Administration of the fixed combination of latanoprost 0.005% and timolol 0.5% in glaucoma patients with an intraocular pressure over 30 mmHg

Yelda Buyru Özkurt
Tomris Sengor
Tufan Evciman
Melih Haboğlu
Gökçen Baş
Sevda Aydın
Fatih Sultan Mehmet Training and Research Hospital, Istanbul, Turkey

Purpose: To evaluate the intraocular pressure (IOP) reducing effect of a fixed combination of 0.005% latanoprost and 0.5% timolol in patients with an IOP of 30 mmHg or higher.

Design: Prospective, randomized clinical trial.

Participants: Twenty-eight patients.

Methods: Patients had received no prior medical glaucoma treatment. Routine ophthalmic examinations and visual field tests were performed before and after treatment for each patient.

Results: Mean IOP was 32.28 ± 0.92 mmHg before treatment. Mean IOP levels were 18.75 ± 0.68 for the first day, 17.96 ± 0.90 for the first week and 17.64 ± 0.66 for the first month after treatment.

Conclusion: A fixed combination of latanoprost 0.005% and timolol 0.5% is effective in significantly reducing IOP in glaucoma patients with an IOP greater than 30 mmHg.

Keywords: latanoprost, timolol, combination, glaucoma, intraocular pressure

Introduction

Glaucoma needs to be treated in order to prevent development of additional impairment in the optic disc in the long term and to maintain the intraocular pressure (IOP) level to restrict any potential loss in the visual field or visual acuity.1 IOP is a correctable factor in glaucoma, and a reduction in IOP can typically be achieved by medication, laser treatment or surgery. The standard approach for medication is to initiate a monotherapy with an individual agent.2 The prostaglandin analogues, the most common medications indicated, can reduce IOP by up to 30%. Particularly when used in combination, instilling a drop immediately after the first drop of the other agent will result in both removal of the first agent from the field and reduced concentration of the second agent. Studies have shown that administration of more than two drops daily directly reduces patient compliance. Fixed combinations of glaucoma medications reduce the number of bottles of medication patients need to purchase, which can represent a cost saving for those whose drug plan requires a per bottle copayment.1 Fixed combinations also represent a reduction in the number of drops per day required to be instilled.3

In this study we evaluated the efficacy of a fixed combination of 0.005% latanoprost and 0.5% timolol in lowering the IOP as a first-line therapy in glaucoma patients with an IOP greater than 30 mmHg.

Materials and methods

The study included a total of 28 patients (15 females, 13 males), who had been initially diagnosed with glaucoma in the Glaucoma Unit of the Eye Clinic of the Fatih Sultan Mehmet Training and Research Hospital. Mean age was 58.64 ± 8.84 years. Patients with primary open angle glaucoma, pseudoxefoliation glaucoma or pigmentary
Clinical Ophthalmology 2009:3

Table 1: Demographic characteristics of patients

<table>
<thead>
<tr>
<th>Type of glaucoma</th>
<th>Primary open angle glaucoma</th>
<th>Pseudoexfoliative glaucoma</th>
<th>Pigmentary glaucoma</th>
</tr>
</thead>
<tbody>
<tr>
<td>Female</td>
<td>15 (53.57%)</td>
<td>10 (35.71%)</td>
<td>4 (14.28%)</td>
</tr>
<tr>
<td>Male</td>
<td>13 (46.42%)</td>
<td>11 (39.28%)</td>
<td>2 (7.14%)</td>
</tr>
<tr>
<td>Total</td>
<td>28</td>
<td>21 (75%)</td>
<td>6 (21.42%)</td>
</tr>
</tbody>
</table>

Table 2: Pre-treatment and post-treatment intraocular pressure (IOP) values

<table>
<thead>
<tr>
<th>Pre-treatment IOP (mean mmHg ± SD)</th>
<th>Post-treatment IOP Day 1 (mean mmHg ± SD)</th>
<th>Post-treatment IOP Week 1 (mean mmHg ± SD)</th>
<th>Post-treatment IOP Month 1 (mean mmHg ± SD)</th>
<th>Post-treatment IOP Month 6 (mean mmHg ± SD)</th>
<th>Pre-treatment visual field mean deviation (dB)</th>
<th>Post-treatment IOP mean deviation (dB)</th>
</tr>
</thead>
<tbody>
<tr>
<td>32.28 ± 0.92</td>
<td>18.75 ± 0.68 (p &lt; 0.05)</td>
<td>17.96 ± 0.90 (p &lt; 0.05)</td>
<td>17.64 ± 0.66 (p &lt; 0.05)</td>
<td>17.46 ± 0.50 (p &lt; 0.05)</td>
<td>−3.1 ± 3.9</td>
<td>−3.3 ± 4.1 (p &gt; 0.05)</td>
</tr>
</tbody>
</table>
the mean reduction obtained by a latanoprost-based fixed combination was 1.0 mmHg higher compared with a dorzolamide-based fixed combination twice a day, along a diurnal curve with three timepoints. It has been demonstrated that the latanoprost–timolol fixed combination therapy decreases IOP by more than 2.9 mmHg compared with timolol alone, and by more than 1.1 mmHg compared with latanoprost alone. Although diverse rates of iris pigmentation have been reported in previous studies, we believe that lack of any iris pigmentation in our cases might have been associated with the shorter study period.

We believe that our study group was preliminary, consisting of a limited number of patients, and patient adherence to the therapy was closely related to once-daily dosage. In conclusion, our short study has shown that the 0.005% latanoprost and 0.5% timolol fixed combination is effective in significantly reducing IOP in glaucoma patients with an IOP greater than 30 mmHg.

Disclosures
The authors declare no conflicts of interest.

References