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Successful Use of Posaconazole for Treatment of Blastomycosis

A 48-year-old male construction worker developed left hip pain of 6 months duration. Magnetic resonance imaging showed a destructive lesion in the left ischium with overlying soft tissue swelling. A chest computed tomography (CT) scan revealed a 2-cm spiculated mass at the base of the left lung. The patient was told he had metastatic lung cancer and was referred to an orthopedic surgeon for a bone biopsy. Tissue histopathology revealed granulomas and broad-based budding yeast on Gomori-methenamine silver (GMS) stain. Operative fungal cultures grew *Blastomyces dermatitidis*. (The specimens were incubated at 30°C on Sabouraud dextrose agar with brain heart infusion, brain heart infusion agar with 10% sheep blood plus 4% chloramphenicol plus 5% gentamicin, and Mycosel agar [BD, Franklin Lakes, NJ, USA]. DNA probe confirmation was performed at the state reference laboratory using the AccuProbe *Blastomyces dermatitidis* culture identification test [Gen-Probe, San Diego, CA].) The patient denied fever, cough, or weight loss. He had no cutaneous, genitourinary, or neurologic symptoms or signs. HIV antibody testing was negative. The patient began itraconazole therapy (itraconazole suspension), but vomiting and diarrhea necessitated a change to itraconazole capsules (200 mg every 12 h [q12h] with food). After 2 months, the patient lost his health insurance and could not afford itraconazole. Posaconazole (posaconazole suspension), obtained through a patient assistance program, was prescribed (400 mg q12h with food). He improved clinically and radiographically with resolution of lung and bone abnormalities. The patient was treated for 12 months (10 months with posaconazole) with no evidence of infection relapse 2 years after completing therapy.

A 42-year-old woman developed progressive neck pain and swelling over 3 months. A neck CT scan revealed a large heterogeneous mass with extension to the prevertebral space and destruction of C2 through C4. A pleura-based mass was noted in the right lung with destruction of T4 and the adjacent rib. She was presumed to have metastatic cancer and referred for tissue biopsy. Histopathology revealed necrotizing granulomas and broad-based budding yeast on GMS stain. The operative fungal culture grew *B. dermatitidis* (methodologies for culture and identification as for the patient discussed above). After an initial 6-week course of liposomal amphotericin B (5 mg/kg of body weight/day), her treatment was changed to itraconazole suspension (200 mg q12h). Soon after starting itraconazole, she was diagnosed with a duodenal ulcer, requiring a course of treatment with lansoprazole. Itraconazole was changed to posaconazole (200 mg q6h with food). She completed 9 months of treatment with posaconazole with clinical improvement. Radiographic follow-up demonstrated resolution of the neck abscess and healing of the vertebral bodies. She remains symptom free 2 years after completing posaconazole.

Blastomycosis occurs more often in persons living in regions of the midwestern, southeastern, and south central United States where blastomycosis is endemic. Itraconazole is standard treatment for mild to moderate blastomycosis, and amphotericin B, preferably a lipid formulation, is standard treatment for severe infection (1). Alternative therapy must sometimes be considered for patients who develop intolerance or toxicity to standard treatment. Posaconazole, a broad-spectrum triazole antifungal agent, is approved primarily for prevention of invasive fungal infections in high-risk patients (2). *In vitro* and animal model data demonstrate activity of posaconazole against *B. dermatitidis*, but there are no published human data (3). This is the first published report of successful treatment of two patients with blastomycosis using posaconazole. Posaconazole may be an alternative treatment option for blastomycosis, but clinical studies should be pursued.

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