

Title of Abstract:

Acute Kidney Injury in Preterm Infants < 34 Weeks Gestation who Received Delayed Cord Clamping for 60s at Birth.

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Abstract Description:

Background: Delayed cord clamping (DCC) is known to increase circulating blood volume, cardiac output and improve mean systolic blood pressure. These factors affect Serum Creatinine (SCr) clearance and thus may influence the prevalence of Acute Kidney Injury (AKI). AKI is known to be prevalent in preterm infants but its occurrence in those who received DCC has not been established.

Objective: To describe the prevalence and risk factors for AKI in preterm infants < 34 weeks gestational age (GA) who received 60 seconds of DCC at the time of birth.

Methods: This is a single center retrospective analysis of preterm infants <34 weeks born between May 2013 and May 2016 who received 60 seconds of DCC at birth. Every available SCr data was collected from infant records from birth to NICU discharge. Neonatal Kidney Disease Improving Global Outcome (KDIGO) criteria was used to define AKI. We compared neonatal and maternal risk factors, neonatal outcomes in those infants with and without AKI using Chi Square, Fischer's Exact, and Wilcoxon Rank Sum test as appropriate. Multivariate regression was used to assess risk factors after adjusting for GA and Small for GA (SGA).

Results: A total of 198 infants were included in this study and 37% had AKI. The age of onset of AKI was median 2 days (IQR 0.5-16). GA, birth weight, SGA, C-section (CS), maternal hypertension, ibuprofen, gentamicin, vancomycin, 5minute APGAR, DR intubation, surfactant, transfusions, NEC and postnatal steroids were significantly associated with AKI (Table 1). However maternal hypertension, and SGA were the only risk factors that were significantly

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associated with AKI after adjusting for GA (Table 2). Maternal hypertension is not significantly associated with AKI when adjusted for both GA and SGA status.

Conclusion: The prevalence of AKI in our series of infants receiving 60 seconds DCC is 37%. GA and SGA status are significant risk factors of AKI in preterm infants. Our experience does not implicate many of the traditional risk factors for AKI in this population. Whether this is attributable to DCC or other patient or clinical practice factors needs further study.

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