

Solutions to eAJKD's [Test Your Knowledge: Hemodialysis](#)**1C. >5**

Comparing different dialysis modalities is best done by assessing the weekly Kt/V. This adjusts for the continuous nature of peritoneal dialysis (PD) versus the intermittent nature of HD. It also accounts for the frequency of intermittent treatments as proposed by Gotch. (See Fig 3 of [Golper et al](#))

2B. Polyacrylonitrile

ACE inhibitors have been shown to increase the incidence of anaphylactic reactions in patients dialyzed with a polyacrylonitrile (PAN) membrane.

3C. Convection and diffusion

In a dialysis patient who makes no urine, sodium removal occurs through both diffusion (15-20%) and convection (80%). Convective loss of sodium depends on the prescribed UF, while diffusive clearance depends on the concentration gradient between the plasma and dialysate. High dialysate sodium prescriptions result in less disequilibrium symptoms, more vascular stability, and lower incidence of muscle cramps. However, patients leave with a higher post HD sodium concentration (relative hyponatremia) and increased thirst, and are prone to greater interdialytic weight gains and ultimately hypertension.

4B. <137 mEq/dL

The DOPPS observed a 45% higher risk of death in patients with pre-dialysis sodium levels less than 137 mEq/dL.

5C. Calorie count and nutritional evaluation

Between dialysis treatments, the serum bicarbonate concentration declines as it neutralizes the endogenous acid load. Individuals with poor protein intake, small muscle mass, or persistent vomiting are more susceptible to metabolic alkalosis as their endogenous acid production is lower. Simply lowering the dialysate bicarbonate concentration is not ideal, and these individuals need nutritional assessment and a thorough evaluation of caloric intake.

6B. Improved peripheral responsiveness to insulin after starting dialysis

The half-life of insulin is prolonged in kidney disease, particularly when GFR falls below 20 mL/min. This is unlikely to explain the patient's hypoglycemic new episodes as he was stable on this dose prior to initiating HD. When starting dialysis, the effect of a given dose is enhanced due to an improvement in the peripheral responsiveness to insulin.