

Abstract

Background: Exercise therapy following endovascular treatment (EVT) is important for patients with peripheral artery disease (PAD); however, continuous exercise therapy is difficult to be performed in clinical practice. This study aimed to investigate the association between the implementation of home-based exercise using pedometers after EVT and 1-year clinical outcomes.

Methods: This multicenter observational prospective cohort registry included patients with PAD complaining of intermittent claudication who underwent EVT for aortoiliac and/or femoropopliteal artery lesions between January 2016 and March 2019. Patients were instructed to perform home-based exercises using a specific pedometer after EVT. The study population was divided into good and poor recording groups according to the frequency of the pedometer measurements. The good recording group was defined as those who completed $\geq 50\%$ of the prescribed daily pedometer recording during the follow-up period. The poor recording group was defined as those with an inability to use a pedometer and/or who completed $< 50\%$ of the prescribed daily pedometer recordings. The primary outcome was 1-year major adverse events (MAE), defined as a composite of all-cause death, non-fatal myocardial infarction, non-fatal stroke, target vessel revascularization, and major amputation of the target limb.

Results: The mean age was 74.4 years; 78% were male. A total of 623 lesions were analyzed (58.7% aortoiliac, 41.3% femoropopliteal). At 1 year, a lower cumulative incidence of MAE was observed in the good recording group compared to that in the poor recording group (10/233 [4.3%] vs. 35/267 [13.7%] patients, respectively; $p < .001$). Multivariate Cox regression analysis showed that patients in the good recording group had a lower hazard ratio for 1-year MAE (0.33; 95% confidence interval, 0.16–0.68; $p = .004$) than that in the poor recording group.

Conclusions: Good self-recording of pedometer measurements was associated with favorable prognosis in patients with PAD following EVT.