SREE BALAJI MEDICAL COLLEGE AND HOSPITAL
CHROMEPET, CHENNAI.

CHRONIC KIDNEY DISEASE

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- Haemodialysis (HD) involves circulating blood through a disposable dialyser. The vascular access of choice is the arteriovenous fistula (AVF). This, however, requires suitable peripheral veins and needs four to eight weeks for the fistula to mature. If there are no suitable veins, a graft can usually be inserted. Acute access with venous catheters has a high complication rate.
- Peritoneal dialysis (PD) involves using the peritoneum as the dialysis membrane, with pre-packaged fluid being instilled into the peritoneal space via a Tenckhoff catheter. This is usually only inserted once the decision to start dialysis is made.
- HD is usually performed in four-hour sessions, three times a week, in hospital-based dialysis units.
- PD typically involves continuous ambulatory peritoneal dialysis (CAPD), which allows continuous dialysis using three to five exchanges of fluid per day via disposable bags.

Continuous renal replacement therapy is one of the renal replacement methods that include intermittent hemodialysis and peritoneal dialysis. It is intended to be applied for 24 hours or longer through continuous, slower dialysis. CRRT acts as renal support through blood purification to allow solute and fluid homeostasis. It requires appropriate vascular access, pumps to allow blood circulation, a permeable membrane, and varying solutions to allow fluid balance. There are different techniques of CRRT that are distinguished by their method of solute removal.

Continuous Venovenous Hemofiltration (CVVH)

This method utilizes convection via a transmembrane pressure gradient to filter solutes. It does not require dialysate fluid; instead, a substitute fluid is used to replace the filtered fluid.

Continuous Venovenous Hemodialysis (CVVHD)

This method utilizes diffusion via a transmembrane concentration gradient across the membrane. In this method, dialysate fluid is used. This is effective for solutes will small molecular weights such as potassium, urea, and creatinine.

Continuous Venovenous Hemodiafiltration (CVVHDF)

This combines both convection and diffusion methods of filtration.

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