



CLINICAL DIAGNOSIS

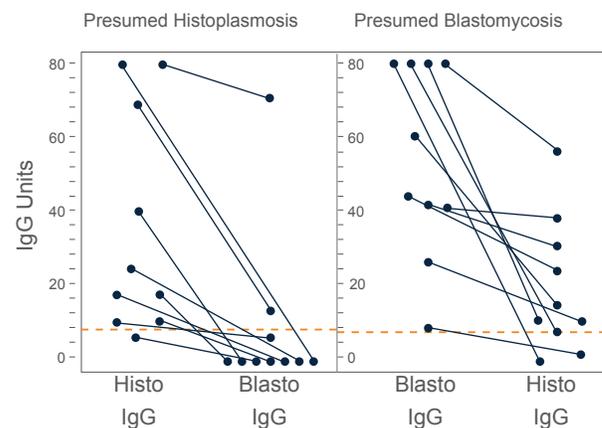
What Is the Role of Antibody Testing for Diagnosing Histoplasmosis and Blastomycosis?

Diagnosis. Antigen detection is the most common method for diagnosing histoplasmosis and blastomycosis in veterinary medicine. However, results may be falsely negative in 5-10% of cases. While testing both urine and serum for antigen improves sensitivity, both may be negative in some cases. Antibody detection is a common method for diagnosing histoplasmosis in humans [1]. Assays are available for detecting IgG antibodies to *Histoplasma* by enzyme immunoassay (EIA) and immunodiffusion (FID) in dogs and cats[2] but only by FID for *Blastomyces* in cats. However, the sensitivity of FID is poor in dogs (65%) and adds nothing to EIA [2].

Table	Antibody positive N=146	Antibody negative N=372
Antigen positive N=138	100 (19.3%)	38 (7.3%)
Antigen negative N= 380	46 (8.9%)	334 (64.5%)

Results. *Histoplasma* and *Blastomyces* antigen and IgG antibody test results in 518 dogs performed at MiraVista between 2017 and February 2020 (Table) were reviewed. Antigen or antibody was detected in 184/518 (35.5%) of all dogs tested. Of those with ≥ 1 positive result, 46/184 (25%) were antibody positive, but antigen negative. These represent potentially positive cases that would have been missed if antibody testing was not performed.

Figure. Comparison of *Histoplasma* and *Blastomyces* IgG antibody levels measured in the same dogs.



Conclusion.

1. The antigen detected in histoplasmosis and blastomycosis is completely cross reactive. Testing for both is unnecessary.
2. The antibody response is relatively specific. Test for both because there is overlap of the clinical findings and geographic distribution.
3. Antibody testing for both provided the most sensitive method for diagnosing cases with negative antigen results.
4. When both *Histoplasma* and *Blastomyces* IgG antibodies are detected, the correct diagnosis can be inferred by the higher IgG concentration.
5. Further studies are needed with additional clinical information including results of other diagnostic tests such as, pathology and molecular methods.

HEADQUARTERS

4705 Decatur Blvd. | Indianapolis, Indiana 46241, USA

888-841-8387



CLINICAL DIAGNOSIS

We Recommend.

1. Send both urine and serum.
2. Test urine for antigen based on what's more common in your area.
3. If the urine antigen test is negative and both mycoses are common in your area test the serum for *Histoplasma* antigen, *Histoplasma* IgG antibodies, *Histoplasma* FID antibodies, and *Blastomyces* IgG antibodies to avoid missing the diagnosis in about 15% of cases. In cats, test the serum for *Blastomyces* FID antibodies as a test for feline *Blastomyces* IgG antibodies is unavailable.

REFERENCE LIST:

1. Richer SM, Smedema ML, Durkin MM, et al. *Improved Diagnosis of Acute Pulmonary Histoplasmosis by Combining Antigen and Antibody Detection*. Clin Infect Dis **2016 Apr 1**; 62(7):896-902.
2. Mourning AC, Patterson EE, Kirsch EJ, et al. *Evaluation of an enzyme immunoassay for antibodies to a recombinant Blastomyces adhesin-1 repeat antigen as an aid in the diagnosis of blastomycosis in dogs*. J Am Vet Med Assoc **2015 Nov 15**; 247(10):1133-8.

HEADQUARTERS

4705 Decatur Blvd. | Indianapolis, Indiana 46241, USA

888-841-8387