

A RETROSPECTIVE REVIEW OF PERIOPERATIVE MANAGEMENT OF  
SERUM POTASSIUM MEASUREMENTS IN CHRONIC HEMODIALYSIS  
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Potassium balance plays a significant role in the management of end-stage renal disease patients on hemodialysis (HD). In addition, data has shown that when these patients undergo surgical procedures they experience an increased frequency of perioperative complications with hyperkalemia being the most common. There is limited data on specific recommendations for the perioperative management of HD patients in regards to potassium management.

To determine the perioperative management of potassium balance in HD patients at our institution, we retrospectively reviewed the medical records of patients undergoing arteriovenous (AV) access surgery during a 4 month period. Data regarding the date of the last preoperative HD, perioperative potassium concentrations, and the need for unscheduled or emergent HD was recorded. Fifty-eight patient charts were available for review.

Of the 58 patients, 48 patients had serum potassium measurements recorded prior to the procedure. The preoperative data was obtained between 1 to 30 days prior to the procedure with the average serum potassium being measured 9.2 days before surgery. The average potassium concentration at this measurement was 5.9 mg/dl (range 3.0-7.6mg/dl). Nineteen of the 48 patients had preoperative potassium measurements within 24 hours of surgery with the average serum potassium concentration being 4.9mg/dl (3.5-6.9mg/dl). There were a total of 34 patients who had postoperative potassium measurements with an average serum potassium concentration of 4.7mg/dl (range 3.8-6.4mg/dl). One patient required emergent HD prior to surgery to manage a potassium concentration of 6.9 mg/dl and two patients required HD post procedure for potassium concentrations of 5.3 and 5.8mg/dl. Information regarding the last HD prior to surgery was not recorded for most patients.

These data show a significant variability in the perioperative care of HD patients undergoing surgery with regard to potassium management. A broad range of potassium concentrations were evident and urgent HD was needed on several occasions. The surgeries reviewed here were classified as minor procedures therefore the wide variations in potassium concentrations were greater than expected. More prospective analysis should be done to better determine potassium concentration fluctuations in patients undergoing longer and more complicated surgery.