The Glaucoma Laser Trial (GLT)

American ophthalmologists have an opportunity to participate in an important investigation which can define the value of laser treatment in the initial therapy of glaucoma.

There is no "best" treatment for glaucoma. In the first place, glaucoma is as heterogeneous as cancer; in the second, proper treatment depends on so many variables that generalizations are almost worthless. Recommendations for "preferred treatment" are only helpful when they deal with a meticulously defined aspect of glaucoma.

The Glaucoma Laser Trial (GLT), sponsored by the National Eye Institute, has done just this. It has carefully defined the patient population and how that population is to be diagnosed and managed. The trial should answer one of the most important questions presently facing ophthalmologists, specifically, which is safer and which is more effective early therapy of primary open-angle glaucoma, medical treatment or argon laser trabeculoplasty.

As with any treatment, the results of this study must be considered in terms of risk-benefit ratio. Therapy that is completely safe may be valuable even if it produces small benefit. In contrast, a highly risky treatment may be valuable if the benefits are great. The risks of medical therapy of glaucoma are relatively well-known. Those of argon laser trabeculoplasty (ALT) are also relatively well-known regarding the short-term effects on the eye. Certainly ALT is safer for the general health of the patient than is medical therapy. But is the difference clinically important? If ALT is as safe and as effective as medical therapy, it would be the treatment of choice. Since the diagnosis and management of patients with glaucoma occupies a major portion of ophthalmologists' time, and since glaucoma continues to be a leading cause of blindness, a valid answer to the question regarding the relative value of medical or laser therapy is of high priority.

The GLT is designed to answer this question. Eyes of consenting, newly diagnosed patients with primary open-angle glaucoma are randomly assigned to two groups, one utilizing a standardized protocol for medical therapy, and the other a standardized method of ALT. The patients are meticulously followed, with data collected on intraocular pressure, anterior chamber angle, discs, and fields. The optic discs are monitored ophthamoscopically and by stereoscopic photographs independently read by a specially reading center. Visual fields are determined with the Octopus computerized perimeter and are monitored independently by a visual field reading center. All feasible means of avoiding bias and assuring a valid result have been incorporated into the study. This has taken hundreds of hours of discussion and compromise. The result is a beautifully standardized and controlled investigation. However, since the population is so carefully defined, the number of suitable patients is small; further, since only newly-diagnosed patients are admissible to the study, and since most of the centers participating are referral centers whose efforts are heavily devoted to the care of previously diagnosed cases, accumulation of the 400 cases required for the study is difficult. The general ophthalmic practitioner will be the physician most likely to find cases appropriate for inclusion in GLT. Unless such practitioners refer their patients, the GLT will probably not succeed.

Were 400 ophthalmologists in areas close to GLT treatment centers to contribute one case each, the GLT would be able to answer a truly important question that would materially improve patient care and help ophthalmologists do their job better.

The outcome of the diabetic retinopathy study emphasizes the value of a controlled therapeutic clinical trial. Prior to the National Institutes of Health-sponsored study of the possible benefits of photocoagulation in patients with diabetic retinopathy, the real benefits of such therapy were not appreciated. That investigation firmly justified the position of retinal photocoagulation as a means of preserving the vision of diabetics. The GLT has the opportunity to provide similarly important information for a disease of even higher prevalence. The GLT needs and deserves
the support of American ophthalmologists. A summary of the design of the study, including eligibility criteria for the patients, and the addresses of the participating centers, follows this editorial. This investigation provides an opportunity for American ophthalmologists to participate in answering a vital question. I am sure that they will choose to do so.

GLAUCOMA LASER TRIAL (GLT)

Major Patient Selection Criteria
- Bilateral primary open angle glaucoma
  Visual field defect in at least one eye with IOP greater than 22 mm Hg in both eyes
  or
  Marked disc changes associated with glaucoma and elevated IOP in both eyes
- Aged 35 years of age or older
- Visual acuity 20/70 or better
- Little or no glaucoma medication within the last six months

Treatments
- Both eyes of patients receive treatment
- One eye, chosen randomly, receives argon laser trabecuoplasty with topical medication as necessary
- The fellow eye receives topical medication administered in a stepped fashion

Follow-up
- Patients will be followed for three years

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