New *Cryptococcus* Emerges in Pacific Northwest

BY ROXANNA GUILFORD-BLAKE

FROM THE INTERNATIONAL CONFERENCE ON EMERGING INFECTIOUS DISEASES

ATLANTA — *Cryptococcus gattii*, a fungal pathogen previously found only in tropical and subtropical areas, is emerging as a serious infection in the Pacific Northwestern United States, according to a report from the Centers for Disease Control and Prevention.

It has infected at least 60 people and 52 animals in Washington, Oregon, Idaho, and California, according to Julie R. Harris, Ph.D., a CDC epidemiologist. This is "one of the most interesting emerging infectious diseases in the United States today," she said.

In September 2009, the CDC and various organizations in the affected states began passive surveillance for human and veterinary cases in the Pacific Northwest to understand the extent of the pathogen's spread and its epidemiology.

Twenty cases were identified in 2009, and she expects that even more cases will be identified this year.

Of the 39 patients on which researchers have data, 89% were hospitalized; 33% died of or with the *C. gattii* infection, she said. The mean age of infected patients is 52 years (range, 15-95 years); *C. gattii* appears to affect men and women equally. It's rarely a pediatric disease. Moreover, it appears to infect both immunocompetent and immunocompromised patients, most of whom were not infected with HIV.

The most common symptoms are cough, shortness of breath, headache, nausea and vomiting, fever, and weight loss. The patients developed pneumonia (57%), meningitis (44%), encephalitis (21%), and cryptococcomas in the lung (34%) and the brain (25%).

Emilio DeBess, D.M.V., of the Oregon Department of Human Services, noted that *C. gattii* spores appear to live in association with certain trees and the soil around those trees. Humans can become infected by inhalation of the airborne fungi. "As far as we know, there is no human-to-human or animal-to-human transmission," he said.

Before 1999, reports of infection were generally limited to tropical and subtropical areas and were most prevalent in Australia. In 1999, it was identified in Vancouver Island, British Columbia and then jumped to the mainland in 2004, and spread to the U.S. Pacific Northwest. Most cases are in Washington and Oregon, but reports of infection also have been identified in Idaho and California, Dr. DeBess said.

One explanation for the recent transmissions is that the spores are carried by trucks on the I-5 corridor, which stretches from British Columbia to San Diego. "There are a lot of theories out there. That's the one we are working with at this point," he said. "Marion County [Oregon] along the I-5 corridor is the Petri dish of *C. gattii*."

Then again, Dr. DeBess acknowledged that "it's hard to say" whether *C. gattii* is truly spreading or if more cases are being identified as a result of more intense surveillance.

C. gattii may be underdiagnosed and, as a result, the mortality rate may be inflated, he added. He and Dr. Harris noted the U.S. mortality rate is higher than that reported in British Columbia. He hopes to improve surveillance and promote awareness among physicians and veterinarians.

One of the clinical challenges, Dr. Harris noted, is that most labs cannot distinguish between *Cryptococcus neoformans* and *C. gattii*.

"We want all physicians to be aware that this is a new possible etiology of cryptococcal infections in the United States, and if infected with *C. gattii*, their patients might require prolonged therapy with antifungal drugs, or special procedures and follow-up," she said in an interview.

Because *C. neoformans* is so much more common than *C. gattii*, at this point she is not suggesting submission and speciation of every *Cryptococcus* isolate. "However, for patients with suspected *C. gattii* infection, we encourage clinicians to report the cases to their states and submit isolates as requested for further speciation," she said.

Dr. DeBess and Dr. Harris reported that they had no conflicts of interest. ■