

Comparative study of the diagnostic value of EMG-NCV and MRI in patients with radicular pain in the neck and back

Abstract

Introduction: *Backbone radiculopathy is the most common causes of back pain and pain of upper or lower limb. For the diagnosis of radiculopathy we can note Radiography (MRI or X-ray) and electrical diagnostic measures, including EMG-NCV. Each diagnostic methods mentioned have their own limitations and a comparative study between these methods is essential for accurate diagnosis of patients with clinical symptoms of radiculopathy. This prospective cross-sectional study is designed to determine the accuracy of EMG-NCV in patients diagnosed with cervical and lumbar radiculopathy are compared with MRI.*

Methods & materials: *In this cross-sectional study, 96 patients with radicular back pain who were referred to neurology clinic of Ardabil Fatemi Hospital, were enrolled. 44 patients had neck pain and the rest had Lower back pain. All the patients had MRI, EMG and NCV results in their files so the present study did not impose any excessive costs to the patients. Clinical examintion was used as the diagnostic gold standard. The results were classified in separate tables, and sensitivity, specificity, positive predictive value and negative predictive value were calculated for each test.*

Results: *The results of this study indicated a relatively high diagnostic value of cervical radiculopathy for EMG test and it had a relatively high compatibility with the results of MRI test. Unlike EMG, NCV test didn't show an attributable agreement with MRI results.*

Conclusion: *From this study we can conclude that EMG test in patients with radicular pain can be a helpful diagnostic test for spine radiculopathies. It was also found that the NCV test in the diagnosis of radiculopathy of the spine is not a good value.*

Keywords: *radiculopathy, EMG, MRI, NCV*