34 Prophylactic oxygen for the prevention of post-cesarean infectious morbidity: a randomized controlled trial

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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 academic medical center between 2008-2010. Women undergoing cesarean were randomized to receive either two liters of oxygen via nasal cannula during cesarean delivery only (standard care) or 10L oxygen via non-rebreather mask (intervention group) during cesarean and for two hours afterward. Women undergoing scheduled or intrapartum cesarean were eligible. Demographic, intrapartum and delivery data were collected prospectively and women were followed for one month post-operatively. Our primary composite outcome was infectious morbidity, including endometritis and wound infection. Bivariate analyses were conducted using the intent to treat principle. The a priori sample size calculation estimated the study has 80% power to detect a 50% reduction in morbidity assuming a 0.05 a-error and 15% baseline morbidity rate.

RESULTS: 585 women were included in the final analysis. Study groups were similar with regard to demographic data. Women in the intervention group were more likely to have had rupture of membranes prior to cesarean (29.2 vs 19.9%, $p<0.01$) and more often experienced labor prior to cesarean (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 (table). Analyses stratified on the presence of rupture of membranes or labor revealed no difference in morbidity between the study groups within strata.

CONCLUSIONS: Supplemental oxygen does not reduce the rate of post-cesarean infectious morbidity including endometritis and wound infection.

Outcome	Standard Care (n=297)	Intervention Group (n=288)	Relative Risk
Composite Morbidity	26 (8.75%)	35 (12.2%)	RR 1.4 (95% CI 0.86-2.25)
Endometritis	2 (0.6%)	7 (2.4%)	RR 3.6 (95% CI 0.76-17.23)
Wound infection	26 (8.75%)	33 (11.5%)	RR 1.3 (95% CI 0.80-2.13)

35 Placental cord insertion and birthweight discordance in twin pregnancies: results of the national prospective EsPRIT trial

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OBJECTIVE: To evaluate the impact of non-central placental cord insertion site on birthweight discordance in monochorionic and dichorionic twin pregnancies.

STUDY DESIGN: This national prospective trial recruited 981 twin pregnancies in 8 tertiary centres. All placentas were examined following delivery according to a defined protocol. Placental cord insertion (PCI) was documented as central (>2cm from placental margin), marginal (<2cm from placental margin) or velamentous. For the purpose of this analysis birthweight discordance was defined as 20% or greater. Rates of central and non-central (marginal or velamentous) cord insertion were compared in smaller twins of discordant twin pairs and their larger co-twins and concordant controls.

RESULTS: 816 twin pairs were evaluated, 165 monochorionic (MC) and 651 dichorionic (DC) twins. Overall rates of discordant growth did not differ significantly in MC and DC cohorts (19.4% vs 16.4%, $p=0.42$). In the entire cohort non-central cord insertion was found to be significantly more frequent in smaller twins of discordant pairs than in the larger co-twins or concordant twins (29.8% vs 19.1%, $p=0.004$). When stratified by chorionicity this observation held true for MC twins, with a non-central cord insertion documented in 50% of smaller twins of discordant pairs compared to 29.5% of controls ($p=0.026$). Discordant DC twins showed a trend towards increased rates of non-central cord insertion in the smaller twin but this did not reach statistical significance ($P = 0.062$).

CONCLUSIONS: Non-central cord insertion and resultant unequal placental sharing contribute significantly to the etiology of birthweight discordance in MC twin pregnancies. Antenatal sonographic delineation of placental cord insertion may be a valuable tool in prediction of birthweight discordance in these high-risk cases.