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Short-term Walking Outcomes in Diabetic and Non-diabetic Unilateral Transtibial Amputees

Dong Gyu Kwak^{1,1**}, Min cheol Chang^{1,1†}, Dong Gyu Lee^{1,1†}

Department of Physical Medicine and Rehabilitation, College of Medicine, Yeungnam University¹

Background

The prevalence of diabetes and diabetic amputations is increasing. Patients with diabetes may have muscle atrophy, sensory deficits, depression, and cognitive impairment. Therefore, diabetes may influence walking ability after amputation.

Objective

This study compared short-term walking outcomes in diabetic amputees after prosthesis fitting to that in non-diabetic amputees.

Methods

We retrospectively investigated walking outcomes at 3 months after starting gait training with a prosthesis. Outdoor and indoor independent walking for 100 m without assistive devices was evaluated. Walking ability with a quadripod cane was also evaluated.

Results

At 3 months after gait training with a prosthesis, only 2/18 (11.1%) and 3/18 (16.7%) diabetic amputees were capable of independent outdoor and indoor walking without assistive devices, respectively. However, 21/26 (80.8%) and 24/26 (92.3%) non-diabetic amputees were capable of independent outdoor and indoor walking without assistive devices, respectively. With a quadripod cane, 7 (38.9%) and 9 (50.0%) diabetic amputees and 24 non-diabetic amputees (92.3%) were capable of outdoor and indoor walking, respectively. Outdoor/indoor walking outcomes without assistive devices or with a quadripod cane were significantly different between diabetic and non-diabetic amputees.

Conclusion

After 3 months of prosthesis training, significantly more non-diabetic amputees were capable of indoor/outdoor walking, compared with diabetic amputees.