higher compared with Chinese (0.01%) and Malays (0.02%, \( P = .0004 \)).

Direct comparison of these findings with others\(^1\)\(^–\)\(^3\) is problematic because of differences in study design, population demographics, and diagnostic criteria of amblyopia. Nonetheless, the overall prevalence of amblyopia was lower than other studies.\(^1\)\(^–\)\(^3\) The low prevalence in our study may partly be explained by a national screening program, started in 1991, to detect and treat amblyopia among Singaporean school children. All school children have annual visual acuity checks at the beginning of their primary education (7 years).\(^4\) We have no data, however, to verify that this program is effective in reducing amblyopia.

We observed little difference in the prevalence of amblyopia among Chinese, Indian, and Malay men. The minor racial/ethnic variation in the causes of amblyopia, however, may possibly reflect racial/ethnic differences in the frequency and impact of refractive errors and other ocular disorders in Asian people.\(^4\)

### TABLE I. Prevalence and Causes of Amblyopia, Young Adult Men in Singapore

<table>
<thead>
<tr>
<th>Cause of Amblyopia</th>
<th>Total N = 122,596</th>
<th>Chinese N = 95,393</th>
<th>Malay N = 18,824</th>
<th>Indian N = 8379</th>
<th>( P^* )</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
<td>%</td>
<td>n</td>
<td>%</td>
<td>n</td>
</tr>
<tr>
<td>Anisometropia</td>
<td>164</td>
<td>0.13</td>
<td>129</td>
<td>0.14</td>
<td>27</td>
</tr>
<tr>
<td>Strabismic</td>
<td>24</td>
<td>0.02</td>
<td>14</td>
<td>0.01</td>
<td>3</td>
</tr>
<tr>
<td>Meridional</td>
<td>62</td>
<td>0.05</td>
<td>46</td>
<td>0.05</td>
<td>12</td>
</tr>
<tr>
<td>Form deprivation</td>
<td>9</td>
<td>0.01</td>
<td>7</td>
<td>0.01</td>
<td>2</td>
</tr>
<tr>
<td>Combination</td>
<td>65</td>
<td>0.05</td>
<td>52</td>
<td>0.05</td>
<td>11</td>
</tr>
<tr>
<td>Others</td>
<td>104</td>
<td>0.08</td>
<td>76</td>
<td>0.08</td>
<td>15</td>
</tr>
<tr>
<td>Any amblyopia</td>
<td>428</td>
<td>0.35</td>
<td>324</td>
<td>0.34</td>
<td>70</td>
</tr>
</tbody>
</table>

\( *P \) value is based on \( \chi^2 \) test comparing racial/ethnic groups.

**Successful Treatment of *Fusarium* Endophthalmitis With Voriconazole and *Aspergillus* Endophthalmitis With Voriconazole Plus Caspofungin**

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**PURPOSE**: To report successful treatment of exogenous *Fusarium* and *Aspergillus* endophthalmitis with new antifungal agents.

**DESIGN**: Interventional case report.

**METHODS**: Treatment of two cases is reviewed.

**RESULTS**: A 64-year-old man developed post-cataract *Fusarium moniliforme* endophthalmitis. Infection persisted despite removal of the intraocular lens, three vitrectomies, and five intravitreal injections of amphotericin. Inflammation resolved and vision improved from 20/80 to 20/40 on 6 months of oral voriconazole. A 55-year-old man developed post-cataract intraocular inflammation. After three vitrectomies and removal of the intraocular lens, *Aspergillus fumigatus* endophthalmitis was diagnosed. Intravitreal amphotericin and systemic voriconazole were given, but one week later there were accepted for publication Mar 7, 2005.

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early signs of recurrence. Intravenous caspofungin was added and the eye improved. Caspofungin was continued for 6 weeks and voriconazole for 6 months. Vision improved from counting fingers to 20/80 at 6 months and 20/25 at 23 months.

CONCLUSION: Voriconazole is a promising new therapy for Fusarium and Aspergillus endophthalmitis. Caspofungin may act synergistically with voriconazole in treating Aspergillus endophthalmitis. (Am J Ophthalmol 2005;140:552–554. © 2005 by Elsevier Inc. All rights reserved.)

TWO-THIRDS OF PATIENTS WITH MOLD ENDOPTHALMITIS lose useful vision despite treatment.1,2 Older systemic antifungal agents rarely improve this outcome. We report excellent visual outcome in two cases by the use of voriconazole, with and without caspofungin.

• CASE 1: In 1999, a 64-year-old man developed left eye (OS) intraocular inflammation 3 weeks after cataract extraction with intraocular lens (CE/IOL) placement. Inflammation persisted despite topical corticosteroids. At 2 months, he received vitrectomy and intravitreal antibiotics, including amphotericin (5 μg); vitreous cultures grew Fusarium moniliforme (identified by a mycology reference laboratory). At 3 months, he was referred to the Massachusetts Eye and Ear Infirmary with OS acuity 20/30, 3+ anterior chamber (AC) cells, moderate vitritis with filamentous debris inferiorly (Figure 1). Over the next 6 weeks, vitritis recurred despite IOL removal, two vitrectomies, and four intravitreal injections of amphotericin (5, 10, 5, 5 μg). Culture of the IOL and one vitreous sample grew Fusarium. After another vitrectomy, the patient was enrolled in a phase III trial and received voriconazole 300 mg po bid for 6 months. The vitreous remained clear, and vision improved from 20/80 to 20/40. Two weeks after stopping voriconazole, mild vitritis recurred. Vitreous cultures were negative, so voriconazole was not available per trial protocol. The vitritis cleared on fluconazole 800 mg po qd, which was subsequently tapered with vision returning to 20/40.

• CASE 2: Six weeks after CE/IOL in 2003, a 55-year-old man developed intraocular inflammation OS. This improved then recurred on topical corticosteroids. Vitrectomy at 3 months was nondiagnostic and he was referred with acuity OS 20/300, hypopyon, and 4+ aqueous cells. Vitrectomy was again nondiagnostic. One week later, hypopyon recurred and a new feathery mass appeared in the superior AC. Vitrectomy and IOL removal was performed, and amphotericin (5 μg) was injected. Culture of
the mass grew Aspergillus fumigatus (culture confirmed by reference laboratory). Pathology showed hyphae invading the lens capsule and adjacent fibrovascular tissue (Figure 2). Postoperatively, a white corneal endothelial plaque persisted superiorly (Figure 3). He received intravitreal amphotericin (5 μg), topical amphotericin plus natamycin, and systemic voriconazole (6mg/kg IV q12h × 2 doses, then 200 mg po bid). One week later, eye pain worsened and the endothelial plaque appeared larger. Intravitreal amphotericin (10 μg) was injected and IV caspofungin was started (70 mg IV day one, then 50 mg IV qd). Eye pain improved over the next week, plaque size remained stable, a fourth vitrectomy was also successfully performed (cultures were negative) was also successfully confirmed negative cultures, and intravitreal amphotericin (10 μg) was injected and IV caspofungin was started (70 mg IV day one, then 50 mg IV qd). Eye pain improved over the next week, plaque size remained stable, a fourth vitrectomy was successful to treat a case of post-cataract endophthalmitis that had failed amphotericin therapy. 6 Voriconazole treatment of five patients with endophthalmitis, three of whom also received caspofungin. 4

Voriconazole treatment of five patients with Candida endophthalmitis, three of whom also received caspofungin. 4 Mold infections are more difficult to cure than Candida infections, but voriconazole has been used to treat endophthalmitis attributable to Paecilomyces lilacinus, Scedosporium apiospermum, and Lecythophora mutabilis. A case identified as Fusarium endophthalmitis on the basis of immunohistochemistry (cultures were negative) was also successfully treated with voriconazole. 5 Our first case demonstrates successful treatment of culture-positive Fusarium endophthalmitis with voriconazole. Our second case demonstrates successful treatment of Aspergillus endophthalmitis with voriconazole and caspofungin. We are unaware of any previous reports of Aspergillus endophthalmitis in which this combination therapy was used. Caspofungin, the first approved echinocandin, is active against Candida and Aspergillus but not Fusarium. Caspofungin’s ability to penetrate the blood-eye barrier is unknown, but it was used successfully to treat a case of post-cataract Acremonium endophthalmitis that had failed amphotericin therapy. 6 Caspofungin may act synergistically with voriconazole against Aspergillus, 7 and our second case supports this.

REFERENCES


Rapid Diagnosis of Orbital Mantle Cell Lymphoma Utilizing Fluorescent In Situ Hybridization Technology

Robert Coffee, MD, MPH, John Lazarchick, MD, Patricia Chévez-Barrios, MD, and Gene Howard, MD

PURPOSE: We describe a patient with an orbital lymphoma in which genetic analysis utilizing fluorescent in situ hybridization (FISH) on a touch preparation of the tumor identified the classic 11:14 translocation associated with a mantle cell lymphoma. DESIGN: Clinicopathologic case report. METHODS: A 76-year-old woman presented complaining of ptosis and was found to have an orbital lesion suspected of being a lymphoproliferative malignancy. A biopsy of the lesion was performed in the office, and the sample was processed using a touch preparation technique. RESULTS: Genetic analysis utilizing FISH on a touch preparation of the tumor identified the classic 11:14 translocation associated with a mantle cell lymphoma. CONCLUSIONS: FISH has become useful in the differential diagnosis of lymphoproliferative lesions. The touch preparation method requires smaller amounts of tissue than standard methods, and samples may be obtained in an office setting. (Am J Ophthalmol 2005;140:554–556. © 2005 by Elsevier Inc. All rights reserved.)

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