

## Features of the Course of Open-Angle Glaucoma in Persons Over 50 Years of Age

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### ABSTRACT

To date, glaucoma still remains in the leading group of diseases that lead to the decay of visual functions, regardless of social conditions and living standards in a particular country. Summarizing the literature data on the structural distribution of glaucoma and its clinical forms, we can conclude that the spread of the disease is mosaic in various climatic and geographical regions around the globe and the multiple dependence of the epidemiological characteristics of the disease in a particular area, including ethnicity, climatic, social and economic factors.

### INTRODUCTION

After 40 years, primary open-angle glaucoma begins to prevail in the incidence of glaucoma. This group includes a significant proportion of people involved in active labor activity. Considering this fact, a constant increase in the incidence in this population group, a chronic, progressive course with a steady deterioration in visual functions, which leads to disability and is accompanied by financial costs for both the patient himself and the state as a whole, is of great social importance. This allows us to consider primary open-angle glaucoma as a medical, socio-economic disease [2-4].

### MATERIALS AND METHODS

Primary open-angle glaucoma still occupies the main place among the causes of irreversible blindness, even the successes in recent decades achieved in its prevention and treatment cannot prevent the progression of visual function decay in more than half of patients [2, 6].

Some authors note a trend towards a steady increase in the proportion of glaucoma among the causes of primary disability in the population. At the beginning of the 21st century, its share in this indicator increased from 12 to 20%, and the prevalence from 0.1 to 0.8 per 10 thousand of the adult population. In addition, there is an unevenness of these statistical data depending on the

territorial sign [4].

## **RESULTS AND DISCUSSION**

Even despite the recent progress in studying the causes of glaucoma, early diagnosis and treatment, the percentage of vision loss and blindness due to this disease is still significant.

Published data on the prevalence and clinical course of the disease force experts around the world to consider glaucoma as a problem that is gradually coming to the fore along with AIDS (34 million HIV-infected), tuberculosis, diabetes mellitus and systemic infectious diseases [3].

About 60.5 million people in the world suffer from glaucoma, and this figure, judging by the statistical calculations, will increase to 79.6 million by 20220 [4].

The key point is that among the diseased there is a very large proportion of people of active working age.

Primary open-angle glaucoma occupies a leading position in the structure of glaucoma incidence, reaching 80% of the number of first-time cases [5].

Glaucoma is one of the top three (along with cataracts and trachoma) diseases leading to blindness worldwide. Statistics show that the number of people blind from glaucoma exceeds 6.7 million people, which is 13% of the total number of blind people on Earth [6]. So, according to Japanese researchers, 16% of blindness in their country is caused by glaucoma. If the current trend continues, by 2020 there will be 11.2 million blind people worldwide as a result of glaucoma.

In the United States, up to 60 million people are at risk of becoming blind as a result of glaucoma, 300 thousand are blind due to glaucoma in one eye, from 90 to 120 thousand are officially considered blind in both eyes. Up to 5.5 thousand people in the United States annually lose their sight from this disease (from 93 to 112 people for every 100,000). Glaucoma neuropathy with changes in visual fields was detected in 2 million people. The risk group for glaucoma includes up to 20 million people, these are people over 40-50 years old, as well as those with fluctuations in intraocular pressure as one of the main diagnostic and prognostic signs of glaucoma. Many authors draw attention to the fact that up to 40% of cases of blindness could have been avoided with timely diagnosis and rational treatment [5].

Among patients with glaucoma, only 50% know about their illness, the rest are unaware of it. In addition, there is a trend that is repeatedly reflected in the materials published by the World Health Organization (WHO): the younger the population, the more undiagnosed cases in it. Not everything is good with the general awareness of people: only 20% know what glaucoma is, 50% have heard about the disease, but do not know the details, 30% do not know anything about the disease [2].

The economic component of the problem is also of great interest. In the United States, the direct cost of glaucoma patients (treatment costs, insurance payments, disability benefits) is about \$4 billion annually, and this figure is constantly growing. The total cost of treating one patient with glaucoma in this country is about \$1700 annually [3].

Patients suffering from glaucoma account for 20% of inpatients in ophthalmological departments of medical institutions in Germany, and 13% of all visits to outpatient ophthalmologists are patients with glaucoma. In the same country, more than 5 million people over the age of 50 are at risk of developing glaucoma [4].

The development of new equipment for diagnosing this disease, the introduction of modern methods of medical, laser and surgical treatment based on the latest ideas about the etiology and pathogenesis of glaucoma, unfortunately, do not lead to a decrease in disability due to this

disease.

On the territory of the former Soviet Union, the prevalence of glaucoma ranged from 0.9 to 3.5%, and within the same republic, fluctuations from 0.2 to 6% were possible. Extreme prevalence was detected in the northern regions of the country. In some populations of the inhabitants of the Far North, primary glaucoma was almost not registered or was extremely rare (0.55%). In others, an abnormally high prevalence was observed, the established diagnosis of glaucoma was 5.5-7.2% with a predominance of angle-closure form of the disease.

The high prevalence of glaucoma was noted by the authors among the peoples living in the steppe, semi-desert or desert climatic zones. In Uzbekistan, it was 6.7%, and the Ferghana Valley was previously even considered its endemic focus. In addition, there is an uneven incidence of glaucoma in its clinical forms. In some regions, there was even a predominance of closed-angle glaucoma (60-80%) over its open-angle form.

Articles by foreign authors also show uneven occurrence of glaucoma in different regions. Low prevalence and incidence of glaucoma are observed in the highlands of the Himalayas, the mountainous regions of Poland and the Czech Republic, among the natives of Australia and New Zealand, in the central regions of Burma and the continental part of Liberia.

There is a difference in the geographical distribution of clinical forms of glaucoma: predominantly angle-closure glaucoma is detected in Thailand, Burma, Vietnam, the Philippines, and Java; open-coal - among the population of the Scandinavian countries, among the white population of North America, in European countries. At the same time, people of the African race living on all continents are also predominantly diagnosed with open-angle glaucoma [4].

Many authors explained the uneven, mosaic distribution of primary glaucoma and the peculiarities of its clinical course in the Soviet Union by its vast territory, capturing various climatic zones [5].

According to the literature, angle-closure glaucoma is often found in Uzbekistan, Kyrgyzstan, Astrakhan region, Stavropol region, Irkutsk and Chita regions. In Dagestan, in general, the ratio of open-angle and closed-angle glaucoma is 5:1, but there are areas where this ratio is 1:4 [4].

Thanks to a significant deepening of our knowledge of the pathogenesis of glaucoma, it becomes possible to divide glaucoma into several clinical forms. Thus, the gonioscopy method developed at the beginning of the 20th century made it possible to divide the disease into two main forms: open-angle and closed-angle. The understanding of the clinic of an acute attack of glaucoma at that time was insufficient for a clear separation of these forms. Angle-closure glaucoma is characterized by a narrow profile of the anterior chamber angle (ACA) or its closure, in which the iris root, when viewed through a gonioscope, partially or completely covers the trabecular apparatus [2, 6].

## **CONCLUSION**

Thus, most authors pay attention to the fact that the likelihood of angle-closure glaucoma and the nature of its clinical course depend on the presence of anatomical predisposing factors (small anterior chamber, narrow angle of the anterior chamber, excessively thick lens in a relatively short eye), due to structural features of the eyeball. However, the importance of one or another factor or their combination as the main cause of the occurrence of angle-closure glaucoma cannot be unambiguously determined.

Summarizing the literature data on the structural distribution of glaucoma and its clinical forms, we can conclude that the spread of the disease is mosaic in various climatic and geographical regions around the globe and the multiple dependence of the epidemiological characteristics of the disease in a particular area, including ethnic, climatic, social and economic factors.

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