New risk calculator helps physicians assess risk for glaucoma

Robert Weinreb MD

Patients with ocular hypertension may have multiple risk factors - such as age, elevated intraocular pressure, thinner central cornea, and so forth - for progression to glaucoma, said Dr. Weinreb. A collective assessment of these risk factors can help clinicians identify those patients with elevated eye pressure who are more likely to progress to glaucoma and may benefit from early treatment. It can also identify those that are at low risk for progression to glaucoma who may not need treatment.

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Felipe A Medeiros MD

Dr. Medeiros emphasised that the risk calculator should be used as an adjunct to, and not as a substitute for, clinical experience and judgment. “Each physician is likely to have his or her own threshold for treatment. A long with the risk assessment provided by the calculator there are several other factors that need to be taken into account when deciding the treatment strategy, such as the patient’s overall health status, life expectancy and commitment to treatment, as well as side effects from medication and costs. They all should be weighed to provide effective management of these patients,” he said.

The glaucoma risk calculator was supported in part by an independent research grant from Pfizer, Inc, and is distributed free of charge to interested ophthalmologists.


The electronic risk calculator, developed by Robert Weinreb MD and Felipe A Medeiros MD, glaucoma specialists at the Hamilton Glaucoma Center at the University of California, San Diego, US, represents the latest advancement in an ongoing effort to create and introduce predictive tools in ophthalmic medicine.

“The risk calculator helps to identify patients with ocular hypertension who are at high risk of developing glaucoma and who may benefit from treatment, as well as those who are at low risk who may not need treatment. It will allow doctors to assess patient risk levels and, if needed, recommend treatment options that can help avert possible progression to glaucoma,” said Dr. Weinreb, director of the Hamilton Glaucoma Center and distinguished professor of ophthalmology at the University of California, San Diego, US.

“Although the OHTS study provides us with good evidence regarding the rates of conversion to glaucoma, we still lack reliable studies about the rate of progression from ocular hypertension to functional deficit and blindness. Some retrospective studies estimate that between 1.5% and 11% of patients with ocular hypertension will progress to blindness,” he said.

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Dr. Medeiros said that while the benefits of treatment have been well established by the OHTS study, it is also important to determine when the benefits of treatment outweighed the risks. He noted that a panel of experts recently proposed guidelines regarding the appropriate thresholds for treatment. Patients deemed to be low risk (as with an estimate of progression to glaucoma of less than 5%) should be monitored; those considered at moderate risk (5%-15%) may receive treatment depending on the final judgement of the physician; and those at high risk should generally receive treatment, he said.