CORRESPONDENCE

The Improvement of Walking Ability Following Stroke

A Systematic Review and Network Meta-Analysis of Randomized Controlled Trials

by Prof. Dr. rer. medic. Jan Mehrholz, Prof. Dr. med. Marcus Pohl, Prof. Dr. med. Joachim Kugler, and Prof. Dr. rer. medic. Bernhard Elsner in issue 39/2018

Rehabilitating Walking Ability After Stroke

In recent years, the authors published numerous meta-analyses and thus made an excellent contribution to an improved understanding of the differential therapeutic uses of intelligent mechanical training systems (robots) in the rehabilitation of walking ability and arms. For this reason, the research question and processing of their recently published study, entitled “The improvement of walking ability following stroke,” seems strange.

In a systematic review of 95 randomized controlled trials including adult stroke patients unselected for severity of disability, the authors compare different interventions. The endpoints were gait velocity, distance walked and maximum walking distance. The result is sobering in that most of the reported interventions did not yield any significant improvements. Only exercising/training using end effector systems led to weakly significant improvements in gait velocity.

This meta-analysis has been conducted absolutely soundly. The problem, however, lies in the type of research question and the range of included patients. The crucial parameter in the rehabilitation of severely affected patients with hemiparesis after stroke is to restore the ability to walk autonomously, with or without assistive equipment. Improving walking speed is a secondary aspect that gains relevance only later, in patients whose ability to walk has been largely restored.

I can follow the authors’ argument (1) that highly repetitive walking therapy (for patients who are already able to walk) probably effectively improves their gait velocity. But unfortunately this study cannot contribute anything to the above mentioned key problem of how to rehabilitate walking ability after stroke. On this background, the title of the article (1) is misleading and should, in view of the convincing evidence to date, not be misunderstood in the sense of therapeutic nihilism for the problem of regaining the ability to walk after a stroke.

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References

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In Reply:

We thank our correspondents for their valuable feedback to our article. In the protocol of the study, which was published before our article, we had planned as our primary endpoint gait velocity and as our secondary endpoints the ability to walk and maximum walking distance. Our statistical analysis of the systematically collected data was done in accordance with this predefined method (2). The only deviation from the protocol consisted in the fact that for the secondary outcome measure, ability to walk, no network meta-analysis was undertaken because of a statistically relevant inconsistency in the data. We therefore adhered to the study protocol and also the statistical-methodological international specifications in the PRISMA protocol (PRISMA, Preferred Reporting Items for Systematic Reviews and Meta-Analyses).

All described endpoints have been described in the literature as important parameters of the rehabilitation of the ability to walk after stroke. Gait velocity is a highly sensitive, valid, and highly reliable marker for the recovery of the ability to walk in patients with mild or very severe impairment after stroke. We think that our research question and inclusion criteria are unproblematic. We included important covariables, such as severity of illness, in our analysis and considered these in the evaluation. Altogether we conducted our analysis with the intention of being open to the result. We attempted to describe the result neutrally. We therefore think that the title reflects the subject of the article adequately.

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Conflict of interest statement

The authors of both contributions declare that no conflict of interest exists.