

PP 27 - Buerger's angle and Pole test for chronic limb threatening ischaemia patients with diabetes

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Introduction: Quantification of chronic limb threatening ischaemia (CLTI) is widely done using ankle brachial pressure index (ABPI), toe pressure (TP) or transcutaneous oximetry (TcPO₂). In diabetes, ankle level pressures are unreliable due to medial calcification of vessels. Ulcers and gangrene limit using TP and TcPO₂. We explored the Buerger's angle and the pole test; combined with continuous wave Doppler to identify CLTI.

Methods: Consecutive 40 limbs in 28 diabetes patients assessed. ABPI was assessed following standard protocol. With the Doppler probe placed over ankle level anterior tibial and posterior tibial arteries sequentially, legs were slowly elevated until the signal was lost. The leg elevation angle (with femur greater trochanter as the pivot point) and the heights were documented, and the highest values analysed.

Results: Majority were males [67.8% (19)]. Mean age was 64.14(39-83). Five (17.9%) had chronic kidney disease. Thirteen limbs (32.5%) were asymptomatic; 8(20%) had rest pain and 24(60%) had tissue loss. ABPI (0.38 – more than 1) was categorized as <0.4, 0.4-0.59, 0.6-0.79, 0.8 and more. The angle (12- 90 degrees) was categorized as < 30, 30-60 and 60-90. Height ranged 21-90cm. Linear regression reveal significant difference between ABPI, and Buerger's angle ($r= 0.467$, $p= 0.002$) and the height ($r = 0.440$, $p = 0.004$). Angle categories are also significantly different($p=0.034$).

Conclusions: Leg elevation angle and pole test does not correlate with ABPI in this sample. These tests may be more accurate, and easier to perform than ABPI. However larger samples and follow up are necessary for its validation and implementation.

Keywords: Chronic limb threatening ischaemia, Buerger's angle

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