



DIAGNOSTIC VALUE OF THE OSDI QUESTIONNAIRE IN DETECTING NEUROPATHIC EYE PAIN IN PATIENTS AFTER LASIK

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Background. The Ocular Surface Disease Index (OSDI) questionnaire is widely used to quantify dry eye syndrome (DES) symptoms. However, its potential in differentiating classic DES from neuropathic ocular pain (NOP) after LASIK remains incompletely understood. Given the growing number of patients complaining of pain with minimal objective signs of ocular surface damage, validation of the questionnaire as a screening tool is of practical importance.

Objective. To evaluate the diagnostic ability of the OSDI in identifying neuropathic ocular pain in patients with chronic dry eye syndrome after LASIK surgery.

Materials and methods. From September 2024 to May 2025, a prospective clinical study was conducted at the Ziyobakhsh private multidisciplinary clinic aimed at assessing the diagnostic value of the OSDI questionnaire in identifying neuropathic ocular pain in patients after keratorefractive surgery. The study included 35 people (70 eyes), divided into three groups: 10 patients with a high degree of myopia (≥ 6.0 D) and symptoms of dry eye syndrome without severe pain; 10 patients with myopia of a similar degree, a combination of symptoms of dryness and neuropathic eye pain; the control group consisted of 15 practically healthy volunteers without ophthalmological complaints and a history of surgical interventions. The average age of the examined subjects was 29.3 ± 5.2 years, 57.1% were women, 42.9% were men. All participants underwent a standard ophthalmological examination, as well as a questionnaire using a validated Russian-language version of the Ocular Surface Disease Index (OSDI) questionnaire.

Study results. The total scores of the OSDI questionnaire significantly differed between the three clinical groups ($p < 0.01$). In practically healthy volunteers, the average value was 9.1 ± 3.4 points, in patients with dry eye syndrome without pain syndrome 42.5 ± 6.3 points, while in patients with a combination of dry eye syndrome and neuropathic pain 46.8 ± 5.7 points. The



threshold value on the OSDI scale of 45 points made it possible to assume the presence of neuropathic eye pain with a high accuracy, providing a sensitivity of 80% and a specificity of 87%. Calculations showed that the probability of accuracy of these indicators is within the confidence interval from 82% to 99%. The test with a topical anesthetic was positive in eight out of ten patients of the second group, which indicates the presence of central sensitization. A reliable positive correlation was also established between the severity of subjective complaints on the OSDI scale and the stability of the pain syndrome after local anesthesia (correlation coefficient $r=0.62$; $p<0.01$). The obtained data confirm that the combination of a high OSDI score and a positive anesthetic test can serve as a reliable clinical marker of neuropathic eye pain in the post-refractive period.

Conclusions. The OSDI questionnaire demonstrates high diagnostic accuracy in screening for neuropathic eye pain in post-LASIK patients. A threshold of ≥ 45 points together with a positive central sensitization test allows for reliable differentiation of NGP from classic dry eye syndrome and guides the physician to conduct an in-depth examination (confocal microscopy, assessment of psychoemotional status). Thus, OSDI can serve as the first stage of the algorithm for early detection of NGP in routine ophthalmological practice.

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