

Continuous Renal Replacement Therapy (CRRT) in Children using the Edwards Aquarius: A Single Centre Experience

DK Hothi [1], C St.George-Hyslop , D Geary , D Bohn , E Harvey

[1]Hospital for Sick Children, Toronto, Canada

Background: In response to patient instability on initiation of CRRT with the PRISMA AN69 membrane in patients with severe acidosis or requiring a circuit blood prime, we evaluated the Edwards AQUARIUS CRRT machine and aquamax polyethersulphone filters.

Objective: To identify the efficacy and technical problems encountered with the AQUARIUS.

Method: A retrospective review of 12 children weighing 3-58kg treated with the AQUARIUS.

Results:

- Hemodynamic stability on initiating CRRT
- No adverse reactions encountered in acidotic patients or those requiring a blood prime
- Successful incorporation of AQUARIUS into an ECMO circuit

TECHNICAL PROBLEMS

- The single weigh scale precludes use of citrate anticoagulation with Normocarb in alkalotic patients.
- Minimum dialysate and replacement fluid flow rates are 600 mls/hr
- Fluid warmer insufficient to maintain normothermia in small children
- Fluctuating TMP as the fluid pumps attempt to maintain the accuracy of UF to ∓ 20 ml per treatment
- Frequent clotting of the circuit with large clots below the drip chamber

Conclusion: The main advantage of the AQUARIUS is improved hemodynamic stability in those with severe acidosis or requiring circuit blood priming. Significant technical issues were encountered, impacting on efficacy of treatment and precluding citrate anticoagulation in alkalotic patients.

Corresponding author:

DK Hothi

Hospital for Sick Children, Nephrology

555 University Avenue

M5G 1X8 Toronto

Ontario, Canada

dhothi@hotmail.com

Phone: 416 813 7500

Mobile: 416 568 5425