

RENALASE AND CATECHOLAMINES IN ELDERLY PATIENTS WITH HYPERTENSION IN RELATION TO KIDNEY FUNCTION

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OBJECTIVES

Sympathetic nervous system activity is raised in older persons as well as in patients with chronic kidney disease and correlates with increased of vascular resistance and systemic blood pressure. It is due to a significant reduction in the rate of norepinephrine clearance from plasma and in elderly also to an increased sympathetic discharge directed to different organs. It has been suggested that renalase level may be related to kidney function.

The aim of the study was to compare the serum renalase and catecholamines – dopamine and norepinephrine concentration and blood pressure control in a cohort of patients aged 65 years and more with hypertension, including treated with haemodialysis or peritoneal dialysis (HD+PD group).

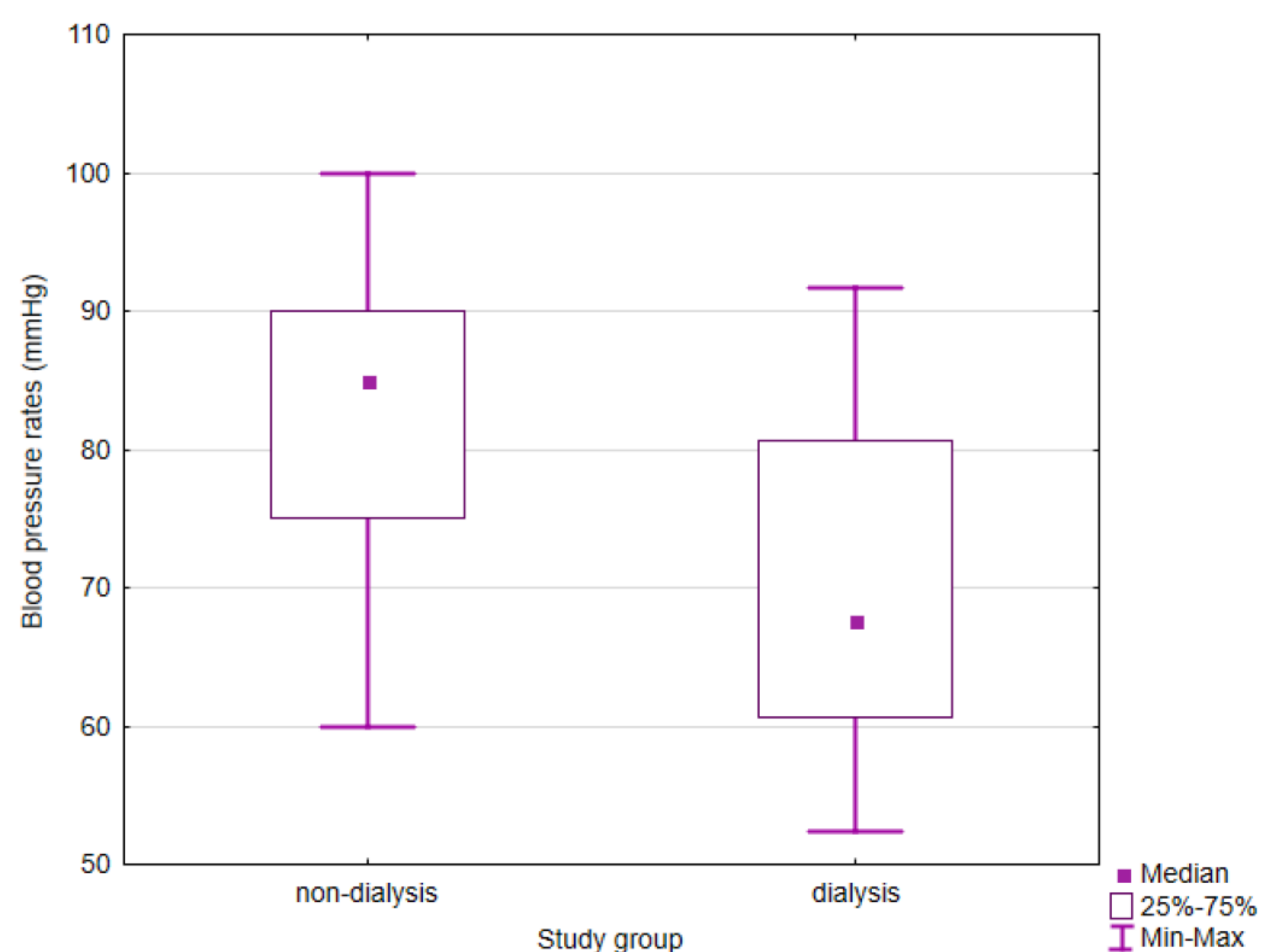
METHODS

The serum renalase, dopamine and norepinephrine concentration was assessed in 74 patients aged 65 years and more with hypertension, including 49 treated with haemodialysis or peritoneal dialysis (HD+PD group). The blood pressure control, residual renal function rate, laboratory tests and echocardiography were also evaluated.

RESULTS

The renalase ($p < 0,001$) and catecholamines – dopamine ($p < 0,001$) and norepinephrine ($p = 0,002$) concentration was significantly different in dialysis patients comparing non-dialysis group. The blood pressure control, including systolic and diastolic rates, was better in HD+PD cohort ($p = 0,01$) although they used less amount of hypotensive drugs ($p = 0,007$). Dialysis patients also had more advanced abnormalities in echocardiography, like left ventricular hypertrophy ($p = 0,007$) and less ejection fraction rate ($p = 0,004$). In dialysis group there was significant higher renalase concentration in hemodialysis patients but norepinephrine was lower here. There was no difference in dopamine level between HD and PD patients aged 65 and more years. PD patients had higher residual renal function rate than HD group ($p < 0,05$).

Parametres	Dialysis group (N=49)	Non-dialysis group (N=25)	p
Renalase ($\mu\text{g/ml}$)	23.79 (12.3; 42.0)	5.69 (1.9; 62.0)	0.001
Norepinephrine (ng/ml)	0.66 (0.1; 3.9)	1.22 (0.4; 2.3)	0.002
Dopamine (pg/ml)	54.80 (0.8; 352.7)	10.41 (1.0; 106.6)	0.001



CONCLUSIONS

The end-stage kidney failure is associated with elevated renalase level. It may be the result of impaired kidney function and the reduction of residual diuresis but also due to the sympathetic nervous system hyperactivity found in this population. It may have an impact on the development of cardiovascular complications.

