

COMMENTARY

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The implications of randomized, controlled clinical trials in glaucoma on clinical practice

What does the evidence tell us?

SUMMARY

Lowering intraocular pressure (IOP) to prevent disease progression in open-angle glaucoma has been an accepted practice for more than a century. However, strong clinical evidence on the beneficial effect of IOP reduction has only become available in the past few years with such studies as the Ocular Hypertension Treatment Study (OHTS), the Early Manifest Glaucoma Trial (EMGT), the Collaborative Initial Glaucoma Treatment Study (CIGTS), and the Advanced Glaucoma Intervention Study (AGIS). This article dissects each of these studies and extracts points that are relevant to clinical practice.

The OHTS study showed that not all patients with ocular hypertension need to be treated. The magnitude of IOP elevation and the presence of other risk factors should be considered before initiation of treatment. Ocular hypotensive treatment in the high-risk subset of patients will delay or prevent the development of glaucoma. Moreover, it revealed that central corneal thickness may confound Goldmann applanation tonometry measurements.

The EMGT is the first adequately powered randomized controlled clinical trial to demonstrate the beneficial effect of lowering the IOP in open-angle glaucoma (OAG) patients. It showed a positive correlation between the level of IOP reduction and the risk of progression.

The CIGTS showed the importance of aggressive therapy (medical, laser and/or surgical) and setting individualized IOP target based on the patient's glaucoma status and baseline IOP. It expounded on the concept of quality of life as a measure of success in the treatment of glaucoma.

The AGIS trial showed that lowering IOP to below the upper limit of statistically "normal" levels (e.g. <21 mm Hg) may not be enough to prevent progression in patients with OAG. Patients who had sustained greater IOP reduction had a more favorable outcome in terms of visual-field preservation.

All these trials confirmed the beneficial effect of IOP reduction in OAG. They showed that the management of glaucoma patients must be individualized to help preserve vision and maintain quality of life. Caution should be used when interpreting the data in these studies. The applicability of recommendations to our patients should be ascertained by looking at the characteristics of the patients in each of these studies. Limitations in the local setting, the availability of resources, patient preferences, and our expertise in the clinical decision-making process should be considered.

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The authors have no proprietary interest in any aspect of this article.

PHILIPP J OPHTHALMOL 2004; 29(2): 99-106.

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