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ASSOCIATION BETWEEN ALBUMINURIA AND SLOW GAIT SPEED IN MALES WITH TYPE 2 DIABETES

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OBJECTIVES

Chronic kidney disease is highly prevalent in older patients with type 2 diabetes (T2D). Albuminuria is a marker of vascular endothelial pathology that reflects increased inflammatory state of CKD. Such vascular pathology could contribute to skeletal muscle damage and poor physical performance. We aimed to investigate association between albuminuria and gait speed in males with T2D.

METHODOLOGY

We conducted a cross-sectional on 100 male patients (mean age 63.3±7.3 years) with T2D. Slow gait speed was defined as ≤0.8 m/s. Albuminuria was defined as urinary albumin-to-creatinine ratio (uACR) ≥ 30 mg/g. Logistic regression was performed to examine relationship between albuminuria and slow gait speed, adjusting for demographics, diabetes duration, blood pressure, haemoglobin A1c, estimated glomerular filtration rate (eGFR) and appendicular skeletal muscle mass.

This research has been approved by an ethics committee.

RESULTS

There were 51 patients with slow gait speed. The median uACR was 35 mg/g (IQR 10-174) and 50.6% of patients had albuminuria. Univariate analysis showed that albuminuria was positively associated with slow gait speed with odds ratio (OR) 2.80 (95%CI 1.20-6.57; p=0.017). The association persisted in the fully adjusted analysis with OR 4.56 (95% CI 1.24-16.77; p=0.022). Similar findings were observed using log-transformed uACR as a continuous variable with OR 1.67 (95% CI 1.19-2.36; p=0.003) in the fully adjusted analysis. There was no evidence of association between eGFR and slow gait speed.

CONCLUSION

Albuminuria was independently associated with slow gait speed in T2D. Hence, evaluation of albuminuria is a potential tool to identify older patients at risk of functional impairment.

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ASPALATHIN-RICH GREEN ROIBOS EXTRACT IN COMBINATION WITH GLYBURIDE AND ATORVASTATIN ENHANCES LIPID METABOLISM IN A db/db MOUSE MODEL

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OBJECTIVES

This study investigated the effects of combining an aspalathin-rich green rooibos extract (GRT) with glyburide and atorvastatin in a type 2 diabetic (db/db) mouse model.

METHODOLOGY

Db/db mice were treated orally with glyburide and atorvastatin and GRT as mono and combination therapies for 5 weeks. An intraperitoneal glucose tolerance test was conducted at 3 weeks of treatment. Serum was collected for lipid analyses and liver tissues were collected for histological examination and gene expression.

RESULTS

There was an increase in the fasting plasma glucose (FPG) of the db/db compared to the lean mice (from 7.98 ± 0.34 to 26.44 ± 1.84, p<0.0001). GRT reduced FPG levels in db/db mice when compared to untreated controls (from 26.44 ± 1.84 to 18.7 ± 4.4, p<0.001) without affecting bodyweight. Glyburide had no effect on FPG alone or in combination with GRT in db/db mice. Atorvastatin reduced cholesterol (from 4.00 ± 0.12 to 2.93 ± 0.13, p<0.05) and triglyceride levels (from 2.77 ± 0.50 to 1.48 ± 0.23, p<0.05). The hypo-triglyceridemic effect of atorvastatin was enhanced when combined with GRT and glyburide (from 2.77 ± 0.50 to 1.73 ± 0.35, p =0.0002). Glyburide reduced the severity and pattern of steatotic lipid droplet accumulation from a mediovesicular type across all lobular areas, whilst GRT