Trends in Glaucoma Disability in Ukraine

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Abstract: The article represents the glaucoma disability rates in Ukraine and touches upon medical and social aspects of the problem. We have screened a data from source medical documents and analyzed the MSEK (Physical Disability Board of Review) statistical reporting data, further used as a basis for calculation of live indices of general and primary disabilities caused by eye diseases, including the ones caused by primary open-angle glaucoma (7.05% and 9.99%, respectively), the extensive distribution indices of disability by gender (75.74% male), age (59.29% of II maturity patients), and a disability group (56% of patients recognized disabled persons of groups I and II). Our findings indicate a lack of modern science-based approaches to diagnosis, rehabilitation, and socio-medical examination of patients with ophthalmologic pathologies, thus requiring deeper study of this problem.

Key words: Eye diseases, primary open angle glaucoma, disability, gender and age analysis.

1. Introduction

Disability, caused by eye and adnexa diseases has grown three times and reached 16% in the last decade. It should be noted that glaucoma was the cause of eye disability in every fifth patient [1-3].

Addressing the issues of disability caused by eye diseases has paramount medical, social and economic importance, since they influence the organization and progress of programs for prevention and treatment of diseases, leading to disability, especially in the working-age population. The eye functionality undoubtedly plays a major role in daily living, labor and educational activities of every individual [4].

One of the most common serious medical and social problems in our country and around the world, which usually lead to irreversible loss of visual function, is glaucoma. Its relevance is preconditioned primarily by very high prevalence and disability indices, caused by the lack of attention to the prevention, timely diagnostics and adequate treatment. In recent years, we have witnessed an increase in the incidence of the pathology, which untimely diagnosis is associated with almost asymptomatic course in the

early stages [5]. Glaucoma is characterized by high rates of morbidity, significant economic costs for the society and individual patients, as well as a significant reduction in the quality of life of patients [6].

Special attention should be paid to a discrepancy between prevalence of the disease and its positions in the structure of primary disability, which indicates the low quality of diagnostics provided by medical institutions [2, 5-6].

The objective of the topic was to study and compare the structure and trends of disability caused by glaucoma over 5 years, as well as the causes and characteristics of disability in the subject population.

2. Methods

We have made a data sample from source medical documentation and provided an expert analysis of the MSEK state statistical data.

The intensive indices of primary and general disability caused by eye diseases (including the primary open angle glaucoma), the extensive distribution indices of disability by gender, age and a disability group were calculated using mathematical data processing.

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3. Results

Statistical indicators of disability caused by eye diseases (including POAG) correlate in different regions of the country. Therefore, the data presented in the topic may apply to the figures reflecting trends in Ukraine as a whole.

During the study, we found that totally 1742 individuals were recognized disabled due to eye and adnexa diseases (according to applications of Vinnytsia region residents to MSEK) (glaucoma-113, POAG-96) in 2008, and the number was gradually increasing each year up to 1815 people (glaucoma - 126, POAG-108) in 2009 and gained a peak of 2144 subjects (glaucoma-151, POAG-126) in 2011, which corresponds to the data on the increase in incidence and disability cases for the studied pathology (see Table. 1).

A number of persons disabled due to glaucoma and POAG in the studied cohort of disabled persons throughout the study was 4.65-7.41% and 3.87-6.35% respectively. The percentage of disability among

patients of working age with POAG in 2008 was 70.83%; during 2009-2010 it gradually declined to 62.63%; the lowest figure was observed in 2011—50.79%, followed by gradual increase of the index (Table. 2).

In total cohort, the main group consists of re-recognized disabled subjects. A total number of primary recognized subjects, disabled due to eye diseases during the last 7 years of the study was 1334. Most patients were recognized group III disabled - 74.08% (ranging from 69.82% in 2011 to 79.58% in 2013), group II – 15.01%, and group I - 10.91% of all subjects. Having compared the number of initially recognized disabled subjects in dynamics, we noted that it appeared significantly higher in 2012 and 2013 (18.55% and 18.87%, respectively). For example, in 2008 the rate was 2.58% (45 subjects), and in 2014 - 15.29% (301 subjects). (Fig. 1).

Remarkable is a big number of individuals recognized group I disabled persons, which sometimes more than twice exceeds the number of group II disabled

Table 1 Dynamics of disability caused by eye and adnexa diseases.

Year	Disability caused by pathologies, in absolute figures (individuals)		
	Eye diseases	Glaucoma	POAG
2008	1742	113	96
2009	1815	126	108
2010	1818	124	99
2011	2144	151	126
2012	2032	151	129
2013	1807	84	70
2014	1969	94	77

Table 2 Age distribution of disability cases caused by POAG.

Year	Disabled persons		
	Total, absolute fig.	Including persons of working age	
		Abs., cases	Per cent, %
2008	96	68	70.83%
2009	108	76	70.37%
2010	99	62	62.63%
2011	126	64	50.79%
2012	129	72	55.81%
2013	70	48	68.57%
2014	77	45	58.44%
Total	705	435	61.70%

Fig. 1 Dynamics of primary disability caused by eye diseases.

Fig. 2 Dynamics of eye diseases primary disability rate.

individuals. Repeatedly recognized disabled persons outnumbered those initially recognized more than by 90%, thus evidencing long duration, complexity and lack of effectiveness in medical, occupational, social and in-home rehabilitation.

Comparing a number of persons initially recognized disabled due to POAG, one can note the same trends as in eye diseases in total: in 2014 this figure increased up to 31.17% compared with 2.08% at the beginning of the study period (Fig. 2).

The decrease in the dynamics of subjects re-recognized disabled and the rate of disability is associated mainly with an increase in the number of

subjects recognized permanently disabled. Therefore, it discourages efforts for optimizing the cost of rehabilitation process and supporting disabled persons.

In case of POAG, the main portion of disabled persons fall on II mature age (418, i.e. 59.29% of the total number of subjects recognized disabled due to POAG). Senior and senile patients were recognized disabled due to POAG in 19.86% and 17.16% of cases, respectively (Table 3).

Having analyzed the gender structure of the cohort of primary and re-recognized POAG disabled subjects, we have generally found out that the proportion of male

Table 3 Gender and age characteristics of POAG disable person cohort.

Year	Age												Total
	Juvenile		I mature		II mature		Senior		Senile		Centena-rians		
	fem.	male	fem.	male	fem.	male	fem.	male	fem.	male	fem.	male	
2008	0	0	1	1	11	55	7	9	5	7	0	0	96
2009	0	1	1	2	16	56	8	8	6	9	1	0	108
2010	0	0	0	2	16	44	6	16	3	12	0	0	99
2011	0	0	1	1	13	49	8	20	4	27	1	2	126
2012	0	2	0	2	11	57	6	22	9	18	2	0	129
2013	0	0	0	0	10	38	4	8	2	7	0	1	70
2014	1	0	0	2	10	32	2	16	4	8	2	0	77
Total	1	3	3	10	87	331	41	99	33	88	6	3	705

Fig. 3 Gender structure of POAG cohort. **Fig. 4** Structure of POAG disability.

patients was 3.1 times greater (on average 75.74% of male compared to 24.26% of female persons) (Fig. 3).

Male patients dominate among all age groups, accounting for more than 70%. The growth of female patient share in POAG cohort is attributed mostly to

centenarians.

Having compared the structure of repeatedly recognized disability during 2008-2014, one should note the appearance of significant differences in the dynamics of severity of POAG disability:

the proportion of group I and II disabled persons is bigger. This trend suggests deterioration in the quality of diagnostics and medico-social examination.

The study of aspects of employment of persons disabled as a result of eye diseases in general, and POAG in particular, suggests a lack of attention to the issues of vocational rehabilitation of the subject population. Thus, the proportion of employed eye-disabled persons in the general cohort of disabled persons amounts to 26.59%. The small percentage of patients with POAG working at the time of the initial evaluation by MSEK may be explained by the lack of jobs that meet occupational background of subjects. Therefore, the availability of job only for every fourth person disabled due to eye diseases and for every sixth in POAG- disabled cohort is considered insufficient, given fair working age of patients and predominant disability of group 3 (Fig. 4).

4. Discussion

The rate of primary disability caused by eye diseases in general and POAG in particular, during a 7-year study period, is averaging 7.05% and 9.99% respectively. At the same time, the dynamics of this indicator is really impressive: in 2008, 2.58% and 2.08%, respectively, and by 2014 the primary disability increased up to 15.29% for eye diseases and reached 31.17% for POAG.

The analysis of POAG disability trend in individuals of working age indicates stable decrease of the rate from 70.83% in 2008 to 50.79% in 2011, and the growth up to 58.44% in 2014. In average, during the observation period, the portion of those recognized disabled due to POAG among persons of working age

was 61.70%. The findings indicate a lack of modern science-based approaches to diagnostics, rehabilitation, medical and social examination of patients with ophthalmologic pathologies, thus stipulating further detailed study of this problem.

5. Conclusion

The issue of proper follow-up, early diagnostics and implementation of appropriate therapeutic and preventive measures in POAG subjects requires special attention from the governmental authorities.

At the present stage of medical care, the coordinated teamwork of ophthalmology specialists and medical-social expert commission is required at all levels of medicare system to streamline the issues of diagnostics, treatment, rehabilitation and disability evaluation for patients with ophthalmological diseases (including POAG).

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