

A Randomized Trial of Brimonidine Versus Timolol in Preserving Visual Function: Results From the Low-pressure Glaucoma Treatment Study

Krupin T, Liebmann JM, Greenfield DS, Ritch R, Gardiner S.

Department of Ophthalmology, Feinberg School of Medicine, Northwestern University and the Chicago Center for Vision Research, Chicago, Illinois.

PURPOSE: To compare the alpha2-adrenergic agonist brimonidine tartrate 0.2% to the beta-adrenergic antagonist timolol maleate 0.5% in preserving visual function in low-pressure glaucoma.

DESIGN: Randomized, double-masked, multicenter clinical trial.

METHODS: Exclusion criteria included untreated intraocular pressure (IOP) >21 mm Hg, visual field mean deviation worse than -16 decibels, or contraindications to study medications. Both eyes received twice-daily monotherapy randomized in blocks of 7 (4 brimonidine to 3 timolol). Standard automated perimetry and tonometry were performed at 4-month intervals. Main outcome measure was field progression in either eye, defined as the same 3 or more points with a negative slope ≥ -1 dB/year at P RESULTS: Ninety-nine patients were randomized to brimonidine and 79 to timolol. Mean (\pm SE) months of follow-up for all patients was 30.0 ± 2 . Statistically fewer brimonidine-treated patients (9, 9.1%) had visual field progression by pointwise linear regression than timolol-treated patients (31, 39.2%, log-rank 12.4, $P = .001$). Mean treated IOP was similar for brimonidine- and timolol-treated patients at all time points. More brimonidine-treated (28, 28.3%) than timolol-treated (9, 11.4%) patients discontinued study participation because of drug-related adverse events ($P = .008$). Similar differences in progression were observed when analyzed by GCPM and the 3-omitting method.

CONCLUSION: Low-pressure glaucoma patients treated with brimonidine 0.2% who do not develop ocular allergy are less likely to have field progression than patients treated with timolol 0.5%.

Am J Ophthalmol. 2011 Jan 21. (Epub ahead of print)

<http://www.ncbi.nlm.nih.gov/pubmed/21257146>