
Abstract:

We report the first worldwide experience with continuous veno-venous hemodialysis (CVVHD) in children using the last generation Cardio-Renal Pediatric Dialysis Emergency Machine (CARPEDIEM)TM device. Thirteen children received 1,008 h of CVVHD during 95 sessions, using a 0.15 (n = 7) or a 0.25 m2 (n = 6) hemofilter. The median weight was 3 kg (interquartile range 2.5–6.2). In 10 patients, CVVHD was conducted using a 5 Fr double-lumen central vascular access, whereas in 3 children, bigger sizes were used (6.5 and 8 Ch). The median prescribed Qb was 17 mL/min (IQR 10-29.5), with a median Qd of 10 mL/min. Circuits were primed with 5% albumin in 12 out of 13 patients, using anticoagulation with heparin in all 13 cases. The median delivered/prescribed time ratio yielded a 100% result (95-100%). The most common cause for “downtime” was clotting that however occurred in only 3% of all treatments. Survivals at continuous renal replacement therapy discontinuation and ICU discharge were 100 and 69% respectively. The CARPEDIEMTM machine allowed successful delivery of diffusive blood purification modality to very small patients, using small catheters, no blood primes, and excellent concordance between delivered and prescribed treatment duration.
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