



practice

# Peripheral arterial disease in patients with renal-diabetic foot ulcers

**Objective:** To describe the angiographic characteristics of peripheral arterial disease (PAD) in persons with diabetic foot ulcers (DFUs) on dialysis treatment.

**Method:** The study is a retrospective analysis of patients with DFUs and PAD who had been referred to our diabetic foot clinic. All patients had been managed by a pre-set limb salvage protocol including revascularisation of the affected limb. Arterial lesions (stenosis between 50–99% and occlusions) were retrospectively evaluated through angiogram analysis. According to the presence or not of dialysis, patients were divided into two patient groups: renal-diabetic foot (RDF) and diabetic foot (DF). Distribution of PAD and immediate revascularisation outcome (technical revascularisation outcome) for RDF and DF were separately reported and compared.

**Results:** The sample included 239 patients: mean age was 71.8 years; 72.4% were male; 87.4% had type 2 diabetes; mean diabetes duration was 21.4 years; and the mean HbA1c was 63±22mmol/mol. The RDF group compared with the DF group

reported higher numbers of vessels affected ( $n=5\pm 1.6$  versus  $3.9\pm 1.5$ , respectively,  $p<0.0001$ ), greater involvement of the superficial femoral artery (90.2% versus 75.8%, respectively,  $p=0.003$ ), the tibial-peroneal trunk (53.7% versus 25.5%, respectively,  $p=0.01$ ), the anterior tibial artery (93.9% versus 80.9%, respectively,  $p=0.03$ ) and below-the-ankle (BTA) arteries (70.7% versus 35.7%, respectively,  $p=0.0001$ ). The RDF group showed a higher rate of revascularisation failure in comparison to DF patients (43.9% versus 15.3%, respectively,  $p<0.0001$ ). BTA arterial disease (odds ratio 9.5; 95% Confidence Interval: 3.5–25.4;  $p=0.0001$ ) resulted as the only independent predictor of revascularisation failure.

**Conclusion:** In this study, RDF patients showed a widespread distribution of arterial lesions with a higher involvement of foot arteries in comparison with DF patients. BTA arterial disease was found to be an independent predictor of revascularisation failure.

**Declaration of interest:** The authors have no conflicts of interest.

arterial lesions • diabetes • diabetic foot ulcer • dialysis • end-stage renal disease • limb salvage • peripheral arterial disease • renal • revascularisation • stenosis • ulcer • wound • wound care • wound healing



diabetic foot (DF) has traditionally been considered as a local foot problem due to diabetes; however, further observations

practice—'renal-diabetic foot'.

Although good outcomes have been achieved in the treatment of patients with diabetes with critical limb