

Hemofiltration Circuit Use Beyond 72 Hours in Pediatric Continuous Renal Replacement Therapy

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During continuous renal replacement therapy (CRRT), hemofiltration circuits ideally are changed after 72 hrs to prevent membrane or tubing rupture. This potential risk of rupture must be weighed against the risk of hypotension during prophylactic circuit changes in the unstable patient. The aim of this study was to examine the safety of circuits used beyond 72 hrs in pediatric CRRT. We performed a retrospective chart review of all patients who underwent CRRT at our institution from January 2003 to October 2005. Procedures were divided into standard (≤ 72 hrs) and extended (> 72 hrs) circuit duration groups. 103 CRRT procedures were performed for 85 patients. A total of 402 circuits were used, of which 90 (22%) were used for > 72 hrs. For circuits > 72 hrs, the mean duration of use was 5.5 days \pm 1.7 (range 4-11). There were no differences between the groups in age (P=0.27), diagnosis (P=0.43), CRRT indication (P=0.89), CRRT mode (P=1.00), anticoagulation (P=0.56), replacement rate (P=0.74) or dialysate rate (P=0.34). Blood flow rates were lower in the extended vs. standard group (60 vs. 70 ml/min, P=0.02). There was no difference in mortality between the groups (P=0.86). There were no incidents of membrane or tubing rupture in either group. Conclusion: Use of hemofiltration circuits beyond 72 hrs was not associated with increased mortality or increased incidence of circuit rupture. Our data suggest a need to redefine the limits of prolonged circuit use in pediatric CRRT.

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