

# Extensive use of peripheral angioplasty, particularly infrapopliteal, in the treatment of ischaemic diabetic foot ulcers: clinical results of a multicentric study of 221 consecutive diabetic subjects

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**Abstract** Faglia E, Mantero M, Caminiti M, Caravaggi C, De Giglio R, Pritelli C, Clerici G, Fratino P, De Cata P, Paola LD, Mariani G, Poli M, Settembrini PG, Sciangula L, Morabito A, Graziani L (Internal Medicine Unit, Diabetology Centre, Policlinico Multimedica, Sesto San Giovanni, Milano; Centre for the Study and Treatment of Diabetic Foot Pathology, Abbiategrosso Hospital, Milano; Internal Medicine Unit, IRCCS Salvatore Maugeri Foundation, Pavia; Endocrinology and Metabolism Unit, Diabetic Foot Centre, Villa Berica Hospital, Vicenza Italy; Diabetology Centre and Vascular Surgery Division, S. Carlo Borromeo Hospital, Milano; Diabetology Centre, 'Felice Villa' Hospital, Mariano Comense Como; Department of Medicine, Surgery and Dentistry, S. Paolo Hospital, University of Milan, Cardiovascular Catheterization Laboratory, 'Citta' di Brescia' Hospital, Brescia, Italy). Extensive use of peripheral angioplasty, particularly infrapopliteal, in the treatment of ischaemic diabetic foot ulcers: clinical results of a multicentric study of 221 consecutive diabetic subjects. *J Intern Med* 2002; 252: 225–232.

**Objectives.** To evaluate the feasibility, technical effectiveness and limb salvage potential of percutaneous transluminal angioplasty (PTA), particularly infrapopliteal, in diabetic subjects with ischaemic foot ulcer.

**Design.** Intervention study with PTA in consecutive series.

**Setting.** Six Diabetology Foot Centres and one Cardiovascular Catheterization Laboratory in Italy.

**Subjects.** Two hundred and twenty-one consecutive diabetic subjects hospitalized for ischaemic foot ulcer.

**Interventions.** Peripheral arterial occlusive disease (PAOD) was investigated by means of foot pulses assessment, ankle-brachial-index (ABI), transcutaneous oxygen tension (TcPO<sub>2</sub>) and duplex scanning. If non-invasive parameters suggested PAOD, angiography was performed and a PTA was carried out during the same session.

**Main outcome measures.** PTA feasibility, improvement of ABI and TcPO<sub>2</sub>, limb salvage rate, clinical recurrence.

**Results.** On angiography, two patients had stenoses which were <50% of the vessel diameter. PTA was performed in 191 (85.3%) of the 219 subjects with stenoses >50%, even when longer than 10 cm and/or multiple/calcified. In 11 patients (5.8%) PTA was performed in the proximal axis exclusively, in 81 (42.4%) patients in the infrapopliteal axis exclusively and in 99 (51.8%) in both the femoropopliteal and infrapopliteal axis. Both ABI and TcPO<sub>2</sub> improved significantly after PTA (P < 0.0001). Clinical recurrence occurred in 14 subjects: 10 of whom underwent a second successful PTA. Of the 191 patients who underwent PTA, 10 (5.2%) underwent an above-the-ankle amputation.

**Conclusions.** PTA, including infrapopliteal, is feasible in most diabetic subjects with ischaemic foot