of Post-Cesarean Infectious Morbidity: A Randomized Controlled Trial

Abstract Type: Original Research
Barbara L. Leighton, M.D.1; Christina M. Scifres, M.D.2; Patricia J. Fogertey, R.N., M.S.N.1; George A. Macones, M.D.1; David M. Stamilio, M.D., M.S.C.E.1
Washington University in Saint Louis School of Medicine1; University of Pittsburgh School of Medicine2

Objective: To investigate whether supplemental oxygen during cesarean delivery and for two hours afterwards reduces the incidence of post-cesarean infectious morbidity.

Study Design: A randomized, controlled trial conducted at a single medical center from 2008-2010. Women undergoing cesarean delivery were randomized to receive either two liters of oxygen via nasal cannula during cesarean delivery only (standard care) or 10L oxygen via non-rebreathing mask (intervention group) during cesarean delivery and for two hours afterward. Women undergoing scheduled or intrapartum cesarean delivery were eligible. Demographic, intrapartum and delivery data were collected prospectively and women were followed for one month post-operatively. Our primary composite outcome was maternal infectious morbidity, including endometritis and wound infection. Bivariate analyses were conducted using the intent to treat principle. We estimated that 556 patients were needed to achieve 80% power to detect a 50% reduction in morbidity assuming a 0.05 α-error and 15% baseline morbidity rate.

Results: 585 women were included in the final analysis. Demographic data was similar between groups. Women in the intervention group were more likely to have had rupture of membranes (29.2 vs. 19.9%, p<0.01) or labor prior to cesarean delivery (40.0% vs. 32.7%, p=0.07). There was no significant difference in the rate of infectious morbidity between the standard care and intervention groups (RR 1.4, 95% CI 0.9-2.3). Analyses stratified on the occurrence of rupture of membranes or labor revealed no difference in morbidity between the study groups within strata. Infants of mothers in the intervention group were more likely to receive antibiotics after birth (p=0.03). The incidence of neonatal sepsis was similar between groups (p=0.19).

Conclusion: Increasing oxygen delivery from 2 liters via nasal cannula to 10 liters via non-rebreathing mask does not reduce the rate of post-cesarean infectious morbidity including endometritis and wound infection.