The Efficacy of Spironolactone in Continuous Ambulatory Peritoneal Dialysis Patients with Hypokalemia: A Randomized Controlled Trial

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Background: In continuous ambulatory peritoneal dialysis (CAPD) patients, hypokalemia is a common problem associated with muscle weakness, malnutrition, arrhythmia, bowel ileus, and increased mortality. Spironolactone is commonly used for hypokalemia treatment in CAPD patients but efficacy is not certainly known.

Objective: To evaluate the efficacy of spironolactone 50 mg per day compared with placebo in CAPD patients with hypokalemia.

Methods: A randomized controlled trial was conducted in hypokalemic CAPD patients (serum potassium < 3.5 mEq/L). They were assigned to receive 50 mg per day of spironolactone or placebo for 4 weeks. Serum potassium and dosages of potassium supplement were compared between the two groups after 4 weeks of treatment.

Results: A total of 60 participants underwent randomization, with 31 in spironolactone group and 29 in placebo group. The initial serum potassium was 3.01 ± 0.36 and 3.00 ± 0.37 mEq/L in the spironolactone and the placebo groups, respectively. After 4 weeks of treatment, serum potassium was 3.78 ± 0.74 and 3.76 ± 0.57 mEq/L in the spironolactone and the placebo groups, respectively. No significant effect of 50 mg per day spironolactone was noted on normalizing serum potassium (P=0.866; 95% CI: 0.364-3.32). Furthermore, there was no significant difference of amount of potassium supplement between both groups, elixir potassium chloride (P=0.161), and potassium chloride tablet (P= 0.72). There were two episodes of hyperkalemia (5.6, 5.8 mEq/L) in the spironolactone group.

Conclusion: Spironolactone 50 mg per day is not effective for treatment of hypokalemia in CAPD patients.

Keywords: End stage renal disease, Hypokalemia, Peritoneal dialysis, Spironolactone