

EPIDEMIOLOGICAL ASSESSMENT OF OCULAR SURFACE  
DISEASES IN THE POPULATION OF BUKHARA AND NAVOI  
REGIONS EXPOSED TO NATURAL-CLIMATIC AND  
TECHNOGENIC FACTORS

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**Relevance.** Ocular surface diseases — dry eye disease, pterygium, pinguecula and chronic conjunctivitis — are among the most frequent forms of eye pathology, with a reported prevalence of dry eye ranging from 5% to 50% of the adult population depending on the diagnostic criteria and the environment of residence. According to the TFOS DEWS II and TFOS Lifestyle consensus documents, low air humidity, high temperature, wind, dust and salt aerosols, intense solar radiation and technogenic air pollution are proven and modifiable determinants of these diseases. Bukhara and Navoi regions of Uzbekistan combine a sharply continental arid climate with a considerable industrial load (mining, metallurgical and chemical enterprises), and their population is therefore simultaneously exposed to natural desiccating and technogenic irritating factors. Nevertheless, population-based data on the prevalence and structure of ocular surface diseases in these regions have not yet been obtained, which makes a targeted epidemiological study highly relevant.

**Aim of the study.** To assess the prevalence, nosological structure and risk factors of ocular surface diseases among the adult population of Bukhara and Navoi regions living under different levels of natural-climatic and technogenic exposure.

**Materials and methods.** The study is being carried out exclusively in humans, among adult residents of Bukhara and Navoi regions. Comparison groups are formed according to the character of environmental exposure: residents of territories adjacent to industrial enterprises, rural agricultural population with predominantly outdoor work, and urban office employees. The examination protocol includes: validated symptom questionnaires (OSDI); biomicroscopy of the anterior segment; assessment of tear film stability (tear break-up time); Schirmer test; vital staining of the cornea and conjunctiva; registration of pterygium and pinguecula; and a structured interview on occupational, behavioral and environmental risk factors. Statistical processing provides for the calculation of standardized prevalence indicators and multivariate analysis of risk factors.

**Expected results and discussion.** The study will provide the first regional epidemiological characteristics of ocular surface diseases in the arid industrial zone of Central Asia. Comparison of population groups with different exposure profiles will make it possible to quantify the contribution of natural-climatic and technogenic factors, to identify occupational and territorial risk groups, and to map the burden of disease within the two regions. These data will form the evidence base for regional screening and preventive programs integrated into primary health care and occupational medicine.

**Conclusion.** Ocular surface diseases in arid industrial regions should be regarded as environmentally determined pathology. A population-based study among the residents of Bukhara and Navoi regions will fill the existing epidemiological gap and provide the scientific basis for improving the regional system of their prevention.

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