

Effect of a simultaneous potassium and carbohydrate load on extrarenal K homeostasis in end-stage renal failure

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Patients with chronic renal failure (CRF) are continuously exposed to hyperkalemia. In these patients the extrarenal disposal of a potassium load may be very important to determine the plasma potassium levels. We studied the effects of a combined oral load of potassium (0.5 mEq/kg body weight) and carbohydrate (0.5 g/kg body weight) to mimic normal ingestion of potassium. Eight CRF patients and 5 control subjects were studied. The maximal increase in plasma potassium levels achieved was significantly higher in the patients (1.07 ± 0.1 mEq/l) than in controls (0.39 ± 0.05 mEq/l). Basal insulin levels were higher in the CRF patients and increased with the oral potassium and carbohydrate load in both controls and patients. In the CRF patients only $58.9 \pm 3\%$ of the potassium load was translocated to the intracellular space compared to $81 \pm 6\%$ in the controls. No correlation was found between the acid base status and maximal potassium increase. We conclude that patients with CRF exhibit an