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Abstract Information

Abstract Title:

Is timolol really not effective at night?

Purpose:

To assess whether the 24 hour effects of timolol on intraocular pressure (IOP) is different between the patients whose IOP without medication peaks during the day and the patients whose IOP peaks during the night.

Design:

Comparative prospective nonrandomized clinical trial.

Participants:

Forty-eight patients with normal tension glaucoma, primary open angle glaucoma, or ocular hypertension.

Main Outcome Measures:

The primary efficacy variable was circadian IOP.

Methods:

After four weeks wash-out of glaucoma medication, patients received timolol 0.5% twice daily at 7AM and 7PM. Patients were instructed to measure their circadian IOP every three hours, five measurements each time, by using Home Tonometer, a self-measuring automated air-puff tonometer, on day 0 without medication, and on day 1 with medication. All measurements were taken sitting position. Average of middle three IOP values were analyzed. Based on circadian IOP curves without medication, patients were divided into two groups: day type: in which maximum IOP was recorded between 9AM to 6PM, night type: in which maximum IOP was recorded between 9PM to 6AM.

Results:

Without medication, 61% of patents showed circadian IOP curves of the day type, and 39% showed of night type. In the day type patients, timolol significantly lowered IOP from 9AM to 0PM, but not at 3AM and 6AM. In night type patients, timolol significantly lowered IOP all the time measured but for 9PM.

**Conclusion:**

IOP lowering effect of timolol had circadian variation. In the patients with day type circadian IOP curve, the effect was less during the midnight and the early morning. On the other hand, in the patients with night type circadian IOP curve, the maximum effect was observed during that time period. Timolol may not be ineffective at night, but effectively reduce the peak of circadian IOP variation.