

## C12

### **Title: LONG TERM RENAL OUTCOMES IN CHILDREN WITH ACUTE KIDNEY INJURY POST CARDIAC SURGERY [ROCKS TRIAL]- RESULTS OF ISN CLINICAL RESEARCH PROGRAM GRANT**

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**Introduction:** Studies have shown that acute kidney injury (AKI) is associated with poor short-term outcomes: mortality, longer hospital stay, ventilation duration. Long-term renal outcomes of survivors of pediatric AKI haven't been studied extensively.

**Objective:** Study long-term renal outcomes and kidney injury markers in pediatric patients following cardiac bypass surgery.

**Methods:** Prospective study of infants and children who underwent cardiac bypass surgery (2010 - 2017) were evaluated. Exclusion criteria: pre-existing CKD, history of hypertension, previous AKI. Evaluation of GFR (measured by Schwartz formula and Cystatin-C), serum blood urea nitrogen, serum creatinine, urine albumin/creatinine ratio, serum cystatin-C levels, serum Beta-trace protein. Urinary biomarkers: NGAL, L-FABP, KIM-1, IL-18.

**Results:** 9.8% of 2,035 patients developed AKI postoperatively. Forty-four patients had a long-term follow up and met inclusion criteria; they were matched to 49 controls. Patients who developed AKI had higher baseline serum creatinine, higher postoperative serum creatine, longer ICU stay, weight gain, longer CPB time, higher sepsis rate. Patients with postoperative AKI had higher serum creatinine and urinary KIM-1 levels, lower GFR. There was a significant difference between children who did/didn't develop AKI postoperatively; backward linear regression analysis was conducted with GFR as dependent variable. Weight, baseline serum creatinine, postoperative AKI, CPB time, and sepsis were independent variables. CPB time remained the only risk factor associated with GFR. CPB time and AKI remained the only risk factors associated with KIM-1.

**Conclusion:** In children with congenital heart disease, cardiopulmonary bypass time associated with decrease in GFR and rise in kidney injury biomarker KIM-1 level independent of postoperative AKI.