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Accuracy of physical examination for lumbosacral radiculopathy in chronic and non-chronic state.

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Objective
To investigate the diagnostic accuracy of a 2 physical examination, Bragard test and straight leg raise (SLR) test, in patient with magnetic resonance imaging (MRI) and electrodiagnostic evidence of nerve root compression in chronic and non-chronic state.

Method
The study involved 182 participants with signs and symptoms consistent with lumbosacral radiculopathy confirmed by magnetic resonance imaging (MRI) and electrodiagnostic study. Patients were evaluated from March 2015 to March 2018 in the physical medicine and rehabilitation outpatient clinic. Bragard test and straight leg raise (SLR) test were performed during the assessment of all the patients. They were divided in two groups by the symptom duration lasting more than 12 weeks in chronic group and less than 12 weeks in non-chronic group. Accuracy of clinical tests in detecting MRI and electrodiagnostic study was evaluated using sensitivity, specificity, and positive and negative likelihood ratios (LR).

Results
The diagnostic performance of clinical tests using MRI and electrodiagnostic study as reference showed rather disappointing value. The SLR test had the highest sensitivity in detecting Edx during non-chronic group was 84.1%, but specificity was 53.1% low. In patients with symptom duration of less than 12 weeks, diagnostic accuracies of both tests increased compared to the chronic state.

Conclusions
In general, individual physical test used to identify lumbar radiculopathy shows poor diagnostic accuracy. However Bragard and SLR tests are easy to perform and combination of those tests may improve diagnostic accuracy. Clinical assessments confirmed by electrodiagnostic study show higher sensitivity than MRI in general. As predicted, both physical examination revealed higher sensitivity in the non-chronic phase of disease compare to the chronic state, but there is no statistical difference in specificity.

Table 1. Sensitivity, Specificity, Positive and Negative LRs in chronic group

	Sensitivity	Specificity	Positive LRs	Negative LRs
MRI				
Bragard test	60.9%	55.6%	1.37	0.7
SLR test	56.5%	50%	1.13	0.87
EDx				
Bragard test	66.7%	46.7%	1.25	0.71
SLR test	71.9%	43.3%	1.27	0.65

EDx: electodiagnosis, SLR test: straight leg raise test, LRs: Likelihood Ratios

Table 2. Sensitivity, Specificity, Positive and Negative LRs in non-chronic group

	Sensitivity	Specificity	Positive LRs	Negative LRs
MRI				
Bragard test	69.9%	59.1%	1.17	0.51
SLR test	67.1%	45.5%	1.23	0.72
EDx				
Bragard test	79.4%	46.9%	1.5	0.44
SLR test	84.1%	53.1%	1.79	0.3

EDx: electodiagnosis, SLR test: straight leg raise test, LRs: Likelihood Ratios