

Novel Infrapopliteal Artery Intervention Technique using 5Fr Heartrail Catheter with Coronary Balloon System in patients with Critical Limb Ischemia

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**Background** Because of the high prevalence of recurrence and technical difficulties, the Endovascular therapy (EVT) in infrapopliteal arteries are still challenging. **Method:** A total of 128 consecutive CLI pts were included. 39 pts underwent infrapopliteal intervention with 5Fr Heartrail catheter and 0.14 coronary balloon system. Under the successful wiring either by subintimal angioplasty or true lumen angioplasty using 035 soft Terumo wire, 5Fr Heartrail catheter was introduced. Procedural success, periprocedural complications and clinical outcomes up to 12 months were analyzed. **Results:** The baseline characteristics demonstrate that the mean age was  $67.3 \pm 7.5$  years old, and diabetes was in 76.9% (30/39). Out of 66 pts with infrapopliteal lesions, 58pts underwent tibial and 8 pts peroneal percutaneous transluminal angioplasty (PTA). Concomitant iliac PTA was performed in 3 pts (7.6%), femoral 14pts (35.8%) and popliteal 15 pts (38.4%). Eleven pts (21/60, 53.8%) had CTO lesions. Overall procedural success was achieved in 39 pts (38/39, 98.3%). Non-critical periprocedural complications were developed including 6 dissections (16.7%), 2 abrupt closure (3.3%), 2 no reflow (3.3%), 3 acute thrombosis (5.0%) and 2 perforation (3.3%). 5F Heartrail catheter was extremely useful to reduce acute recoil, and managing wire-induced perforation. At 6 month, only 5 pts underwent repeat PTA due to recurrent CLI (12.8%), 16 pts wound debridement (30%) and 2 pts partial amputation (5%). **Conclusion:** Infrapopliteal artery intervention in pts with CLI using 5Fr Heartrail catheter system and 0.14 coronary balloon system appears to be safe, showing excellent and durable immediate and mid-term clinical outcomes without critical complications.