

Blastomycosis Mortality Rates, United States, 1990–2010

[Announcer] This program is presented by the Centers for Disease Control and Prevention.

[Sarah Gregory] Blastomycosis is a potentially fatal fungal infection endemic to parts of North America. National multiple-cause-of-death data and census population estimates for 1990 to 2010 to calculate age-adjusted mortality rates and rate ratios were used. Trends were modeled over time using Poisson regression. Death occurred more often among older people, men, Native Americans, and blacks, in notably younger people of Asian origin, and in the South and Midwest. In regions where blastomycosis is endemic, the diagnosis should be considered in patients with pulmonary disease. It is recommended that it be a reportable disease.

Diana Khuu is an author on the article, “Blastomycosis Mortality Rates, United States, 1990 to 2010.” She is with us today to talk about these important finding.

Diana, what is important for people to know about blastomycosis mortality rates and blastomycosis in particular?

[Diana Khuu] Blastomycosis is a fungal disease caused by *blastomyces dermatitidis*. Anyone can get blastomycosis, even people who are otherwise healthy. However, people who have underlying medical conditions, such as diabetes, may be at higher risk for the infection and for severe disease.

In the United States, this fungus occurs in the states bordering the Mississippi and Ohio Rivers, the Great Lakes, and southern Canada. It's usually found in moist, enriched, soil near wooded areas. The spores become airborne after areas contaminated with the fungus has been disrupted, and most infections occur through inhaling these spores.

The most common symptoms affect the lungs, but the disease can affect other parts of the body, such as the skin, bones, or the central nervous system. The disease can be severe in anyone, but people with weakened immune systems are more likely to have serious consequences.

The available treatments for blastomycosis are effective, especially when they're administered early. However, misdiagnosis and delayed diagnosis is common because the symptoms resemble those of other diseases, such as pneumonia, the flu, TB, other fungal infections, and some cancers. Perhaps in part because of this, case-fatality rates of 4 to 22 percent have been observed.

After looking at blastomycosis deaths from 1990 to 2010 death certificate data, we found that blastomycosis deaths were more likely in older people, men, and Native Americans, or blacks. An interesting finding is that even though people of Asian descent are at lower risk of dying from blastomycosis than whites, they died at a much younger age.

The blastomycosis mortality rates were highest in the Midwestern and Southern regions, and we saw that the mortality rate in the Midwestern region has been increasing over the last two decades.

So blastomycosis continues to be a noteworthy cause of preventable death in the United States. For people who are not getting better after taking antibiotics or antivirals and were previously

exposed to areas where the fungus could be found, it might be important to ask your doctor to test for blastomycosis.

[Sarah Gregory] Why did you decide to do this study?

[Diana Khuu] We decided to do this study because, even though we know quite a bit about the biology and risk factors of infection by *Blastomyces dermatitidis*, the public health burden of blastomycosis deaths in the United States was unknown.

Some reviews of blastomycosis outbreaks indicated a higher distribution of infection among older people, men, black, Asian, and Native American racial/ethnic groups, and those who have outdoor occupations.

We wanted to look at these risk factors among blastomycosis deaths and see if the risk factors extended to mortality rates. We did this by examining national death certificate data to evaluate associations with demographic and geographic factors and also to look at their time trends.

The clearer resulting identification of risk factors from national data may raise provider and community awareness of blastomycosis to make blastomycosis a diagnostic consideration in patients with lung disease. To improve surveillance and control, these results may also support adding it to the list of reportable diseases in regions where the fungus is widespread.

[Sarah Gregory] I'm Sarah Gregory for *Emerging Infectious Diseases*. You can read the entire November 2014 article, "Blastomycosis Mortality Rates, United States, 1990 to 2010," online at cdc.gov/eid.

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