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**Early initiation of renal replacement therapy in aki in pediatric heart surgery  
is associated with lower mortality**

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**Objectives:** Acute kidney injury (AKI) is frequent in the postoperative period of paediatric heart surgery and leads to significant morbidity and mortality. Renal replacement therapies (RRTs) are often used to treat AKI; however, these therapies have also been associated with higher mortality rates. Earlier initiation of RRT might improve outcomes. This study aims to investigate the relationship between the RRT and morbidity and mortality after paediatric heart surgery.

**Methods:** We performed a single-centre retrospective study of all children undergoing paediatric heart surgery between April 2010 and December 2017. A total of 480 patients were included. Of those, 109 (23%) were neonates and 126 patients (26%) developed AKI within the first 72 postoperative hours. Patients who developed AKI had longer PICU admissions [12 days (4–37.75) *vs* 4 (2–11);  $P < 0.001$ ] and hospital length of stay [27 (11–53) *vs* 14 (8–24)  $P < 0.001$ ] and higher mortality [22/126 (17.5%) *vs* 13/354 (3.7%);  $P < 0.001$ ]. RRT techniques were used in 32 (6.6%) patients [18/109 (16%) neonates and 14/371 (3.8%) infants and children;  $P < 0.01$ ], with 25 (78%) receiving peritoneal dialysis (PD) and 7 (22%) continuous RRT (CRRT). Patients who received PD within the first 24 postoperative hours had lower mortality compared with those in whom PD was initiated later [4/16 (25%) *vs* 4/9 (44.4%)].

**Results:** Mortality among patients who received CRRT was 28.6% (2/7). No deaths were reported in patients treated with CRRT within the first 24 postoperative hours.

**Conclusions:** Postoperative AKI is associated with higher mortality in children undergoing cardiac surgery. Early initiation of RRT, both PD in neonates and CRRT in paediatric patients, might improve morbidity and mortality associated with AKI.