



ISSN: 2277- 7695  
TPI 2015; 4(7): 33-35  
© 2015 TPI  
www.thepharmajournal.com  
Received: 21-07-2015  
Accepted: 23-08-2015

**Medvedovska NV**  
Department of Family Medicine  
and Ambulatory-and-Polyclinic  
Aid, National Medical Academy  
of Postgraduate Education,  
Kyiv, Ukraine

**Povch SV**  
Microsurgery of Eye Center,  
Kyiv, Ukraine

## Primary glaucoma prophylaxis and special features of organizing primary medical aid to patients with glaucoma in Ukraine

**Medvedovska NV, Povch SV**

### Abstract

The scientific analysis of prevalence indicators with studying risk factors of developing glaucoma among adult population of Ukraine and approaches to organizing the rendering of primary medical aid to patients with ophthalmic hypertension is carried out. Expediency of the registering of glaucoma risk factors in family doctor practice at the level of which measures of glaucoma prevention and timely detection at primary level of medical aid are to be formed is grounded.

**Keywords:** glaucoma, risk factors, primary prevention.

### 1. Introduction

Glaucoma is one of the reasons of blindness in Ukraine and in the whole world. According to different evaluations 66 to 105 million people in the world are suffering from glaucoma. Furthermore, 6 to 7 million people in the world are both eyes blind and that is directly caused by glaucoma defeat of optical nerve <sup>[1]</sup>. According to the data of National Eye Institute (NEI) only in the USA there lives about 3 million people with open-angle glaucoma. According to the data of Russian scientists <sup>[2-5]</sup> the share of patients with glaucoma composes 20.0% in the structure of primary blindness in Russia and this share rises to 40.0% among patients of pension age. Almost the quarter of those patients are treated in in-patient departments and 43.3% of them require surgical treatment.

The problem of detecting primary glaucoma is reasonably considered to be one of the priority directions in the development of contemporary public health, first of all - due to its medical-and-social significance. Glaucoma, until now, is the reason for irreversible blindness and weak-vision, occupying one of the key positions among the reason of disabling diseases of the organ of vision <sup>[6, 7]</sup>. The frequency of blindness caused by glaucoma in the world during the last 30 years practically did not decrease and it composes 14.0-15.0% of total number of all blind people <sup>[8]</sup>. Scientists note increasing of the role of glaucoma among the reasons for primary disablement in the last decade that has grown from 12.0 to 20.0%. The overwhelming majority of disabled persons with the diagnosed glaucoma require taking the rehabilitative measures: 53.0% - medical; 72.0% - professional and 91.0% - social. Among the clinical forms of disease primary open-angle glaucoma that takes from 70.0% <sup>[9, 10]</sup> to 92.0% <sup>[11]</sup> of all cases of glaucoma is the most important.

The high social significance of glaucoma as the reason of irreversible blindness and disablement on the vision determines the topical character to the problem of perfection of methods and approaches to diagnostics of primary glaucoma for application in practice of family doctor.

**Goal of study:** retrospective and prospective analysis of glaucoma prevalence indicators among adult population in Ukraine, contemporary risk factors of glaucoma appearing and developing for working out measures and technologies of glaucoma timely diagnosing at primary level of medical aid general practitioner/family doctor practice.

**2. Methods of study:** bibliosemantic, statistic, epidemiologic, graphical analysis of dynamic lines.

**3. Results and Discussion:** Yearly in Ukraine glaucoma is revealed at about 22 000 people (22626.0 cases in 2013) that come for the first time for medical aid that comprise on the average in Ukraine 60.5 cases per 100000 of adult population. Prevalence of glaucoma grows

**Correspondence:**  
**Medvedovska NV**  
Department of Family Medicine  
and Ambulatory-and-Polyclinic  
Aid, National Medical Academy  
of Postgraduate Education,  
Kyiv, Ukraine

(from 566.2 in 2008 to 650.9 per 100 thousands of adult population in 2013) in the age class of 18 years and older.

High levels of glaucoma prevalence in 2013 were registered among adult population of Chernigov (989.1), Vinnitsa (887.0), Sumy (878.8) regions (on the average in Ukraine 650.9 per 100 000 of adult population). Low indicators of glaucoma prevalence among adult population in 2013 were registered in Transkarpatian (407.4) and Odessa (415.7 per 100 thousands of adult population) regions. Difference between high and low indicators of glaucoma prevalence among adult population in different regions of Ukraine in 2013 composed 2.4 times ( $p < 0,001$ ).

In the age class of pension age during the period of 2008-2013 yrs. increase of glaucoma prevalence was observed (from 1 647.0 in 2008 to 1 810.8 per 100 thousands of population of pension age in 2013, or + 9. 9%). Increase in glaucoma prevalence in this age class takes place alongside with reduction of the index of primary morbidity (from 180.9 in 2008 to 155.2 per 100 thousands in 2013, or – 14.2%). The highest levels of glaucoma prevalence in 2013 are registered among the population of pension age in Kyiv (2621.3), Chernigov (2525.6) and Kherson (2 467.9) regions with average in Ukraine index of 1810.8 per 100 thousands of population of pension age. Low levels of glaucoma prevalence among population of pension age in 2013 were registered in Transkarpatian (1183.6) and Odessa (1216.6 per 100 thousands of population of pension age) regions. Difference between high and low indicators of glaucoma prevalence among population of pension age in different administrative territories of Ukraine in 2013 composed 2.2 times ( $p < 0,001$ ).

Increase in glaucoma prevalence among both male and female population of 18 years and older during the period of 2009-2013 yrs. together with decrease in the primary glaucoma morbidity during the period noted (-4.0% and -2.2% correspondingly) can testify the low level of appeal for medical aid, that is possible to explain by clinical special features of the beginning of disease, which in the majority of the cases (open-angle glaucoma) begins asymptotically. Precisely such cases of disease require development and taking prophylactic measures and preventive revealing of glaucoma at early stages, wide public information about the risk factors and the special features of the flow of disease and accessibility of ophthalmological aid.

Unfortunately, glaucoma is diagnosed, as a rule, in the developed stage of disease. Furthermore, according to literature data, from 50.0% to 87% of cases remain undiagnosed [11]. There are exist evidences that revealing of glaucoma at early stages and timely direction to specialists for adequate treatment can decrease the risk of intraocular pressure (IOP) destabilization, reduction of visual functions, prevents disablement. The results of scientific studies in different countries of the world, including Ukraine, ground the expediency of conducting screening studies for the purpose of the revealing glaucoma and risk factors of its appearance and development.

The development and realization of normative-and-lawful documents (orders of the Ministry of Public Health of Ukraine, clinical management, protocols) the creation of professional groups for working out and considering the possibility of adaptation of contemporary progressive world approaches to Ukrainian reality for the purpose of preventing the spread of glaucoma, blindness and weakly-vision and disablement because of these reasons among the population of Ukraine show the acknowledgement the importance of fight with

glaucoma in Ukraine. During the recent years numerous normative-and-lawful documents that regulate rendering medical aid to the patients with glaucoma were worked out. By order MZ of the Ukraine. was affirmed The standard clinical protocol of rendering medical aid to patients with primary open-angle glaucoma was approved by the order of Ministry of Public Health of Ukraine № 816 dated by November 23, 2011. In the order of Ministry of Public Health of Ukraine № 372 dated by May 14, 2013 “On the system of ophthalmological aid to the population of Ukraine” the volume of rendering medical aid to patients with glaucoma at different levels and the algorithm urgent aid to patients with injuries and diseases of eye is designated. In accordance with the order at primary level general practitioner–family doctor having certificate of 2-years postgraduate education or 6-months specialization and the nurses of general practice are determined as basic staff resource. In accordance with the order of the Ministry of Public Health № 404 from 20.06.2006 on the authorized equipment of the dispensaries of general practice- family medicine, the following ophthalmological equipment should be present: Roth full-scale apparatus with Sivtsev-Golovin tables and Rabkin table, binocular magnifier, the ocular tonometer, the set of trial spectacle lenses (small), mounting trial universal.

Measures of primary glaucoma prophylaxis such as revealing general and local risk factors that influence glaucoma appearance and progression should be accompanied by giving patients information about glaucoma, its consequences and the importance of control of intraocular pressure (IOP), functions of optical nerve, especially in risk groups, are obligatory at primary level.

Direct diagnostics of glaucoma is conducted at secondary level of medical aid. The diagnosis of glaucoma (primary or secondary) is determined only by specialist with the appropriate qualification and experience on the base of data obtained about characteristic degenerative changes in the disk of optical nerve, together with the loss of the field of sight, which progress with the development of scotomas or black spots in the field of sight.

For timely glaucoma revealing the doctor of general practice-family medicine should compulsorily fix complaints and gather anamnesis of the disease (hereditary, traumatic, anamnesis of inflammatory processes and vascular catastrophes in the eye, medicines that can cause increase of intraocular pressure (IOP), presence of accompanying pathology); to verify visual acuity is desirable to determine intraocular pressure. With the impossibility for the doctor of the general practice to conduct the methods of diagnostics above mentioned and (or) suspicion of intraocular pressure increase at patient, it is necessary to urgently direct the patient to ophthalmologist. The course of treatment is designated by doctor-ophthalmologist at the place of patient’s residence. Specialized aid to patients with primary open-angle glaucoma is accomplished in the specialized ophthalmological network. At repeated examination and during the specialized treatment, family doctor should contribute to fulfilling of all recommendations of the doctor-ophthalmologist by the patient. All patients, with any type of diagnosed glaucoma (primary or secondary) they should be found under constant observation of doctor-ophthalmologist and the doctor of general practice.

Control examinations with checking the patient’s completing the recommendations of ophthalmologist and correct application of medicines are obligatory in observation of the patients with glaucoma by general practitioner. The regularity

of control examinations is established by general practitioner. Periodic increase of intraocular pressure (IOP) higher than normal at appropriate treatment forces the general practitioner to take measures to directing the patient for repeated examination of ophthalmologist for correction of the treatment assigned. In case the decompensation of intraocular pressure and destabilization of functions is revealed the patient should be timely directed to ophthalmologist for deciding about the further strategy of treatment. The volume of diagnostic measures and their conducting should be regulated by the approved local protocol of therapeutic establishment for conducting patients with glaucoma. All types of surgery are carried out on the base of the data of diagnostics taking into account objective clinical data: the stage of process, the degree of intraocular pressure decompensation. Rehabilitation of patients with glaucoma after surgery includes periodic of control examinations that are determined by the doctor of general practice or at the dispensary-and-polyclinic level by doctor-ophthalmologist at least 1 time in 3 months, if the doctor of in-hospital department did not recommend another period. It is as desirable to restrict physical load and work with nervous tension, including in night, health resort treatment in profile sanatoriums for ophthalmological patients is recommended.

With timely diagnostics and correctly selected treatment, absence of the regime violence from the side of patient and effective clinic observation there are all chances to the retention of visual functions (visual acuity, the field of sight), level of intraocular pressure (IOP) within the normal limits, absence of progression of optical nerve atrophy.

**4. Conclusion.** Problems of prophylaxis, timely diagnostics and, correspondingly, timely treatment of glaucoma are still actual for Ukrainian health service. It is related first of all to glaucoma prevalence among adult population in Ukraine and its substantial share among population with irreversible blindness and weak vision.

Primary medical-and-sanitary given by family doctor should adhere to prophylactic direction concerning prevention of glaucoma appearance and development of and its complications through regular prophylactic examinations and periodic observation of revealed patients with the glaucoma. The following measures are suggested as obligatory at primary level: determining of risk factors for glaucoma developing, registering the state and functions of visual analyzer during examination, acquainting patient with the recommended regime of instillations, persuading the patient in the necessity of assigned treatment. Family doctor together with ophthalmologist must reduce possible side effects of glaucoma treatment to minimal, conduct current monitoring of the quality of visual functions, train and persuade the patients in self-control of visual functions, inform population about the reasons, early signs, methods of glaucoma prophylaxis and, treating and of its consequences.

## 5. References:

1. Quigley H, Broman A. The number of people with glaucoma worldwide in 2010 and 2010. *British Journal of Ophthalmology*. 2006; 90:262-267.
2. Алексеев ВН, Малеванная ОА. О качестве диспансерного наблюдения при первичной открытоугольной глаукоме. *Клиническая офтальмология*. 2003; 4(3):119-122. [in Russian].
3. Алексеев ВН, Малеванная ОА. Оценка

эффективности диспансерного наблюдения больных с первичной открытоугольной глаукомой. *Глаукома: проблемы и решения: сб. науч. ст. М., 2004, 393-396. [in Russian].*

4. Алексеев ВН, Малеванная ОА, Левко МА. Оценка эффективности диспансерного наблюдения больных с открытоугольной глаукомой. VIII Съезд офтальмологов, 3-5 окт. 2005 г. Москва, 2005, 146. [in Russian].
5. Алексеев ВН, Малеванная ОА, Новицкая ЕС. Качество диспансерного наблюдения больных с первичной открытоугольной глаукомой в поликлиниках города. Сучасні положення системи диспансеризації хворих глаукомою: сб. науч. ст. Москва, 2004, 9-13. [in Russian].
6. Басинский С.Н. Частота осложнений и сравнительная эффективность хирургического лечения первичной открытоугольной глаукомы. *Клинич. офтальмол.* 2011; 12(2):67-70. [in Russian].
7. Золотарев АВ, Шевченко МВ, Малов ВМ, Сапрыкина АГ, Карлова ЕВ. Централизованная региональная модель противоглаукомной работы: возможность комплексного решения проблем. *Клиническая офтальмология*. 2005; 3:45-48. [in Russian].
8. Либман ЕС. Современные позиции клинко-социальной офтальмологии. *Вестник офтальмологии*. 2004; 120(1):10-12. [in Russian].
9. Егоров ЕА, Куроедов АВ. Отдельные клинко-эпидемиологические характеристики глаукомы в странах СНГ и Грузии. Результаты многоцентрового открытого ретроспективного исследования (Часть 1). *Клин. офтальмол.* 2011; 3:97-100. [in Russian].
10. Егоров ЕА, Куроедов АВ. Отдельные клинко-эпидемиологические характеристики глаукомы в странах СНГ и Грузии. Результаты многоцентрового открытого ретроспективного исследования (Часть 2). *Клин. офтальмол.* 2012; 1:19-22. [in Russian].
11. Klein BE, Klein R, Lee KE. Heridatability of risk factors for primary open angle glaucoma. *Invest. Ophthalmol. Vis. Sci.* 2008; 45:59-62.