

Screening of asymptomatic peripheral arterial occlusive disease in patients with diabetes treated in a hospital clinic.

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The screening of peripheral arterial disease (PAD) in diabetic patients is directed by recommendations, different between countries, and mainly based on a determination of the ankle-brachial pressure index (ABPI). Studies like those published by Marinelli (JAMA 1979) or by Beks (Hoorn Study - Diabetologia 1995) have established the contribution of non invasive testing procedures compared to clinical data alone. The aim of our study is to evaluate the efficacy of the calculation of the ABPI and Doppler waveform analysis in screening for PAD by comparison with the clinical symptoms and the palpation of peripheral pulses, in a population of diabetic patients coming for an annual check-up. Two hundred and fifty five out-patients were investigated over a 2 month period. There were 149 men and 106 women, aged 58.5 ± 13.9 years, with diabetes for 16.7 ± 10.5 years. They had type 1 diabetes for 27.5% of the cases, type 2 for 70.5% and other types of diabetes in 2% of the cases. 52% were treated with insulin, 12% had a mixed treatment and 36% took oral hypoglycaemic drugs. More than 70% had a BMI above 30 kg/m^2 . Mean HbA1c was $8.26 \pm 1.31\%$. Cardiovascular risk factors were frequently associated with diabetes: tobacco (42%), HTA (61.2%), dyslipidemia (43.5%). Coronary disease was known for 15.3% of the patients and cerebrovascular disease for 5%. Peripheral neuropathy was detected in 58% of the patients, diabetic retinopathy in 26% and nephropathy in 17%. The physical examination was performed by a single physician. An Edinburgh questionnaire identified 23 cases with intermittent claudication (9.2%). Femoral whizzing was noted for 8 subjects. Absence of distal pulses (dorsalis pedis and/or posterior tibial artery, for one leg or on both sides) was established in 89 patients among 251 (35.5%). Mean ankle brachial pressure index is 1 on both sides, after exclusion of 17 patients with an ABPI > 1.3 . Thirty seven (14.5%) patients had an ABPI ≤ 0.9 at least at one ankle. Doppler waveform analysis was judged abnormal for 37 (14.5%) patients, with 34 distal localisations and 3 proximo-distal cases. The diabetic patients with an ABPI ≤ 0.9 and/or Doppler abnormality, considered as having PAD, represented 21.65% (55/254) of the population. Mediacalcinosis was found on feet radiographies in 81 cases (33.3%). Patients with mediacalcinosis had a mean age of 63 years and a diabetes duration of 20 years. Among these patients, only 13 had an ABPI > 1.3 , while 53 had an ABPI between 0.9 and 1.3, and 15 had an ABPI ≤ 0.9 . Eighteen patients with mediacalcinosis had a pathological Doppler velocimetry. PAD prevalence among patients with mediacalcinosis is assessed around 29.6%. Conclusion: Clinical examination has a low sensitivity: one case of PAD in 5 is not detected. Our study shows that the clinical detection of PAD by the finding of absent arterial pulse may over-estimate the true prevalence of PAD in patients with diabetes. Our non invasive testing procedure, linking ABPI and Doppler waveform analysis, has assessed PAD in 55 patients for whom the interest of Duplex scanning may be discussed.