

An Overview on *Cryptococcus gattii*

Daniel W*

Department of Dermatology, Yale University School of Medicine, New Haven, USA

Commentary

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***For Correspondence:**

Daniel W, Department of Dermatology, Yale University School of Medicine, New Haven, USA

E-mail: Daniel12@iel.edu

ABOUT THE STUDY

Cryptococcus gattii, originally *Cryptococcus neoformans* var. *gattii*, is encapsulated yeast that thrives in tropical and subtropical environments. *Filobasidiella bacillispora*, a filamentous fungus belonging to the Tremellomycetes class, is its teleomorph.

Human disorders caused by *Cryptococcus gattii* include pulmonary cryptococcosis (lung infection), basal meningitis, and cerebral cryptococcomas. Skin, soft tissue, lymph node, bone, and joint infections are occasionally linked to the fungus. It's been spotted in British Columbia, Canada, and the Pacific Northwest in recent years. Global warming may have had a role in its establishment in British Columbia, according to some. Tsunamis, such as the 1964 Alaska earthquake and tsunami, have also been postulated as a possible cause of the fungus's arrival in North America and subsequent spread.

From 1999 to early 2008, 216 persons in British Columbia were infected with *C. gattii*, with eight of them dying as a result of the infection. Dogs, koalas, and dolphins are among the creatures infected by the fungus. The fungus initially emerged in the United States in 2007 in Whatcom County, Washington, and by April 2010, it had moved to Oregon. The most recently found strain, VGIIc, is exceptionally dangerous, having killed 19 of the 218 people who have been exposed to it.

Transmission

Inhaling yeasts or spores causes the infection. The fungus cannot be passed from one human to another or from one animal to another. Cryptococcal illness does not spread from person to person.

Symptoms

The majority of persons who come into contact with the fungus do not get sick. Symptoms emerge from weeks to months after exposure in patients who become sick. Cryptococcal illness manifests itself in a variety of ways like prolonged cough (lasting weeks or months).

They are sputum production, sharp chest pain and shortness of breath, sinusitis (cottony drainage, soreness, and pressure), severe headache (meningitis, encephalitis, meningoencephalitis), stiff neck (prolonged and severe nuchal rigidity) and muscle soreness (mild to severe, local or diffuse), photophobia (excessive sensitivity to light). Blurred or double vision, eye irritation (soreness, redness) and focal neurological deficit and confusion (abnormal behavior changes, inappropriate mood swings), skin lesions (rashes, scaling, plaques, papules, nodules, blisters, subcutaneous tumors or ulcers).

Diagnosis

Sputum, bronchoalveolar lavage, lung biopsy, CSF fluid, or brain biopsy specimens can be cultured on selective agar to distinguish between the five *C. gattii* species complex members and the two *C. neoformans* species complex members. *Cryptococcus* specimens that do not culture can be speciated using molecular methods. Cryptococcal antigen testing in serum or cerebrospinal fluid is an effective preliminary test for cryptococcal infection with excellent clinical sensitivity. It doesn't differentiate between various *Cryptococcus* species.

Treatment

The antifungal medication amphotericin B, in either its traditional or lipid formulation is administered intravenously for 6-8 weeks or longer as medical treatment. Flucytosine, given orally or intravenously, enhances response rates. Fluconazole is then taken orally for six months or longer.

Antifungals alone are frequently insufficient to treat *C. gattii* infections, necessitating lobectomy or brain surgery to resect diseased lung or brain tissue. In the treatment of central nervous system infection, ventricular shunts and Ommaya reservoirs are occasionally used.

People with *C. gattii* infection must take antifungal medicine prescribed by a doctor for at least 6 months; the kind of therapy varies on the severity of the illness and the body areas affected. Fluconazole is frequently used for persons who have asymptomatic infections or mild-to-moderate lung infections. Amphotericin B in combination with flucytosine is used to treat severe lung infections and infections of the central nervous system (brain and spinal cord).