CORRELATIONAL RELATIONSHIP WITH CLINICAL AND NEUROIMAGING METHODS IN PATIENTS WITH SPINAL PAIN

Abstract: The most common neuroimaging pathology is lumbosacral dorsopathy; dorsopathy includes a variety of heterogeneous groups of diseases, united by the cause of back pain: vertebrogenic and discogenic radiculopathy.

When assessing the condition of patients with dorsopathy practitioners use a number of standard examinations (laboratory, neurophysiological), but the neuroimaging value of the study consists in a detailed, layer-by-layer, from any angle study of all the anatomical features of the structure of the spinal column (spinal cord, degeneration of vertebrae, discs).

Objective: To perform correlation between clinical and neurological and neuroimaging examination methods for differential diagnosis of lumbosacral radiculopathies in dorsopathies and compliance with localization.

Material and methods of study. Patients, who were treated in the neurology department of Samara State Medical University from 2022 to 2023, with complaints of lumbosacral pain aged 30 to 60 years, which duration of disease on the anamnesis was from 2 to 20 years; in number 63 patients, where 66% were men, from the total number examined were subjected to examination. Of the total sample of patients, 28 were new admissions and the remaining patients had previously received conservative treatment in the department. The first important step (with the consent of the patients) was the traditional clinical and neurological examination (examination of the patients), where motor and sensory changes were detected. A numerical rating scale (NRS) was used to assess pain syndrome intensity (11 points, where 0 was no pain and 10 was the most severe pain). All patients underwent neuroimaging (MRI) of the spine in frontal and sagittal planes on a Signa Explorer (GE) USA (2020) with 1.5 Tesla, slice thickness 3 mm, MSCT "Revolution EVO (GE)" USA (2020), where the slice thickness is 1.25 mm, voltage 120-170 mA. Statistical processing of the results of the ongoing study was recorded on an individual computer. Using Statistica for windows software (2012), Mann-Whitney criteria were analyzed, correlation index was calculated using traditional Spearman criteria.

Results of the study. The patients admitted to the neurology department of Samara State Medical University with the chief complaint of lumbosacral pain at the time of admission had the following clinical findings. Painful symptom was not limited to lumbosacral region. Painful
sensations were also defined in the buttock region, sometimes with irradiation along the posterior longitudinal line to the lower leg. Pain tended to increase with movement (walking, changing posture: sitting-standing, body rotation). OH patients were divided into two groups: first group - 35 patients with radiculopathy (new patients); second group - 28 patients with radicular pain syndrome of the first time, without radiculopathy.

Therefore the presence of changes in neuroimaging indices in the intergroup comparison showed the higher rate of pathological process in patients with longer duration of disease and less expressed intensity of pain, this index may be considered a compensating factor, the same can be applied to changes of the spine structure where luteosis (displacement) was more marked in group 1 patients while deformity scoliosis was characteristic for group 2. Evaluation of neuroimaging parameters of changes and duration (duration) of disease with the frequency of exacerbations revealed that the presence of spinal deformity listhesis, herniation/protrusion in such patients (group 1) increases the frequency of exacerbations at least 2 times a year, which is statistically significant as $p < 0.001$. In addition, patients in Group 1 have a longer interval for exacerbations of lumbosacral pain than patients in the same group for less pronounced pathological degenerative changes in the intervertebral discs.

**Conclusions:** The neuroimaging modality (MRI/MSCT) should therefore be considered as mandatory/standard, not competing with clinical findings, but complementary, to further question the tactics and optimise therapy

**References:**