

Diabetic kidney disease and its association with macrovascular disease in diabetic patients

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Introduction

It is well known that diabetes, especially type 2 (T2DM), confers a substantial burden of macrovascular disease. Previous studies suggest a link between retinopathy and macrovascular events in diabetes. However, just a few studies have investigated the association between peripheral diabetic kidney disease (DKD) and cardiovascular disease.

Aim

The purpose of this study is to investigate whether the presence of peripheral neuropathy is associated with macrovascular disease in diabetes patients.

Patients and methods

98 diabetic patients (48 male/50 female) were included in the study. DKD was confirmed by the presence of moderately or severely increased albuminuria. Adverse cardiovascular events were collected, including: cardiac events, left ventricular hypertrophy (LVH), peripheral vascular disease (PVD) and stroke. Statistical analysis: Chi-square test was used to compare the existence of macrovascular complications between groups with and without DKD.

Results

68 patients with type 2 diabetes and 20 with type 1, with mean age (52.58 ± 20.70) and mean HbA1c ($11.21 \pm 2.33\%$), were included in the study. DKD was diagnosed in 25 patients: 17 with moderately increased albuminuria and 8 with severely increased. DKD was significantly correlated with the existence of, at least, one macrovascular complication ($p < 0.02$). Significant differences between the groups with or without DKD were found in the rate of: cardiac events (32.00% and 9.84% respectively; $p = 0.01$); LVH (36.00% and 11.11% respectively; $p < 0.001$) and PVD (20.00% and 13.33% respectively; $p = 0.04$). These differences remained significant after adjusting for age, sex, hypertension, smoking habit, HbA1c, duration of diabetes and body mass index. No significant differences in the rate of strokes.

	DKD – (n=65)	DKD + (n= 25)	p-value
PVD	9 (13.33%)	5 (20.00%)	0.04
Cardiac Events	4 (9.84%)	8 (32.00%)	0.01
LVH	7 (11.11%)	9 (36.00%)	<0.001

Table 1. Patients with diabetic kidney disease have significant higher rates of peripheral vascular disease, cardiac events and left ventricular hypertrophy.

Conclusions

Our results show significant correlation between DKD and the existence of one or more macrovascular complications. Moreover, we have found that diabetic patients with DKD present significant higher rates of cardiac events, LVH and PVD than diabetic patients without DKD. Despite the limitations of the study, our results suggest that early detection of DKD might be a valuable component of macrovascular risk assessment in diabetic patients.

