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Title

Postoperative treatment concepts in comparison (meta-analysis) - what makes sense, what has to be considered during post operative treatment?

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Summary

Currently, there are 3 follow-up treatment concepts published after implantation of osseointegrated prosthesis following transfemoral amputation. There are mainly differences in starting, acceleration and duration of the process. There are no comparative studies to evaluate the outcome available.

Introduction/ basics

Osseointegrative prosthetic procedure after transfemoral amputation of the lower extremity is a special treatment option. Physiotherapeutic treatment is important for the functional outcome. A literature-based analysis of existing follow-up treatment protocols was performed to provide a literature-based recommendation for postoperative rehabilitation procedures.

Material method; implementation/ process

The Databases PubMed and Google scholar were screened, using the following search terms: (osseointegrat* OR endo-exo OR boneanchored OR bone anchored) AND (prothe*) AND (leg OR lower limb* OR lower extremit* OR transfem* OR transtib*) AND (rehabilitation). 113 publications were found in this context. 10 of them met the inclusion criteria. The Cochrane risk of bias tool was used to evaluate the publications# quality.

Results

Three systematic rehabilitation protocols after transfemoral amputation have been described so far: Osseointegrated Prostheses for the Rehabilitation of Amputees protocol, Osseointegration Group of Australia Accelerated protocol and Radboud Amputation: rehabilitation protocol for endo-exo femoral prosthesis. There are mainly differences in the duration of the rehabilitation

protocols and acceleration of load increase. The quality of published studies is limited due to the high risk of bias. A concept for long-term rehabilitation has not been described yet.

Discussion/ conclusion; conclusion for the practice

There are various protocols for rehabilitation after treatment with osseointegrative prosthesis. Gradually increasing axial weight bearing started shortly after surgery; step-by-step gait training, adaptation of the prosthesis to the new biomechanics and critical patient selection as well as pre-operative training were useful parameters for successful rehabilitation. Controlled comparative studies, standardised outcome measurements or comparative studies between different protocols are not available. Procedures for multi-level longterm care have not been described in the literature so far.

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