

Blastomycosis in Dogs

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Blastomycosis can be rapidly fatal if not suspected and diagnosed early. In addition to histopathology, antigen detection can aid in early diagnosis. A fungal polysaccharide antigen is shed into the blood and urine, yielding a positive result in over 90% of cases. Itraconazole is the treatment of choice, yet about half of the cases are fatal or recur when treatment is stopped. Causes for failure include severe disease at the time the diagnosis is made, inadequate itraconazole blood levels, and persistent infection when treatment is discontinued. Amphotericin B alone or combined with itraconazole for the first week may improve outcome in severe cases, and itraconazole treatment for four to six months, and until the antigen test in the urine is negative may reduce the relapse rate. Itraconazole blood level monitoring may improve outcome by assuring adequate dosing and adherence. Posaconazole and voriconazole also are potential treatments for blastomycosis, but are more expensive and unlikely to be more effective than itraconazole.

Epidemiology

While blastomycosis may occur in a wide variety of animals, most diagnosed cases are in dogs. Endemic areas for blastomycosis include the Mississippi, Ohio, and Missouri river valleys, the Eastern Seaboard, Southern Canada, and areas adjacent to the Great Lakes.



Figure 1. Endemic areas

The states with areas of highest endemicity are Wisconsin, Minnesota, Missouri, Illinois, Michigan, Kentucky, West Virginia, Arkansas, Tennessee, North Carolina, South Carolina, Louisiana, and Mississippi. Other endemic states include Indiana, Iowa, Ohio, Virginia, Georgia, and Alabama. However, cases may occur outside the endemic area [1].

The annual incidence was 1420 cases per 100,000 dogs in a highly-endemic area [2]. Proximity to waterways and exposure to excavation were significant risk factors but age, sex, hunting, swimming and exposure to beavers were not. While most cases occur in dogs with extensive outdoor exposure, cases also may be seen in indoor pets [1].

Cases occur most often in the fall [3,4], but may occur any time of the year.

Blastomycosis occurs mainly in young, large-breed dogs [3], with the highest rates in Coonhounds, Pointers, and Weimaraners [4]. Doberman Pinschers and Retrievers also may be at increased risk for blastomycosis, but any breed is susceptible if exposed to the organism. In some reports, the prevalence was higher in males than females [4,5]. Higher rates in sexually intact male dogs was thought to be caused by roaming behavior or selective use in hunting [4].

Clinical findings

Blastomycosis is acquired by inhaling fungal spores, and causes a respiratory and/or disseminated infection. If the inoculum is small and the animal is not immunocompromised, the infection may be limited to the respiratory tract and may have few or no clinical signs. The most common clinical findings are nonspecific and include loss of appetite, weight loss, and fever, Table 1.

Table 1. Clinical findings

Fever	62%
Respiratory	49%
Skin lesions	49%
Depression	48%
Anorexia	44%
Ocular	43%
Weight-loss	37%
CNS	6%

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