

Abstract

- Title:** Case study of use of a motorized exoskeleton as an orthotic aid in the case of post-traumatic paraplegia.
- Objectives:** Assessment of the effectiveness of using a motorized orthosis to improve motor functions of a patient diagnosed with paraplegia due to a spinal cord injury.
- Methods:** The theoretical part introduces the issue of post-traumatic spinal cord injury and related paraplegia and follows a description of the function of the motorized exoskeleton (and comparable devices) as an orthotic device. The practical part describes the case of a patient with post-traumatic paraplegia of the lower limbs, which includes anamnesis, diagnosis, planned therapies and especially the course of the therapy with the exoskeleton, including its settings, application, walking training and data collection.
- Results:** There was a remarkable progress in the patient's gait achievement during the therapy with the use of the exoskeleton. These advances were based on the data recorded by the software during the individual therapies with the exoskeleton. In addition to gait therapy with an exoskeleton, the patient underwent other supportive therapies, leading to an overall significant improvement in the patient's physical condition and motor skills. After completing the prescribed therapies with the exoskeleton, the patient continues in the rehabilitation center with other therapies.
This case study was based on one month internship at the Rehabilitation Center Kladruby.
- Keywords:** case study, paraplegia, spinal cord injury, orthosis, wearable assistive devices; Wearable Power Assist Locomotor; exosuit; mobility augmentation; exoskeleton