P21

The comparison of non-invasive vascular tests with angiographic findings in patients with diabetic foot syndrome

Wosková V., Jirkovská A., Bém R., Dubský M., Fejfarová V., Skibová J.
Diabetes Center, Institute for Clinical and Experimental Medicine, Prague, Czech Republic

Background and aim: Non-invasive vascular evaluation is important in identification patients with poor ulcer healing and at high risk for amputation. Both transcutaneous oxygen pressure (TcpO2) and Doppler ankle brachial index (ABI) are methods for assessment of peripheral vascular disease (PAD), but interpretation of their results in relationship to angiography (AG) remains unclear, mainly in diabetic patients. The aim of the study was to compare TcpO2 and Doppler ABI measurements with AG findings in diabetic foot patients. **Patients and methods:** 50 diabetic patients (39 male/11 female, mean age 65.9 ± 8.8 years, mean diabetes duration 21.2 ± 10.1 years) treated at a diabetic foot clinic for foot ulcer and/or gangrene who underwent AG during 2010 – 2011 were included into the retrospective study. TcpO2 and Doppler ABI prior to AG were measured, TcPO2 < 40mmHg and ABI < 0.9 were criteria indicating PAD. AG findings were assessed and categorised according to morphologic classification of disease severity proposed by Graziani (2007). Both non-invasive tests were compared to AG findings and statistically evaluated. **Results:** A positive AG finding was observed in all study patients; the morphologic classes 3 and 4 were the most common (26% and 40%). Using non-invasive tests, TcpO2 showed a significantly higher sensitivity for detecting PAD compared to ABI (82% vs. 48%, $p < 0.001$). Moreover, no agreement between TcpO2 and Doppler ABI was observed (κ 0.18). TcpO2 values significantly correlated with severity of PAD based on AG morphologic classification ($r = -0.385$, $p < 0.01$), analogous significant correlation with ABI was not observed. **Conclusion:** Our study demonstrated that in comparison with AG findings, TcpO2 seems to be a more appropriate diagnostic non-invasive test for PAD detection than Doppler ABI in diabetic foot patients. TcpO2 showed higher sensitivity for PAD detection and correlated significantly with the severity of PAD based on morphologic classes of vascular involvement. These results support the importance of including TcpO2 assessment to daily clinical practice at specialised diabetic foot clinics. *Supported by the project (Ministry of Health, Czech Republic) for development of research organisation 00023001 (IKEM, Prague, Czech Republic) – Institutional support.*