

Atheromatosis and endothelial response of the small peripheral arteries: a peritoneal dialysis versus hemodialysis patients' mismatch

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Background Peritoneal dialysis (PD) and hemodialysis (HD) are treatment options for end stage renal disease (ESRD). However, few are known on the cardiovascular impose of those therapeutic modalities.

Our aim is to uncover endothelial damage and subclinical atheromatous process in male patients on chronic ESRD treated by either of those methods.

Methods 84 male ESRD patients, 46 on HD and the rest 38 on PD without apparent cardiovascular disease enrolled the study. The two groups did not differ statistically in age, (64,9 vs 64) prevalence of hypertension, diabetes mellitus, smoking and lipid profile. All underwent common carotid ultrasound intima –media thickness (cIMT) evaluation to uncover subclinical atheromatosis.

Endothelial function was estimated by the SHIM-5 score (theoretical range 0-25) that grades erectile potency, a nitric oxide depended phenomenon based on vasodilator ability of the penile vasculature. Higher grading indicates a healthier endothelial vascular status.

Results HD patients had statistically higher cIMT (1.5 vs 0.85) and lower SHIM-5 score grading (8.8 vs 12.8) compering to PD patients. Statistics remained significant after adjustment for age, body mass index, and presence of hypertension, diabetes mellitus, tobacco use and statin therapy.

Conclusion Peritoneal dialysis ESRD male patients appear to have a favorable endothelial function and a mild atheromatous load as compared to hemodialysis patients. Our data may offer clinical information guiding further therapeutic efforts in patients with end stage renal disease, a special population where cardiovascular morbidity remains typically high.