

Use of the Fresenius 2008K hemodialysis (HD) machine for CRRT in children

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Children who develop ARF in an ICU setting are usually dialyzed with a machine dedicated to CRRT. Our Children's Hospital offers both acute & chronic HD performed by a dedicated group of Nephrology Nurses. Initially training was provided on both the Cobe C3 & Prisma, but difficulties arose with maintaining nursing expertise on 2 machines. We switched to the Fresenius 2008K machine as it offered the ability to perform acute, chronic & continuous HD and required nurse training on only 1 machine. Over the last 3 years we have placed 15 children on CRRT using the Fresenius for an average of 9 days (range 1-34) and 139 hours (range 14-442) of dialysis per patient. With a minimum dialysate flow rate of 6 L/hr we have mainly used CVVHD mode but we have also successfully used CVVHDF when treating a patient with a crush injury. The online production of dialysate allows for continuous changes to the dialysate Na & HCO₃ during the run. Mg, Ca & K levels can be modified by adding these to the acid bath while PO₄ can be added to the base bath to provide a physiological dialysate. We have successfully used both heparin & citrate anticoagulation. The high dialysate flow with a Ca-free bath has resulted in post-filter circuit iCa levels that are close to 0 even without citrate. As such, pre-filter iCa levels are used to adjust citrate infusion rates. CRRT can be successfully done in children using the Fresenius 2008K with greater flexibility than a dedicated machine like the PRISMA.

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