Efek *Wearable Tubing Assitive Walking Device* Terhadap Kinematik Berjalan saat Fase *Swing* pada Penderita Pasca Stroke

Tri Rahayu Septyaningrum, Subagyo, Ditaruni Asrina Utami, I Putu Alit Pawana

ABSTRAK

Latar Belakang: Stroke dapat menyebabkan gangguan gaya berjalan. Kerusakan pada sistem neuromuskuler menyebabkan spastisitas, kontraktur, dan kelemahan, yang dapat mengakibatkan penurunan kecepatan berjalan, peningkatan kebutuhan energi, dan peningkatan risiko jatuh. Wearable Tubing Assistive Walking Devices (WTAWD) adalah karet gelang konvensional yang dikembangkan untuk pasien stroke.
Tujuan: Penelitian ini mempelajari pengaruh WTAWD terhadap kinematika gaya berjalan selama fase mengayun (sudut fleksi pinggul dan lutut, dorsofleksi pergelangan kaki) pada pasien stroke.
Metode: Sebelas pasien berusia antara 30 dan 60 tahun yang menderita stroke subakut dan kronis tanpa gangguan kognitif terdaftar dalam penelitian ini. Semua pasien diberikan WTAWD dan dievaluasi dengan alat analisis gaya berjalan di RSUD Dr. Soetomo Surabaya. Data tersebut dinilai setelah masa adaptasi gerak diri pada hari yang sama, dan dibandingkan antara tanpa WTAWD dan dengan WTAWD.
Hasil: Tidak terdapat perbedaan yang signifikan sudut fleksi pinggul, fleksi lutut, dan dorsofleksi pergelangan kaki selama fase mengayun antara tanpa WTAWD dan dengan WTAWD.
Kesimpulan: Hasil penelitian menunjukkan bahwa WTAWD tidak efektif dalam meningkatkan gaya berjalan selama fase mengayun.

Kata kunci: Stroke, Wearable Tubing Assistive Walking Device, gaya berjalan, kinematik, fase mengayun.

Effect of Wearable Tubing Assistive Walking Device on Gait Kinematic During Swing Phase for Stroke Patients

Tri Rahayu Septyaningrum, Subagyo, Ditaruni Asrina Utami, I Putu Alit Pawana

ABSTRACT

Background: Stroke can cause gait impairment. Damage to the neuromuscular system results in spasticity, contractures, and weakness, which can result in decreased walking speed, increased energy requirements, and increased risk of falls. Wearable Tubing Assistive Walking Devices (WTAWD) is a conventional elastic band developed for stroke patients.
Objective: This study investigated the effects of WTAWD on gait kinematics during swing phase (the angle of hip and knee flexion, ankle dorsiflexion) in patients with stroke.
Methods: Eleven patients between 30 and 60 years of age having subacute and chronic stroke with no cognitive impairment enrolled in this study. All patients were given WTAWD and evaluated with gait analyzer at RSUD Dr. Soetomo Surabaya. The data were assessed after adaptation period to proper motion on the same day, and compared between without WTAWD and with WTAWD.
Results: There were no significance difference on the angle of hip flexion, knee flexion, and ankle dorsiflexion during swing phase between without WTAWD and with WTAWD.
Conclusion: The results indicate that WTAWD is not effective in improving gait during swing phase.

Keywords: Stroke, Wearable Tubing Assistive Walking Device, gait, kinematic, swing phase.