ABSTRACT
of the dissertation work of Tashtitova Layla Bolatovna
on the topic "Scientific substantiation of the mechanisms of organization of ophthalmological care for patients with glaucoma"
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The relevance of the problem. Currently, glaucoma is a serious medical and social problem on a global scale. Despite the well-known achievements in the diagnosis and treatment of this disease, glaucoma remains one of the main causes of irreversible vision loss in people both in Kazakhstan and around the world. Today, glaucoma unites a large group of diseases of different origins and with different course, but with the same outcome: blindness due to optic nerve atrophy [Botabekova T.K., Doshakanova A.B., Aldasheva N.A.2013].

Taking into account the latest estimates, the previously calculated total number of visually impaired people around the world is actually doubling, thereby affecting people's quality of life and their mental state [Purola P.K.M., Nättinen J.E., Ojamo M.U.I. et al. 2021].

The current trend of increasing the incidence of glaucoma, which is observed in all countries of the world, is also characteristic of the Republic of Kazakhstan: glaucoma has come out on top in the structure of blindness and primary disability among other eye pathology [Botabekova T.K., Aldasheva N.A., Tashtitova L.B., Abysheva L.D., Kasymbekova M.T. 2017].

The asymptomatic course of the disease and the low level of awareness of the population about the need for preventive examinations leads to the detection of glaucoma in the late stages. Even in the developed countries of the world, glaucoma is diagnosed at an early stage only in 50% of cases.

In connection with the medical and social significance, as part of the implementation of the State Health Development Program "Salamatty Kazakhstan" since 2011, screening for glaucoma has been carried out in target groups over 40 years old. The continuation of glaucoma screening has found support in the State Program for the Development of Healthcare "Densaulyk" for 2016-2019 and beyond [The State Program for the Development of Healthcare of the Republic of Kazakhstan "Densaulyk" for 2016-2019]. At the same time, the introduction of a screening program for early detection of glaucoma requires regular monitoring and evaluation of its medical, social and economic effectiveness.

In the international literature, many unresolved problems of the fight against glaucoma are noted, including: low awareness of the population about screening programs and the glaucoma disease itself, shortcomings in dynamic monitoring of the contingent of patients, dissatisfaction with glaucoma patients with medical and medico-social care, insufficient study of the opinions of doctors working with this category of patients, etc. [Sleath B., Sayner R., Vitko M., Carpenter D.M., Blalock S.J. 2017].

Thus, the epidemiology of glaucoma, characterized by an increase in the incidence, prevalence, disability in the world, as well as unfavorable forecasts associated with the continued growth of these trends in the near future, require the search for new systemic approaches to the detection, treatment and prevention of the disease. The study and elimination of pressing problems will improve the quality and accessibility of medical care for glaucoma patients, make it patient-oriented, eliminate barriers of commitment and involve the patient in joint decision-making regarding treatment and health monitoring.

The purpose of the study

Improving the system of providing medical and preventive care to patients with glaucoma, based on the analysis and improvement of the effectiveness of early diagnosis of the disease and the effectiveness of the ophthalmological service.

Research objectives:

1. To study the incidence of glaucoma in the population of the Republic of Kazakhstan from 2000 to 2020 with an assessment of forecast values.

2. To analyze the structure and staffing of the ophthalmological service with an expert assessment of the state of provision of preventive and diagnostic care to patients with glaucoma to determine the need for improvement and the formation of practical proposals.

3. Conduct sociological research to determine the level of awareness of the population and study their need for qualified ophthalmological care.

4. To analyze the processes of early detection of glaucoma and dynamic monitoring of patients and evaluate their medical, social and economic effectiveness.

5. Develop proposals for improving ophthalmological care for patients with glaucoma.

Scientific novelty of the study

- New data on the incidence of glaucoma among the population of the Republic of Kazakhstan from 2000 to 2020 are presented, indicating an increase in the primary incidence of glaucoma among the population of the Republic of Kazakhstan, which made it possible to identify its main patterns and justify the forecast until 2025.

- For the first time, a comprehensive assessment of the current system of providing medical and preventive care to patients with glaucoma was carried out, which showed the possibilities and expediency of its improvement at the stages of prevention, early detection, treatment and dynamic observation of a contingent of patients.

- A professional assessment of doctors of the state of glaucoma screening was obtained by the method of expert opinion assessment, the results of which objectified the main conditions and factors for improving the process of early detection and provision of ophthalmological care to glaucoma patients.

- For the first time, an economic analysis of screening for glaucoma was carried out by studying the costs (total cost) for diagnosis and treatment, depending on the nature and severity of the disease, the frequency of examination, on the basis

of which the effectiveness of early detection and timely medical care was proved, which will reduce the level of disability of this contingent of patients.

Theoretical and practical significance of the study

Comparison with the international experience of the organization of care for patients with glaucoma allowed a comparative analysis of the existing practice in Kazakhstan.

Based on a comprehensive study, the main directions of improving the system of ophthalmological care for patients with glaucoma at the stages of its provision are scientifically substantiated.

The established personnel shortage and imbalance justified the need for priority provision of ophthalmologists to the rural population, which should be taken into account by local executive bodies in the implementation of the national project "Modernization of rural healthcare".

For the first time performed economic calculations (models) can contribute to the rational allocation of funds at different stages of ophthalmic care: screening examination, treatment and observation of patients with glaucoma, which allows to obtain maximum medical efficiency at minimal cost.

The results of the study are intended for use by health authorities, heads of medical organizations, as well as primary care physicians and ophthalmologists to form patient-oriented care for patients with glaucoma. The data obtained can be included in thematic refresher courses for doctors and nursing staff.

The main provisions submitted for protection

1. When analyzing the incidence of glaucoma in the population of the Republic of Kazakhstan in the dynamics from 2000 to 2020, a steady trend towards an increase in its indicator was revealed in all territorial administrative units of the country, which indicates the need to monitor this process, study the causes and factors affecting the growth of the indicator and develop a system of measures to prevent this growth through the system of early detection and prevention.

2. The identified problems associated with the uneven staffing and resource provision in various regions of the country, public awareness, necessitate improvement in terms of training, organization of the medical and diagnostic process, the use of new modern diagnostic technologies and equipment with an emphasis on primary health care in rural regions, improving the health literacy of the population.

3. The organization and conduct of screening for early detection of glaucoma in the Republic of Kazakhstan with a high degree of proven probability meets WHO criteria and best foreign practices, and also has medical and social effectiveness combined with economic feasibility.

Materials and methods of research

Analytical review of 235 bibliographic domestic and foreign authors. Statistical collections "The health of the population of the Republic of Kazakhstan and the activities of healthcare organizations" in 2000-2020. Statistical collections "The health of the population of the Republic of Kazakhstan and the activities of healthcare organizations" in 2000-2020.

Content analysis of regulatory legal acts of the Republic of Kazakhstan regulating the organization of ophthalmological care to the population.

A questionnaire survey of 385 doctors, including 11 primary care ophthalmologists, 50 hospital ophthalmologists and 324 general practitioners in Almaty with an expert assessment of the information received.

Statistical data of screening studies for early detection of glaucoma and dispensary registration in 2011-2020.

A survey of 384 people over the age of 40 and 381 patients with glaucoma with an expert assessment of the information received.

An economic model for identifying the effectiveness of screening programs for early detection of glaucoma and monitoring of patients.

Conclusions:

1. In the Republic of Kazakhstan, an increase in the incidence of glaucoma was registered (according to the circulation data) from 2000 to 2019, after which there was a slight decrease in the indicator caused by the COVID-9 epidemic, quarantine measures and the reorientation of the entire healthcare system to combat coronavirus infection. The trend of increasing the incidence of glaucoma among the population takes place in all administrative-territorial units of the country. The trend for the next five years suggests a further increase in morbidity in the Republic of Kazakhstan from 120.9 per 100,000 people in 2020. up to 151.9 per 100,000 people in 2025, which forms the prospect of an ever-increasing need of the population in this profile of ophthalmic care.

2. The analysis of the development and functioning of the system of ophthalmic care for glaucoma patients confirms the expediency of its improvement, taking into account international requirements, domestic experience and regional characteristics and capabilities. First of all, it is necessary to eliminate the shortage of ophthalmologists and the imbalance in their placement in cities and rural areas. If in 2000 the indicator of provision of the population with ophthalmologists in the Republic of Kazakhstan was 0.6 per 10,000 population, then since 2008 it has exceeded the level of 0.8 per 10,000 population by 2020. inclusive (exception of 2016 – 0.9). Of the available ophthalmologists, the majority of specialists are concentrated in cities, in rural areas, the indicator of the provision of the population with ophthalmologists, as a rule, does not exceed the approved minimum standard - 0.2 per 10 thousand people (the exception of the Kyzylorda region is 0.4), and in Atyrau, Zhambyl, Atyrau, Turkestan regions is 0.1 per 10 thousand people.

3. 22.3% of the surveyed doctors are satisfied with the content of the clinical protocol for the diagnosis and treatment of glaucoma, and 80.5% of respondents (94% of hospital ophthalmologists, 90.9% of polyclinic ophthalmologists, 78.1% of GPS) insist on the need to update it. Having unanimously expressed the opinion that the diagnosis of glaucoma is a complex process, doctors consider it mandatory to use optometric methods at an ophthalmological appointment: tonometry, measurement of intraocular pressure (daily profile), perimetry, gonioscopy, ophthalmoscopy, morphometric analysis of the optic nerve disc, optical coherence tomography, pachymetry, echobiometry, biomicroscopy, ultrasound computer biomicroscopy, ultrasound dopplerography, OST of the anterior segment of the eye

with the frequency recommended by them, but at the same time, they note the limited availability for the population of many of the listed laboratory and instrumental methods, the increase of which they see in improving the equipment of medical organizations of primary health care and ophthalmology offices. Also among the problems, doctors note the lack of compliance on the part of patients.

4. In 2020, the coverage of the population of the Republic of Kazakhstan with screening for early detection of glaucoma amounted to 93.1%, and a drop in the indicator compared to previous years was registered both in urban and rural areas. The detection rate of glaucoma during screening is 0.31%, although according to expert estimates it should be at least 0.5%. Of the number of identified glaucoma patients, 67% were taken for dispensary observation. The evaluation of screening in previous years indicates the presence of sharp fluctuations in the indicator and exceeding the limit figures, which indicates the presence of problems with organization and planning. Screening for early detection of glaucoma is currently characterized by low levels of population coverage and detection of the disease, which requires increased efforts to improve this process. The reserves for improving screening are: improvement of clinical and organizational technologies, staff training, implementation of a monitoring system, wide public awareness.

5. According to the questionnaire survey, 28.9% of respondents among the population over 40 years of age were screened for early detection of glaucoma, although 40.9% noted that they were invited to undergo screening. Among the surveyed glaucoma patients, 70.9% of patients underwent screening for early detection of glaucoma. Both among the population and patients with glaucoma, low awareness of glaucoma and insufficient information about the disease were revealed. The problems of providing specialized primary health care are long waiting times for an ophthalmologist (more than two days) in 35.7% of respondents, hospitalization - 74.5%, difficulties in obtaining functional diagnostic tests - 65.4%. As a result, 65.4% of glaucoma patients went to an ophthalmologist for a fee, 76.9% purchased medicines at their own expense, and also received laboratory and instrumental examinations for a fee. Satisfaction with the patient's observation of the disease in the polyclinic was expressed by 35.7% of glaucoma patients, and 90.3% of glaucoma patients say there are no services for disease prevention and health promotion

6. The cost of screening with incomplete adherence to screening (baseline scenario) with a frequency of every two years is 248,168 tenge in the city, 242,774 tenge in rural areas, while ICER (incremental cost–effectiveness coefficients) amounts to 872,472 and 625,313 tenge, respectively; with full adherence to screening with the same frequency: in the city – 256,085 tenge, in rural areas – 237,510 tenge, ICER – 4,403,517 and 2,423,099 tenge, respectively. Screening for glaucoma in both urban and rural settings is cost-effective for all age groups. Screening in Kazakhstan is estimated to be cheaper in monetary terms, largely due to the lower cost of medical services compared to high-income countries.

Publications

4 scientific works have been published on the topic of the dissertation research: 1 article in an international scientific publication included in the Scopus

database, 3 articles in the List of publications recommended by the Committee for Quality Assurance in Education and Science of the Ministry of Education and Science of the Republic of Kazakhstan for the publication of the main results of scientific activity.

Structure and scope of the dissertation

The dissertation work is presented on 155 pages of computer text. The dissertation consists of an introduction, a literature review, a description of materials and methods, own research results, conclusions, conclusions, practical recommendations, a list of sources used, including 235 literary sources and 3 appendices. The work is illustrated with 32 tables and 36 figures.