The evolution of infection due to *T. beigelii* is often fatal, and progression of trichosporonosis in patients receiving amphotericin B has been reported [2, 6, 7]. In our case, itraconazole therapy was administered for two reasons following lack of response to treatment with amphotericin B. First, some reports suggest that invasive aspergillosis, which is resistant to amphotericin B therapy, will sometimes respond to treatment with itraconazole [1]. On the other hand, there are infections caused by uncommon fungal pathogens that are often unresponsive to treatment with amphotericin B [1, 3, 7]. On the basis of experimental [4, 5] and clinical results [8, 9], some authors have proposed azoles as effective therapy for *T. beigelii* infection. Itraconazole has higher in vitro activity than amphotericin B [5]. Our patient was afebrile after 2 days of itraconazole therapy. This response could be attributed directly to itraconazole therapy because the combination of amphotericin B with azoles has not shown synergy against *Trichosporon* species [2]. Therefore, *T. beigelii* pneumonia can be treated effectively with itraconazole, although some authors propose a combination of amphotericin B and a triazole [4]. Treatment with higher doses of itraconazole should achieve adequate serum levels.

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*Candida tropicalis* Osteomyelitis: Case Report and Review

Osteomyelitis due to *Candida* species is an unusual but recognized entity in immunocompromised patients, neonates, and patients with intravascular access devices. A recent case of *Candida tropicalis* osteomyelitis at our institution, St. Jude Children’s Research Hospital in Memphis, prompted a review of our medical database and of the available literature. Two prior cases at this institution were identified, and 11 cases were reported previously from other hospitals. We describe one immunocompromised child with *C. tropicalis* osteomyelitis.

In August 1996, on day 28 of induction therapy for acute lymphoblastic leukemia, a 5-year-old boy was admitted to our hospital for suspected septic arthritis of the knee; he had neutropenia and fever. He did not have a central venous catheter in place, and he had no history of surveillance cultures positive for *Candida* species. He reported the occurrence of a minor fall 3 days before admission. An MRI on hospital day 2 revealed an area consistent with osteomyelitis in the distal femur, adjacent to the knee. On hospital days 4 and 6, purulent fluid was aspirated from the knee;

Financial support: This work was supported in part by the National Cancer Institute (P30 CA 21765) and by the American Lebanese Syrian Associated Charities.

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Clinical Infectious Diseases 1998;26:1000–1

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1058–4838/98/2604–0038$03.00

References

Cultures of each aspirate yielded *C. tropicalis*. Therapy with amphotericin B (1 mg/[kg · d]) and rifampin (20 mg/[kg · d]) was initiated on hospital day 5. Clinical improvement corresponded to a rise in the patient’s neutrophil count. Six weeks after therapy was begun, physical examination revealed complete clinical resolution of the osteomyelitis and arthritis, and treatment was discontinued.

Two additional cases of *C. tropicalis* osteomyelitides were identified at this institution by a review of medical records. Data on 11 cases from the literature and the three cases from our institution are summarized in table 1. The clinical presentations in the 14 patients with *C. tropicalis* osteomyelitis were diversified, with positive blood cultures and multiple sites of involvement. Of these two immunocompromised children, both from our institution, one had two long bones involved, and one had a metacarpal and multiple abdominal sites involved. None of the adults had disseminated disease. Findings on plain radiographs supported a diagnosis
of osteomyelitis; this was evident at presentation in nine of the 14 cases reviewed, including the cases of all neonates. Another two patients had unremarkable plain films initially, but findings were representative of osteomyelitis on follow-up radiographic studies.

C. tropicalis accounts for >15% of all reported cases of candidal osteomyelitis despite the fact that it is infrequently isolated in routine surveillance cultures or from patients with less severe disease states. There have been 92 cases of C. tropicalis blood infection over 35 years in >15,000 patients treated at this institution, and three of these cases resulted in osteomyelitis. Despite much greater numbers of Candida albicans blood infection, no case of C. albicans osteomyelitis has been documented. Previous studies of immunocompromised hosts have also suggested that C. tropicalis may be a more invasive or pathogenic organism than C. albicans. Studies at our institution indicate an 11.2% risk of C. tropicalis infection. Acta Ortho Scand 1986;57:563–5.

References


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Table 1. Characteristics of cases of Candida tropicalis osteomyelitis from the present report and a literature review.

<table>
<thead>
<tr>
<th>Reference</th>
<th>Age (y)/Sex</th>
<th>Risk factors</th>
<th>Site of infection</th>
<th>Treatment</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>[PR]</td>
<td>5/M</td>
<td>Leukemia</td>
<td>Femur</td>
<td>Amphotericin B, rifampin</td>
<td>Resolved over 1 mo</td>
</tr>
<tr>
<td>[PR]</td>
<td>6/F</td>
<td>Leukemia</td>
<td>Femur, humerus</td>
<td>Azole*</td>
<td>Resolved over 6 w</td>
</tr>
<tr>
<td>[PR]</td>
<td>8/M</td>
<td>Leukemia</td>
<td>Metacarpal</td>
<td>Amphotericin B</td>
<td>Died during treatment of Candida albicans sepsis</td>
</tr>
<tr>
<td>[1]</td>
<td>10/M</td>
<td>None</td>
<td>Femur</td>
<td>Surgical debridement</td>
<td>NA</td>
</tr>
<tr>
<td>[2]</td>
<td>3 mo/M</td>
<td>Neonate</td>
<td>Maxilla</td>
<td>Surgical debridement</td>
<td>Resolved over 1 mo</td>
</tr>
<tr>
<td>[3]</td>
<td>3 w/M</td>
<td>Premature neonate</td>
<td>Multiple long bones</td>
<td>Flucytosine, amphotericin B</td>
<td>Resolved over 1 mo</td>
</tr>
<tr>
<td>[4]</td>
<td>2 w/M</td>
<td>Premature neonate</td>
<td>Multiple long bones</td>
<td>Flucytosine, amphotericin B</td>
<td>Resolved over 1 mo</td>
</tr>
<tr>
<td>[5]</td>
<td>50/M</td>
<td>None</td>
<td>Multiple vertebra</td>
<td>Surgical debridement, flucytosine, amphotericin B</td>
<td>Resolved over 1 mo</td>
</tr>
<tr>
<td>[6]</td>
<td>63/F</td>
<td>None</td>
<td>Multiple vertebra</td>
<td>Surgical debridement, flucytosine, azole, amphotericin B</td>
<td>Died during treatment of Staphylococcus aureus sepsis</td>
</tr>
<tr>
<td>[7]</td>
<td>40/F</td>
<td>Leukemia, BMT</td>
<td>Single vertebra</td>
<td>Amphotericin B</td>
<td>Resolved over 3 mo</td>
</tr>
<tr>
<td>[8]</td>
<td>3 w/M</td>
<td>Premature neonate</td>
<td>Multiple long bones</td>
<td>Surgical debridement, azole, amphotericin B</td>
<td>Resolved over 1 mo</td>
</tr>
<tr>
<td>[9]</td>
<td>42/M</td>
<td>Leukemia, BMT</td>
<td>Multiple vertebra</td>
<td>Surgical debridement, flucytosine, amphotericin B</td>
<td>Died during treatment of C. tropicalis sepsis</td>
</tr>
</tbody>
</table>

NOTE. BMT = bone marrow transplantation; NA = not available; PR = present report.

* An azole agent, either miconazole or ketoconazole.