

Transcutaneous oximetry but not arterial toe blood pressure predicts macular thickness in patients with chronic diabetic foot ulcers

Anders Sellman¹, Magnus Löndahl², Sten Andreasson², Per Katzman² ¹Department of Ophthalmology, Helsingborg Hospital, Sweden, ²Inst for Clinical Sciences, Lund University, Lund, Sweden

Background: Micro- as well as macrovascular complications are more prevalent in diabetic patients with chronic foot ulcers. Retinopathy is considered to be a microvascular complication and diabetic macular edema is an important risk factor for visual impairment. The aim of the present study was to evaluate if arterial toe blood pressure (TBP) or transcutaneous oximetry (PtcO₂) in the foot could predict increased macular thickness. Method: Macular thickness was prospectively measured using optical coherence tomography technique. Patients were classified as ischemic or non-ischemic according to PtcO₂ at dorsum of the foot (predefined cutoff level ≤ 55 mm Hg) and TBI (predefined cutoff level ≤ 70 mm Hg). Results: Twenty patients (40 eyes) with a median diabetes duration of 22 years and a A_{1c} of 6,35 % were included. All patients had at least one foot ulcer with a duration of at least three months despite of optimal treatment at a diabetes foot clinic. Median PtcO₂ was 45 mm Hg and median TBP 55 mm Hg. 14 and 13 patients were considered ischemic according to PtcO₂ and TBP measurements respectively. Macular thickness was 225 (204; 250) (Q1;Q3) microns in the ischemic PtcO₂ group as compared to 204 (179;223) microns in the non-ischemic (p=0,036) and 218 (203;241) microns in the ischemic TBP group as compared to 197 (171;269) microns in the non-ischemic group (p=0,41). Conclusion: PtcO₂, but not TBP might be a predictor of increased macular thickness in patients with chronic diabetic foot ulcers.