Dynamic Variable Exoskeleton Gait Training Following Spinal Cord Injury in Inpatient Rehabilitation: A Case Series.

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Promoting gait adaptability is critical to improve walking recovery following spinal cord injury (SCI).

Advanced robotic exoskeleton technology of contemporary devices allows for overground exoskeleton gait training (OEGT) to include multidirectional stepping, variable device assistance, and resistance with step trajectory.

RESULTS

Contemporary exoskeleton devices allow for dynamic stepping tasks beyond passive and active assistance gait training.

Dynamic stepping tasks were incorporated during OEGT for 3 patients with AIS D tetraplegia SCI to maximize gait training progression during inpatient rehabilitation.

Physiologic and patient-reported indicators of cardiovascular intensity suggest dynamic stepping tasks during OEGT were tolerated without undue burden.

CONCLUSIONS

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<th>Table 1. OEGT Session Characteristics</th>
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METHODS

Design: Case Series
Setting: Inpatient Rehabilitation Facility
Participants: 3 patients [males, aged 29 to 51 years, with tetraplegia, ASIA Impairment Scale D (AIS D)]
Outcome Measures:
OEGT Session Data:
• Heart Rate
• Walk Time
• Total Steps
• Rate of Perceived Exhaustion (RPE)
• Heart Rate Intensity
• Total Session Count
• Functional Mobility:
• Walking Index for Spinal Cord Injury (WISCI-II)
• 10 meter walk test (10mWT)