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Effects of cervical setting exercise on pain intensity, cervical range of motion, and craniocervical angle in patients with neck pain: a preliminary study

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Background: Cervical setting exercise (CSE), an isometric setting exercise with ceiling-mounted sling to strengthen the deep flexor muscle in the cervical spine, is prescribed to decrease pain intensity and improve the range of motion in patients with neck pain. Although many clinicians have utilized CSE to treat patients with neck pain, clinical evidence of the effectiveness of CSE is not sufficient for clinical application.

Objective: This study aimed at providing clinical evidence of the effectiveness of CSE in comparison to that of a combination of CSE and craniocervical exercise (CCFE) in patients with neck pain, on the basis of the visual analog scale (VAS) score, cervical range of motion (CROM), and craniovertebral angle (CVA).

Methods: This study was a single-blind, randomized, comparative trial. Twenty patients were allocated into either the CSE or the CCFE group. Before and after the intervention, we measured pain intensity, CROM, and CVA in the sitting and standing positions. Mann-Whitney and Wilcoxon's signed-rank tests were used to analyze our data.

Results: Both groups showed significant improvements in the VAS score, cervical right lateral flexion, and CVA in the standing position (both, $p < 0.05$). However, only the CSE group showed significant improvements in cervical extension ($z = -2.69$; $p < 0.05$), cervical left lateral flexion ($z = -2.54$; $p < 0.05$), cervical right rotation ($z = -2.54$; $p < 0.05$), and cervical left rotation ($z = -2.64$; $p < 0.05$). The improvement in the VAS score was significantly higher in the CSE group ($z = -2.30$; $p < 0.05$) than in the CCFE group.

Conclusions: CSE may relieve cervical pain and improve CROM and CVA in the standing position in patients with neck pain. The results of this study will guide future research in identifying the effectiveness of CSE.

Biography

SeungMin Kim is a Researcher in the Applied Neuro-Dynamics Laboratory ,and Major in Rehabilitation Science. He has done PhD course at Korea University Graduate School, Seoul, Republic of Korea. His Research interests are Pain control, Therapeutic exercise, Orthopedic physical therapy, and Motor control., And he Worked at the Department of Physical Medicine and Rehabilitation of Korea University Anam Hospital..

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