

**МЕДИЦИНА, ПЕДАГОГИКА И ТЕХНОЛОГИЯ:
ТЕОРИЯ И ПРАКТИКА**

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**PROBLEMS OF PREVENTION AND EARLY DIAGNOSIS OF
GLAUCOMA AMONG THE POPULATION OF SURKHANDARDO
REGION.**

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Abstract: Glaucoma is a disease characterized by progressive degeneration of the optic nerve, which can lead to gradual loss of visual field and eventual blindness. The epidemiological burden of glaucoma is increasing worldwide, especially in Asia and Central Asia. It is important to develop recommendations for the prevention and early diagnosis of glaucoma at the local, ocular, and health system levels. This article discusses the epidemiology of glaucoma, risk factors, diagnostic methods, prevention measures, as well as issues and proposals for each region of our country and the context of Surkhandarya in particular.

Keywords: Glaucoma, Prevention, Early diagnosis, Glaucoma, Intraocular pressure, Optic nerve, Surkhandarya region, Epidemiology

Main part: Glaucoma is the second leading cause of irreversible blindness in the world after cataracts.

Glaucoma is divided into different types: primary open-angle glaucoma (POAG), primary angle-closure glaucoma (PACG), and secondary glaucoma (e.g., due to uveitis, pseudoexfoliation, trauma, steroid use). The prevalence and trends of glaucoma in Asia and Central Asia have been analyzed in several studies: for example, the overall prevalence of glaucoma in Asia in the age group of 40–80 years was found to be 3.54% (POAG — 2.34%, PACG — 0.73%). At the same time, a meta-analysis conducted in South Asia showed an overall prevalence of ~2.1%, and the rates of POAG and PACG were also analyzed. Although there is little disaggregated data for Uzbekistan, by sex and region, the article “Incidental changes in glaucoma in Uzbekistan” provides statistical data on diagnostics for 2010–2019. There are also

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studies on the prevalence of glaucoma among the population in Syrdarya (a geographically adjacent region to Surkhandarya).

The purpose of the article: To analyze the problems and opportunities of preventive measures and early diagnosis of glaucoma in the population of Surkhandarya region, and to develop proposals.

Epidemiology and local data

- ✓ Studies on the prevalence of glaucoma among the population in Syrdarya (a region adjacent to Surkhandarya) provide certain rates.
- ✓ Statistics on the number of newly diagnosed cases and diagnoses at the first visit were maintained for Uzbekistan: Year-by-year data on the number of newly diagnosed glaucoma patients and the number of diagnoses at the first visit were analyzed in 2010–2019.
- ✓ In addition, changes in the disability and disease burden associated with glaucoma in Uzbekistan were also observed: statistical trends in the level of disability associated with glaucoma were analyzed.
- ✓ The disease burden of glaucoma in B&R (Belt & Road) countries was analyzed, which can also be a comparative baseline for Uzbekistan.

These data provide a reasonable starting point for the Surkhandarya region at the immediate demasa, nearby region and republican levels. However, regional characteristics are of great importance due to differences in the composition of the local population, socio-economic conditions, health system indicators, and healthy lifestyles.

Strategies and suggestions for Surkhandarya region

In the context of Surkhandarya region, it would be good to include the following for the prevention and early diagnosis of glaucoma:

1. Screening targeted at risk groups

- + Patients aged 40 years and older, especially those with high IOP, diabetes, hypertension, and a family history of glaucoma.
- + IOP and gonioscopy every 2–3 years.
- + Perimetry and OCT recommended if IOP is high or there is a risk of angle closure.

2. Mobile eye examination teams

- + Establish mobile teams to provide screening and diagnostic services in rural areas, equipping them with portable equipment for tonometry and fundus examination.

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✚ Expand cooperation with health centers and family medicine specialists.

3. Education and public awareness campaigns

✚ Educate the population about the risks and symptoms of glaucoma (e.g., peripheral vision loss, tunnel vision).

✚ Promote posterior segment examinations, IOP measurements, and eye doctor visits in health centers.

✚ Improve the skills of medical personnel (family doctor, ophthalmologist, ophthalmologist technician).

4. Modernize and equip resources

○ Centralize new OCT, perimetry, and tonometry equipment in the central district of the region.

○ Create a system for sending fundus images and receiving specialist advice for remote (telemedicine) areas.

Conclusion: Glaucoma is a serious ophthalmological disease that can lead to irreversible vision loss. There are opportunities and challenges for its prevention and early diagnosis in the population of Surkhandarya region. Taking into account risk factors, diagnostic methods, and regional resource constraints, a coordinated strategy of targeted screening, mobile teams, information dissemination, resource modernization, and information systems can be implemented. In this way, it will be possible to take effective measures to prevent vision loss from glaucoma and improve population health.

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