

## Effectiveness of neuromobilization in patients with cervical radiculopathy

Sahreen Anwar, Arshad Nawaz Malik, Imran Amjad

Departments of Physiotherapy and Physiology, Chinoit General Hospital, Faisaabad, Riphah College of Rehabilitation Sciences and Riphah International University, Islamabad, Pakistan

**Objective:** To determine the efficacy of neuromobilization in the treatment of cervical radiculopathy.

**Methodology:** This randomized trial included 30 patient recruited through purpose sampling technique and study lasted for 6 months Patients was assigned to 2 groups: conventional treatment consisted of intermittent cervical traction, moist hot pack, isometric neck exercises, was provided to both groups. Participants in the experimental group received neural mobilization as an

additional treatment. The measurements were taken in the form of visual analog scale (VAS), and neck disability index (NDI).

**Results:** The NDI showed  $p < 0.05$  suggesting that there was a significant difference in both groups.

**Conclusion:** Neurodynamics together with conventional treatment was an effective treatment approach in treating cervical radiculopathy. (Rawal Med J 201;40: 34-36).

**Key words:** Cervical radiculopathy, neuromobilization, Neck Disability Index, NDI.

### INTRODUCTION

Neck pain can be axial neck pain, radioculopathy or myelopathy.<sup>1,2</sup> Radiculopathy results from compression of one or more nerve roots or inflammation including segmental sensory loss, motor loss, or impaired reflexes.<sup>2</sup> Spondylosis or disc protrusion caused 70% of the cases.<sup>3</sup> In addition to pain, there is functional disability.<sup>4</sup> Risk factor include old age leading to degenerative process, decreased height of vertebrae and ultimately neural compression. Less common causes include spinal tumor, cervical synovial cyst, chondromatosis in the cervical facet joint, giant cell arteritis, and spinal infections.<sup>5</sup> Imaging modalities, such as x-ray, CT scan MRI and electro physiologic testing help in diagnosis.<sup>6</sup>

Conservative management significantly improves patient's condition. It includes rest, immobilization, NSAIDS, muscle relaxants, physical therapy and epidurals.<sup>6</sup> A short-term, symptomatic improvement of radicular symptoms may occur after the use of epidural corticosteroids.<sup>8</sup> Neurodynamics aims to restore the mechanics of the nerve and nervous system. Its main components are mechanical interface, neural structures and innervated tissues.<sup>9</sup> The of this study was to determine the efficacy of neuromobilization

in the treatment of cervical radiculopathy.

### METHODOLOGY

The study was carried out at District Headquarters Hospital, Faisalabad, Pakistan during a six month period and included 30 patient with symptoms of radioculopathy who were recruited through purpose sampling technique. Patients with infectious disease, trauma and other pathologies were excluded. Written informed consent was taken from all and they were assigned to 2 groups randomly. The experimental group received moist hot packs for 10 minutes, cervical isometrics 3 sets with 10 repetitions and a hold of 5 seconds, gentle stretching exercises of all muscles of affected side, a manual traction with a hold of 20 seconds in 3 sets. They were treated with a set of 10 repetitions of neural mobilization in comfortable supine lying position. The control group received all treatment except the neural mobilization.

The measurements were taken in the form of visual analog scale (VAS), and neck disability index (NDI). NDI consists of 10 items each with a score up to 5, for a total score of 50. The NDI score is graded as follows: 0-4 no disability, 5-14 mild disability, 15-24 moderate disability, 25-34 severe disability and 35-over complete disability

## RESULTS

A total of 30 patients participated in the study divided in controlled and randomized groups.

**Table. Post treatment p values between the groups.**

Functional activity	P value
Pain intensity	.046
Personal care	.079
Reading	.001
Headache	.001
Concentration	.001
Work	.002
Recreation	.000
Lifting	.296
Driving	.135
Sleep	.072

The mean NDI score was  $1.533 \pm .5164$  ( $p=0.00$ ). Several functional variables showed significant differences in two groups (Table).

## DISCUSSION

A widely used treatment for cervical radiculopathy is traction, however, enough evidence is not available about its efficacy.<sup>10</sup> No conservative treatment strategy is found superior to other.<sup>11</sup> The effect of different maneuvers was mild to moderate; very few had advantages over others when compared in trials with a low risk for bias. A large number of the clinical trials of the various treatment options reported limited or conflicting findings and called for more high-quality research.<sup>12</sup> Neuro mobilization is one of the conservative methods used in physical therapy.<sup>4</sup> It is an innovative tool which involves decompression of nerves, using different neural mobilising techniques and patient education techniques.<sup>13</sup>

It is likely that a nerve can become "held" or "stuck" in an area of ground substance that has become viscous or gel-like, or in areas of inflammation.<sup>4</sup> The aim of neurodynamics is to restore dynamic balance between movement of neural tissues and surrounding mechanical interfaces reducing pressure on the neural tissue and maintaining physiological function.<sup>11</sup> Conservative management including nonneural tissue interventions, and neurodynamic mobilization techniques can be

effective in addressing musculoskeletal presentations of peripheral neuropathic pain.

## CONCLUSION

Addition of neurodynamics to a multimodal treatment programme yielded significant additional benefit for function, and disability in patients with cervical radiculopathy.

### Author contributions:

Conception and design: Sahreen Anwar, Arshad Nawaz Malik  
 Collection and assembly of data: Sahreen Anwar  
 Analysis and interpretation of the data: Sahreen Anwar  
 Drafting of the article: Sahreen Anwar  
 Critical revision of the article for important intellectual content: Arshad Nawaz Malik  
 Statistical expertise: Arshad Nawaz Malik  
 Final approval and guarantor of the article: Imran Amjad  
**Corresponding author email:** Sahreen Anwar:  
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