Background: Thrombolysis is an appropriate treatment for acute arterial occlusion. There remains controversy as to whether thrombolysis before angioplasty helps to identify the underlying lesion and improve results for chronic ischemia of the lower extremity. We sought to investigate the feasibility of catheter-directed thrombolysis-assisted angioplasty for chronic lower limb ischemia.

Methods: Between July 2008 and December 2009, the data of patients with chronic lower limb ischemia undergoing catheter-directed thrombolysis-assisted angioplasty were retrospectively analyzed.

Results: Twenty consecutive patients (18 men with a mean age of 56.35 ± 8.5 years) underwent thrombolysis-assisted angioplasty for occlusion of a native artery (n = 18) or bypass graft (n = 2). The median duration of symptoms was 19 months (range: 3-48 months). Symptoms included disabling claudication in 12 patients, rest pain in 5 patients, and gangrene of the toes in 3 patients. Urokinase or recombinant tissue plasminogen activator as a thrombolytic agent was used before angioplasty. The mean length of occlusive lesions decreased significantly from 150 mm to 30 mm after thrombolysis (P < 0.01). Four patients had no change in their lesions. Improvement of Inter-Society Consensus for the Management of Peripheral Arterial Disease (TASC II) classification was achieved in 16 patients, with 14 TASC IIA lesions and 2 TASC IIB lesions after thrombolysis. Subsequent stenting was successfully performed in all patients. The ankle-brachial index increased significantly from 0.33 to 0.63 (P < 0.01). No perioperative deaths occurred. Morbidity included access site bleeding in 1 patient and distal embolization in 2 patients without further intervention. The primary patency rate at 1 year was 95%, with a median follow-up time of 19 months.

Conclusions: Catheter-directed thrombolysis-assisted angioplasty is a safe and effective treatment in some patients with chronic lower limb ischemia. It may reduce the magnitude of the lesion and simplify the expected intervention procedures.