Use of preservative-free multidose dispenser (Comod system) for glaucoma medications

Ahmad Fauzi, MD1
Shamala S. Ganesan, MD1
Mimiwati Zahari, MD1
Mariam Jamaludin, MPH2

1Department of Ophthalmology
2Department of Social and Preventive Medicine
Faculty of Medicine, University Malaya
Malaysia

ABSTRACT

Purpose
To describe our experience in the use of preservative-free Comod system in glaucoma patients.

Methods
120 glaucoma patients were recruited and randomly assigned to group I (conventional system) or group II (Comod system). Schirmer’s test, tear-breakup time (BUT), and culture and sensitivity (CS) tests were performed. A self-administered questionnaire was given to participants to evaluate ease of application, ocular stinging, and dryness.

Results
The Comod system did not cause any ocular stinging (p < 0.01) and was easy to use. Tear BUT and Schirmer’s test were not different between the 2 groups. CS tests of the Comod at week 11 did not yield any organism.

Conclusion
The Comod system was more comfortable, easy to use, and can be used as a multidose system in administering glaucoma medications.

A PRESERVATIVE is important for two reasons: to prevent the patient from introducing microbiologically contaminated drugs into his eye(s) and to maintain the potency of the ophthalmic drug.1, 2 The inclusion of preservatives in eye-drop dispensers, however, does not guarantee sterility. A high contamination rate was reported by Schein et al.3 (29%), Marion and Tampert 4 (27%), Hovding and Sjursen5 (12.9%).

The Comod eye-drop dispenser, introduced recently in Malaysia, has a shelf life of 2 years and can be used for 12 weeks after it has been opened.6 As a sealed system, it has an “airless pump” that works without air equalization and prevents the reflux of external air and liquid when the solution is dosed. It also has an average drop size of 32.5 ± 2.5 ul, which is equivalent to the capacity of the inferior conjunctival fornix.

Timolol, a commonly used maintenance medication for glaucoma, comes in both the conventional eye-drop dispenser and in Timo-Comod system. We evaluated our experience using both systems. We performed the Schirmer’s test, tear-breakup time (BUT), and graded the conjunctival injection by fluorescein. Culture and sensitivity for bacterial contamination were done for the Comod system.

One hundred twenty patients with open-angle glaucoma were randomly assigned to conventional Timolol 0.25% (Group I, 60 patients) or Comod system (Group II, 60 patients). Patients in both groups were instructed on the correct method of application specifically in avoiding any contact between the dropper tip and the eye or lid to maintain sterility.

This open-label study was divided into two phases: a comparison of the Comod system with the conventional system in phase 1, and determination of sterility of the Comod system in phase 2. Patients were also given a self-administered questionnaire to grade the convenience of application, severity of ocular stinging, and dryness of eyes.

Convenience of application was graded as follows: (1) Difficult—frequent spillage, (2) Moderately difficult—spillage of more than 10 times in a month, (3) Easy—spillage less than 10 times in a month, and (4) Extremely easy—no spillage. Spillage was defined as any drop that...
Conjunctival injection was negative in both groups and cultures were also negative, even at 11 weeks.

Although several patients initially complained of some difficulty in using the Comod system, it becomes easier with repeated use.

References

Tuberous sclerosis in a 17-year-old female

Ernesto D. Golez III, MD
Richard C. Kho, MD
Sentro Oftalmologico Jose Rizal
University of the Philippines–Philippine General Hospital
Manila, Philippines

ABSTRACT

Objective
To report a classic case of tuberous sclerosis complex.

Methods
This is a case report.

Results
A 17-year-old female presented with bilateral blurring of vision with left temporal headaches and seizures. Physical examination showed she had adenoma sebaceum, ash-leaf spots, and shagreen patches. Computed tomography revealed hydrocephaly, tubers, and subependymal nodules while magnetic resonance imaging revealed a giant-cell astrocytoma, later confirmed through histopathologic examination. Renal ultrasound showed findings consistent with an angiomyolipoma. Ophthalmologic findings included left cortical cataract, papillidema, and retinal astrocytoma.

Conclusion
The findings were consistent with tuberous sclerosis.

TUBEROUS sclerosis complex (TSC) is a multisystemic and neurocutaneous, autosomal-dominant disorder

<table>
<thead>
<tr>
<th>Eye/Treatment Period</th>
<th>Tear-Breakup Time (seconds)</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Group I (n=60)</td>
<td>Group II (n=60)</td>
</tr>
<tr>
<td>Right eye at baseline</td>
<td>12.53 ± 6.17</td>
<td>12.02 ± 5.61</td>
</tr>
<tr>
<td>Left eye at baseline</td>
<td>12.30 ± 5.98</td>
<td>11.57 ± 4.70</td>
</tr>
<tr>
<td>Right eye at 3 weeks</td>
<td>12.80 ± 6.05</td>
<td>12.75 ± 5.70</td>
</tr>
<tr>
<td>Left eye at 3 weeks</td>
<td>12.03 ± 5.76</td>
<td>12.48 ± 5.23</td>
</tr>
</tbody>
</table>

Table 1. Mean tear-breakup time.