Oral Communication

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Role of Virtual Reality in Balance Training in Patients With Spinal Cord Injury: A Prospective Comparative Pre-Post Study

Topic: Virtual Reality

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BACKGROUND

Prospective comparative pre-post study.

Training with virtual reality (VR) based gaming has a role to play in improving balance in patients with spinal cord injury (SCI). The aims of this study are:

(1) To evaluate the effects of game-based VR training program for trunk postural control and balance in patients with SCI. (2) To assess the results according to the motor completeness (severity) of lesions using the American Spinal Injury Association Impairment Scale (AIS).

METHODS

Patient with SCI (traumatic and non traumatic) for < six months were included in this hospital based study. Patients were divided into two groups. Experimental group (EG) consisting of 21 patients and control group (CG) consisting of 12 patients. Both group underwent the conventional rehabilitation program. An additional semi immersive VR based training with the focus on balance rehabilitation was given to the EG 5 days per week x 3 weeks using the 'Rhetoric'. The outcome measures were the Berg Balance scale, Balance section of the Tinetti Performance Oriented Mobility assessment scale (POMA-B) and the Functional reach score (FRS).

RESULTS

Both group consisted of young participants (20 years and 30.5 years respectively) and predominantly men (> 80%). One third of them had tetrapegia and two third had paraplegia. Between groups analysis showed no statistically significant differences in the main effects between groups. (p-value: BBS, 0.396; POMA-B, 0.238; FRS, 0.294). Hence the EG did not show significant improvement in the trunk and posture at the end of training sessions than the CG group. Similarly no significant differences were observed according to the severity (completeness) of SCI in the between group analysis using the AIS (A/B *vs.* C/D). However a trend of improvement was noted.

CONCLUSION

Virtual reality is a promising adjunctive therapy for balance rehabilitation in patients with SCI.

Statement of Disclosures

None

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