

European Glaucoma Society Congress report

New paradigm for glaucoma management

Sean Henahan
in Florence

IT'S not just about intraocular pressure any more. With the current flood of new findings on the pathogenesis, diagnosis and treatment of glaucoma, researchers at the 7th Congress of the European Glaucoma Society declared the existence of a new paradigm for glaucoma management.

The new paradigm considers glaucoma as a progressive optic neuropathy rather than simply a disease involving elevated intraocular pressure and impaired outflow. The new paradigm looks at glaucoma as a continuum, beginning with the imperceptible loss of retinal ganglion cells, followed by structural changes in the retinal nerve fibre layer and then in the optic disc, according to Robert Weinreb MD PhD, Director of the Hamilton Glaucoma Centre, University of California, San Diego.

Those neuropathological changes may precede by many years the visual field changes that are still often the first clinical indication of glaucomatous disease. The objective of the new paradigm is to identify at-risk patients and initiate potentially vision-preserving treatment well before perimetric changes appear, explained Dr Weinreb, who is also the current president of the Association of International Glaucoma Societies.

"The future is bright for being able to detect glaucoma at an early stage. The reason we want to detect glaucoma at an early stage and treat progression at an early stage is that there is a convergence of information from numerous clinical studies showing that treatment by lowering IOP has benefits across the glaucoma continuum. This is true whether you are treating early in the continuum, as demonstrated in OHTS, later as in the EMGTS, or even in advanced disease as in the



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CIGTS. Each of these trials has demonstrated the benefit of IOP lowering," he added.

Early detection is a key component of the new glaucoma paradigm. In addition to optic disc measurement, IOP and visual field testing, clinicians can now utilize several important new digital imaging modalities that have emerged in recent years. These techniques, including scanning laser tomography (e.g. Heidelberg Retinal Tomograph), scanning laser polarimetry (e.g. GDx VCC, Laser Diagnostic Technologies), and optical coherence tomography, allow clinicians to identify and track changes in the optic nerve head and retinal nerve fibre layer.

Glaucoma specialists have not abandoned field testing. On the contrary, recent developments in perimetry including short wavelength automated perimetry (SWAP), frequency doubling perimetry and automated flicker perimetry can be used to identify the loss of specific ganglion cell populations, allowing earlier recognition of field loss, and more accurate monitoring of disease progression.

There was considerable discussion and debate during the congress regarding how

to best integrate the diagnostic tools now available. A consensus is forming that the tools are complementary and together will help glaucoma specialists to recognise glaucomatous changes many years before symptoms appear, and will improve monitoring of treatment and disease progression.

"Glaucoma that is detected early is perhaps easier to stabilise than late glaucoma. Treatment goals include the preservation of visual field to allow patients to maintain their quality of life, including the ability to drive, to continue working or stay independent. But other issues need to be considered as part of a comprehensive treatment approach, including side effects, treatment costs and the inconvenience of medication," stressed Clive Migdal MD, Head of the Glaucoma Service at the Western Eye Hospital, London, and Secretary of the European Glaucoma Society.

Presentations during the congress also suggested a growing consensus that current tonometry techniques, including Goldman applanation tonometry, are inadequate. Attendees heard about several new experimental devices for measuring

IOP including a pressure-sensing contact lens and a pressure sensor telemetric tonometry device.

The availability of new diagnostic instruments that can identify pre-symptomatic structural changes comes at time when researchers are anxious to improve

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screening for glaucoma, according to Carlo Traverso MD, a glaucoma specialist from the University of Genoa, Italy.

"It is known that about 50% of individuals with unquestionable glaucoma are unaware of their condition. As a result, many throughout Europe present late with irreversible vision damage. Every individual over 40 years of age should have the opportunity of at least one examination by an experienced eye doctor."

Dr Traverso called for a comprehensive risk assessment strategy based on measurement of corneal thickness, presenting IOP and the degree of optic nerve head damage.



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"We know that thinner corneas, higher levels of intraocular pressure and perhaps a larger cup disc ratio are independent risk factors for disease progression. Treatment decisions should be based on a detailed assessment of individual risk."

The conference also served to introduce the European Glaucoma Society's updated glaucoma treatment guidelines. The

on glaucoma, together with an update on the evidence for the latest therapies and surgical techniques.

"These updated guidelines have been based on the most current glaucoma literature, conferences and clinical experiences available. They're critical for physicians because glaucoma treatment and management is unique for every patient, which the second edition

President of the European Glaucoma Society.

The new EGS guidelines incorporate recent results from several large, randomised controlled trials (OHTS, EMGT, CNTGS, AGIS, CGITS), which clarify the value of current treatments. In general, those trials concluded that lowering IOP early in the course of the disease slowed progression of visual loss and blindness later on.

"Much of what we thought of as good practice in treating glaucoma had now been strengthened by evidence from randomised controlled trials. These trials confirm the benefit of lowering and stabilising eye pressure in slowing disease progression. Evidence also shows the benefit of early treatment in preventing further vision loss due to glaucoma," Dr Hitchings commented.

The new EGS guidelines also emphasize the role of patient compliance and the measurement of quality of life in treatment decisions and outcome. This followed the growing recognition among glaucoma specialists that glaucoma patients are frequently elderly and may have concomitant health problems that interfere with their ability to take their medicines correctly.

"Although hard to quantify, quality of life is an important

outcome measure for patients and the effect of both diagnosis and treatment on the individual have to be considered. Visual function is closely linked to quality of life. treatment side effects, dosing schedule and cost all have to be taken into account when choosing a therapy," said John Thygesen MD, Associate Professor in the Department of Ophthalmology,

University Hospital of Copenhagen, Denmark.

The Congress highlighted the evolutionary step forward now taking place in glaucoma science. However, it also confronted the many unanswered questions still facing glaucoma researchers, including: the pathogenesis of ganglion cell loss; the utility of neuroprotective drug strategies; the genetics of glaucoma; the need for objective tonometry and perimetry methods; and the importance of 24 variations in IOP.



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new edition incorporates the latest clinical research and thinking

of the guidelines emphasises even more strongly," explained Professor Roger Hitchings MD,