Ophthalmology in Lithuania

According to the data of the World Health Organization, approximately 285 million people globally have serious vision problems. This number includes 39 million blind people, and 246 million people with medium to serious vision problems. 75% of blindness can be avoided either by treating it or by way of prevention. Forecasts are that without effective measures taken, the number of blind people globally will grow to 76 million in 2020. The aging population and life style are causing a steep increase in the prevalence of such chronic diseases that may lead to blindness as age-related macular degeneration (AMD), glaucoma, and diabetic retinopathy. Strategies to prevent blindness and poor vision are among the most cost-effective healthcare measures. Lithuanian ophthalmologists have been conducting active research in these areas and taking part in national and international research programmes.

Approximately 64 million people in the world have glaucoma and 8 million of them have bilateral blindness. Approximately 80% of the outflow of the aqueous humour is via the trabecular meshwork pathway, which is not controlled by medication. The morphology of outflow structures in glaucoma patients and association with post-operative outcomes are being analysed. Assessment of the optic nerve head (ONH), including the neuroretinal rim (NRR) and the cup, is one of the most crucial elements in diagnosing and monitoring blindness-related disorders, for instance, glaucoma. In clinical work, the evaluation of the ONH size is an essential part of diagnosis and management of glaucoma. It enhances the assessment of such features of the ONH as the NRR and the cup areas that are necessary for accurate diagnosis and monitoring of glaucoma.

Age-related macular degeneration (AMD) is an age-related neurodegenerative disease of the macula, the central part of the retina. It leads to considerable visual loss. AMD is one of the main causes of blindness in people over 60. Because of progressive loss of the central visual function, it has a marked influence on the patient's behaviour and life quality. In 2002, 13.8% of the total number of vision loss in Lithuania were caused by AMD. In 2020, the number of AMD-affected people will increase to 16.5%.

Substantial research and development activity focused on these critical eye diseases is taking place in Lithuania. In collaboration with IT specialists, Lithuanian ophthalmologists are developing methods of biophysical models-based biomedical signal and image analysis to process large sets of data from biomedical signals, images, clearing up changes in the neurosensory function of the eye in the case of AMD and reflecting the relation to genetic polymorphisms. New information about pathogenesis of AMD can support the development of new methods of treatment and prevention of this disease.

Rapid development of information technologies and their application in mobile diagnostic technologies has enabled a significant increase in the quality of healthcare services provided by primary healthcare providers by way of establishing remote consultations with tertiary healthcare providers.

The use of portable diagnostic technologies, such as digital eye fundus cameras, in primary healthcare centres and practical application of telemedicine have enabled screening of the eye fundus for large numbers of population in remote rural areas and transmission of eye fundus images for specialist evaluation. These measures facilitate early diagnostics of such eye diseases as glaucoma, aging macular degeneration, and diabetic retinopathy. A network of remote ophthalmologic consultation is being formed in Lithuania and the results obtained so far show the effectiveness of such screenings.

Lithuanian ophthalmology has a long history of accomplishment and a strong clinical base at university hospitals. In collaboration with other European and world researchers and clinicians, it is making important strides in addressing diagnostics and treatment of critical eye diseases and in preventive care.

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