

Umbilical Venous Cannulation in Neonatal CRRT

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This report highlights the utility of umbilical venous cannulation (UVC) in infants and neonates for vascular access in continuous renal replacement therapy (CRRT). Three infants requiring venous access for CRRT were considered for UV placement. The umbilical vein was dissected from the umbilical stump (without cut-down), and direct cannulation was attempted using 7F double-lumen catheter. The catheter was manipulated to achieve placement of the catheter tip at the junction of right atrium and inferior vena cava. Three infants were between 2-9 days of age and weighing 2.2-2.9 kg at the time of UVC. The reasons for requiring CRRT were hyperammonemia (2) and non-immune hydrops/renal failure (1). The UVC was successful in all 3 patients, however in one case (3 days old), the catheter could not be advanced through the ductus venosus. The two remaining infants received CRRT for 48 and 120 hours.

Anticoagulation(AC) was maintained with heparin (1) or citrate (1). Adequate blood flow (40 to 70 ml/min) was maintained and there were no clotting complications. The line remained secure with one patient demonstrating oozing at the site, likely related to heparin AC. One patient recovered completely, and the other (hydrops) died with evidence of overwhelming sepsis. We report the successful use of UVC for vascular access in infants requiring CRRT. The UV should be considered among the viable alternatives for vascular access in newborns and young infants.

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