E-Poster

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Intensive Visual Simulation for Treatment of Chronic Phantom Limb Pain in Persons With Lower Limb Amputation: A Randomized Controlled Trial

Topic: Pain

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BACKGROUND

Phantom limb pain (PLP) is the feeling of pain in a body part that no longer exists. Phantom limb pain is difficult to treat, and pharmacotherapy has considerable risks of side effects. Thus, there is an urgent need for effective non-pharmacological treatment alternatives. One such alternative is "mirror-therapy" (MT), where a mirror-box creates an illusion (visual feedback) of normal movement in the affected limb. However, in MT, there is usually no intended movement of the amputated limb. In addition, MT is time consuming and difficult to implement with bilateral and lower limb amputations. Assess the effectiveness of an innovative and digital type of visual feedback therapy: "Intensive Visual Simulation" (IVS) for treatment of PLP in persons with amputation.

METHODS

For treatment of PLP, the IVS4 system (Dessintey, St-Jean-Bonnefonds, France) is used. With IVS, the patient views a pre-recorded film of a moving intact limb in place of the amputated limb on a large data-screen, while the amputated limb is hidden under the screen. Unlike MT, the patient is planning and executing movements with the stump that "mirror" the pre-recorded movements of the digital limb on the screen. Patients with lower limb amputation and PLP are randomized to either two sessions of IVS per week (20 min. session-1) for eight weeks (n = 4) or Usual Care (UC) for eight weeks (n = 4). Phantom pain intensity is monitored by a 10 cm Visual Analog Scale (pain diary) for 14 days prior to start of IVS/UC (Baseline) and for 14 days post IVS/UC (Endpoint).

RESULTS

Preliminary data are reported for the first cohort of participants (n = 8) with lower limb amputation. The study is ongoing and still recruiting. Further data are presented at ISPRM-2025. The mean VAS pain-score was reduced by 40.8 % from Baseline to Endpoint for IVS treatment but remained unchanged (+ 5.6%) for the UC treatment. The maximum VAS pain scores recorded over the 14-day Baseline and Endpoint periods were reduced by 27.5 % following the IVS treatment, but unchanged following UC. No side effects were reported.

CONCLUSION

Intensive Visual Simulation therapy for PLP is a promising alternative to pharmacotherapy. As little as 16 IVS-sessions give considerable pain reduction. IVS-therapy is rapid and can be used with bilateral and lower limb amputation. The present study is the first RCT with IVS for people with amputation and PLP.

Statement of Disclosures

None

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