

Diabetes journals

One in seven patients with diabetes has undiagnosed peripheral arterial disease



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The PADiD Study (Peripheral Arterial Disease in Diabetes; summarised alongside) had two aims: ascertaining the level of undiagnosed PAD; and determining the extent to which cardiovascular risk factors are addressed in

these patients. A total of 1303 people with diabetes were screened in 31 tertiary centres throughout Spain. Each participating centre recruited approximately 40 of their patients aged between 50 and 80 years, who attended the practice regularly for treatment of type 2 diabetes. Participants were separated into three groups based on their history of cardiovascular disease and ankle–brachial pressure index (ABPI): the ‘normal’ group included patients with ABPI >0.9 who had no history of coronary heart disease (CHD), cerebrovascular disease or PAD; the ‘new PAD’ group included patients with previously undiagnosed PAD; and the ‘previously diagnosed’ group, which included those with previously diagnosed CHD, cerebrovascular disease or both. Cholesterol levels, blood pressure and use of therapeutics such as statins, aspirin and clopidogrel were recorded for each patient.

Overall, the new PAD group included 15% of the total patient population and demonstrated significantly higher levels of low-density lipoprotein (LDL) cholesterol, higher systolic blood pressure, lower statin use, lower anti-platelet therapy and lower

anti-hypertensive therapy compared with the CV group.

This study acts as a reminder that cardiovascular risk factors are under-treated in people with diabetes generally. Patients who are deemed at high risk, such as those with pre-existing atherosclerotic disease in any vascular bed or smoking status should be actively screened for PAD. Incredibly, 40% of the patients in the new PAD group had a history of intermittent claudication. At 15%, the proportion of patients newly diagnosed with PAD is very high and would be amenable to aggressive cardiovascular risk factor reduction. The new NICE guidelines for type 2 diabetes stipulate aggressive lipid lowering and outlines targets as total cholesterol of 4mmol/L and low-density lipoprotein cholesterol of 2mmol/L for all patients with any atherosclerotic disease (or microalbuminuria or proteinuria). It is likely that patients with PAD are the most neglected group of diabetes patients with atherosclerotic disease. In the UK, however, results might be slightly better than the figures reported by this Spanish study, mainly because of our Quality and Outcomes Framework.

González-Clemente and colleagues’ findings should lead to an armada of clinical audits! It is my intention to discuss these results further with a leading vascular surgeon, with the view to develop ideas for implementing PAD screening and improving the treatment of risk factors in my patients with diabetes.

National Collaborating Centre for Chronic Conditions. (2008) *Type 2 diabetes: national clinical guideline for management in primary and secondary care (update)*. Royal College of Physicians, London

DIABETIC MEDICINE

ABPI remains underused in diagnosis of PAD

Readability	✓✓✓✓
Applicability to practice	✓✓✓✓
WOW! factor	✓✓✓

1 Peripheral arterial disease (PAD) of the lower extremities is one of the risk factors of coronary heart disease (CHD); PAD can be both symptomatic and asymptomatic, but both carry the similar risks of CHD, and strict control of cardiovascular (CV) risk factors is recommended.

2 Detection of patients with asymptomatic PAD can be difficult; this study compared the control and treatment of CV risk factors in patients newly diagnosed with PAD with those with pre-diagnosed PAD, CHD, and cerebrovascular disease.

3 Assessment of 1303 patients in 31 different centres included PAD screening and details of history of CHD or cerebrovascular disease, medication, as well as details on control of CV risk factors.

4 Data analysis yielded three patient groups based on ankle–brachial pressure index (ABPI) measurements, those with normal ABPI, new PAD, existing CHD and cerebrovascular disease: 194 patients fell into the new PAD group; these patients had higher low-density lipoprotein cholesterol and systolic blood pressure, but were less likely to use statins, aspirin or clopidogrel compared to the other groups, and more likely to be smokers.

5 A significant proportion of patients in this study group had PAD without any symptoms of CHD or cerebrovascular disease; CV risk factors were poorly controlled in this group.

González-Clemente JM, Piniés JA, Calle-Pascual A et al (2008) Cardiovascular risk factor management is poorer in diabetic patients with undiagnosed peripheral arterial disease than in those with known coronary heart disease or cerebrovascular disease. Results of a nationwide study in tertiary diabetes centres. *Diabetic Medicine* **25**: 427–34

DIABETES CARE

Retinopathy indicates increased risk of coronary atherosclerosis

Readability	✓✓✓✓
Applicability to practice	✓✓✓
WOW! factor	✓✓✓

1 Presence of retinopathy can be linked to an increased risk of cardiovascular disease, particularly coronary atherosclerosis. This study measured coronary artery calcium (CAC) levels in people with type 2 diabetes and recorded the incidence of retinopathy in order to further determine the association.

2 A total of 204 patients were included in this study and CAC was determined by computed tomography; diagnosis of any type of retinopathy was significantly associated with CAC ($P=0.006$), and CAC was found to increase with retinopathy progression.

3 Proliferative diabetic retinopathy was significantly associated with CAC; this association remained significant after adjustment for both standard ($P=0.047$) and extended risk factors ($P=0.035$).

4 Logistic regression analyses showed that compared with patients with no retinopathy at all, $CAC > 400$ was six times more likely in patients with proliferative diabetic retinopathy.

5 These findings provide evidence of a direct association between retinopathy and coronary atherosclerosis determined by CAC in people with type 2 diabetes and can help identify those at increased risk of cardiovascular disease.

Reaven PD, Emanuele N, Moritz T et al (2008) Proliferative diabetic retinopathy in type 2 diabetes is related to coronary artery calcium in the Veterans Affairs Diabetes Trial (VADT). *Diabetes Care* 31: 952-7

DIABETES CARE

Model for prediction of diabetes in people with hypertension

Readability	✓✓✓✓
Applicability to practice	✓✓✓
WOW! factor	✓✓✓

1 Patients with hypertension are at increased risk of developing type 2 diabetes, and several studies have focused on the effect of hypertensive medications on this risk; the present study aimed to identify the predictive

factors of new-onset diabetes (NOD) in people with hypertension.

2 The study analyzed data from people with NOD (9.7% of 19 257 patients) in a study focusing on different blood pressure lowering agents.

3 NOD was found to be significantly associated with increased levels of baseline fasting plasma glucose $> 5 \text{ mmol/L}$, body mass index, and alcohol consumption.

Gupta AK, Dahlöf B, Dobson J et al (2008) Determinants of new-onset diabetes among 19,257 hypertensive patients randomized in the Anglo-Scandinavian Cardiac Outcomes Trial-Blood Pressure Lowering Arm and the relative influence of antihypertensive medication. *Diabetes Care* 31: 982-8

DIABETOLOGIA

High prevalence of CVD risk in children with type 1 diabetes

Readability	✓✓✓✓
Applicability to practice	✓✓✓✓
WOW! factor	✓✓✓

1 People with type 1 diabetes are at increased risk of cardiovascular disease (CVD) related death before the age of 40 years; consequently, the control of CVD risk factors is important in this population.

2 This study investigated the prevalence of CVD risk factors in children and adolescents with

type 1 diabetes; a total of 1658 patients participated in this study and the average age was 13.1 years.

3 All participants were assessed for cardiovascular risk factors including family history of CVD, low-density lipoprotein and high-density lipoprotein cholesterol levels, blood pressure and body mass index.

4 The prevalence of cardiovascular risk factor was high overall: 86% of patients had at least one; 45% had at least two; and 15% had at least three of the risk factors assessed. Only a minimal proportion of participants were on any kind of cardioprotective therapy.

Margeisdottir HD, Larsen JR, Brunborg C et al (2008) High prevalence of cardiovascular risk factors in children and adolescents with type 1 diabetes: a population-based study. *Diabetologia* 51: 554-61

DIABETES CARE

Cardiovascular-related death similar in diabetes

Readability	✓✓✓
Applicability to practice	✓✓✓
WOW! factor	✓✓✓

1 This study aimed to evaluate the comparative risk of cardiovascular-related death and the associated effect of hyperglycaemia in people with type 1 diabetes versus

those with type 2 diabetes.

2 A total of 173 people with type 1 diabetes, 834 people with type 2 diabetes and 1294 control participants, all without cardiovascular disease, were included in this study, and followed for 18 years.

3 Similar rates of cardiovascular-related mortality were observed between the two diabetes groups compared with control; however, increased hyperglycemia affected risk more in type 1 diabetes than type 2 diabetes.

Juutilainen A, Lehto S, Rönnemaa T et al (2008) Similarity of the impact of type 1 and type 2 diabetes on cardiovascular mortality in middle-aged subjects. *Diabetes Care* 31: 714-9

‘NOD was found to be significantly associated with increased levels of baseline fasting plasma glucose $> 5 \text{ mmol/L}$, BMI, and alcohol consumption.’