

Delayed umbilical cord clamping effects on caesarean delivery neonates under general anaesthesia: A prospective cohort study

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Abstract

Objective: To investigate the effect of delayed umbilical cord clamping on neonatal outcomes following caesarean delivery under general anaesthesia. Design: Prospective cohort study. Setting: West China Second University Hospital Sample: Neonates born by caesarean delivery under general anaesthesia after 35 gestational weeks. Methods: Neonates were assigned to Groups A or B if they received early or delayed cord clamping, respectively. Main Outcome Measures: Umbilical arterial blood gas analysis indicators, Apgar scores, resuscitation procedure incidence, peak bilirubin, and neonatal morbidity were compared between the two groups. Results: Group A had 29 and Group B had 21 participants. There were no significant differences in any of the outcome measures between the two groups. We classified five periods during caesarean delivery: aesthetic induction (Period 1), skin incision (Period 2), myometrium incision (Period 3), delivery of the neonate (Period 4), and time of cord clamping (Period 5). One-minute Apgar scores were negatively correlated with cord-clamping time ($r=-0.426$, $P=0.002$). Peak bilirubin value was correlated with Periods 2, 3, and 5 ($r=0.347$, $P=0.014$; $r=0.411$, $P=0.003$; $r=-0.289$, $P=0.042$, respectively). The remaining secondary outcomes were not correlated with any of the five periods. The peak bilirubin value was $9.712+0.006 \times \text{Period 2}+0.006 \times \text{Period 3}-0.026 \times \text{Period 5}$ ($R^2=0.313$). Conclusions: In caesarean delivery under general anaesthesia, delayed cord clamping within a certain period may partially prolong the duration of neonatal exposure to general anaesthesia drugs. However, delayed cord clamping is a safe and feasible technique for clinical application.

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