



## Spironolactone improves endothelial and cardiac autonomic function in non heart failure hemodialysis patients

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**OBJECTIVES:** Hemodialysis patients have a cardiovascular mortality rate of 20-40 times that of the general population. Aldosterone inhibition by spironolactone has exerted beneficial, prognostically significant cardiovascular effects in patients with heart failure maintained on hemodialysis or peritoneal dialysis. Our aim was to investigate spironolactone's effect in non heart failure hemodialysis patients. **METHODS:** Fourteen stable chronic hemodialysis patients (nine men), 59.5 +/- 3.1 years of age were evaluated in a sequential, fixed-dose, placebo-controlled study. Heart failure was diagnosed on the basis of signs and symptoms of heart failure or left ventricular ejection fraction less than 50%. Following an initial 4-month period of placebo administration after each dialysis, patients received spironolactone (25 mg thrice weekly after dialysis) for the next 4 months. Data were recorded at baseline, at the end of placebo administration, and at the end of spironolactone treatment and included endothelial function by forearm reactive hyperemia during venous occlusion plethysmography, cardiac autonomic status by heart rate variability in the time and frequency domain, blood pressure response, and echocardiographic and laboratory data. **RESULTS:** Placebo induced no changes in the aforementioned parameters. Following spironolactone, salutary effects were observed in the extent and duration of reactive hyperemia ( $P < 0.05$  for both), as well as in heart rate variability ( $P < 0.05$ ) and blood pressure control ( $P < 0.05$ ). No changes occurred in echocardiographically derived left ventricular dimensions or mass. **CONCLUSION:** Low-dose spironolactone therapy in clinically stable non heart failure hemodialysis patients is associated with favorable effects on cardiovascular parameters known to adversely affect survival, such as endothelial dysfunction and heart rate variability. Spironolactone treatment might benefit long-term cardiovascular outcome of such patients.

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