



CLINICAL TREATMENT & MONITORING

Coccidioidomycosis (Valley Fever): When to Stop Antifungal Treatment.

At a Glance – Crucial Information

1. The most sensitive biomarkers for diagnosing coccidioidomycosis (Valley Fever, VF) is antibody testing — a quantitative canine IgG antibody EIA combined with antibody immunodiffusion (ID) — with combined sensitivity exceeding 98% in dogs
2. *Coccidioides* antigen testing is less sensitive at diagnosis than antibody testing, but when positive, antigen testing should be negative before stopping treatment
3. Antibody ID is the single best test for treatment monitoring. IgM (TP) should be negative, and IgG (CF) should be negative, or low positive, before stopping treatment (Table 1).
4. Treatment monitoring is multimodal and should combine clinical signs, physical exam findings, imaging studies, and antigen/antibody testing — no single tool should be used in isolation.

Background:

Valley Fever is caused by *Coccidioides immitis* and *C. posadasii* and is endemic to the semiarid southwestern U.S., though its geographic range appears to be expanding with warmer, drier conditions. Infection follows inhalation of arthroconidia aerosolized from disturbed soil. Dogs are diagnosed with VF significantly more often than cats. Pulmonary disease (lung and associated lymph nodes) is the most common presentation in dogs, while disseminated disease predominates in cats.

Diagnostic Testing

Diagnosis is supported by finding organisms (spherules and endospores) in cytology or histopathology and by serologic testing. The most sensitive diagnostic approach combines two antibody tests — a quantitative canine IgG antibody enzyme immunoassay (EIA) and antibody immunodiffusion (ID), which detects tube precipitin (TP/IgM) and complement fixation (CF/IgG) antibodies. Only a minority of dogs (roughly 20-45%) are TP (IgM) positive at diagnosis, so a negative IgM result alone does not rule out infection; the combined use of IgG EIA and ID improves overall sensitivity to greater than 98% in dogs.

A galactomannan antigen test is also available but has lower diagnostic sensitivity than antibody testing at the time of diagnosis, likely because *Coccidioides* sheds little antigen compared with other dimorphic fungi. Antigen testing is most useful in seronegative cases and becomes one of the tools for monitoring once an animal has a positive result.

An important interpretive caveat applies to antibody titers; CF (IgG) titers up to 1:16 have been reported in clinically healthy dogs residing in endemic regions, reflecting prior exposure rather than active disease. Antibody results — whether by EIA or ID — should therefore always be interpreted alongside clinical signs, physical exam findings, and imaging, and followed as a trend over time rather than used as a stand-alone diagnostic or monitoring criterion.

Treatment Duration and Monitoring

Most dogs with pulmonary VF often achieve clinical remission within 6-9 months of antifungal therapy (typically fluconazole) and can have treatment discontinued at that point if monitoring criteria are met (Table 1). Disseminated disease — more common in cats and in dogs with bone/joint, CNS, or other extrapulmonary involvement — generally requires longer treatment (12 months or more); and CNS disease often warrants indefinite azole therapy. Relapse after treatment discontinuation, has been reported in roughly 15% of dogs with pulmonary VF and roughly 35% of cats with disseminated VF, underscoring the value of a multimodal monitoring approach (Table 1) rather than reliance on a fixed treatment duration alone.

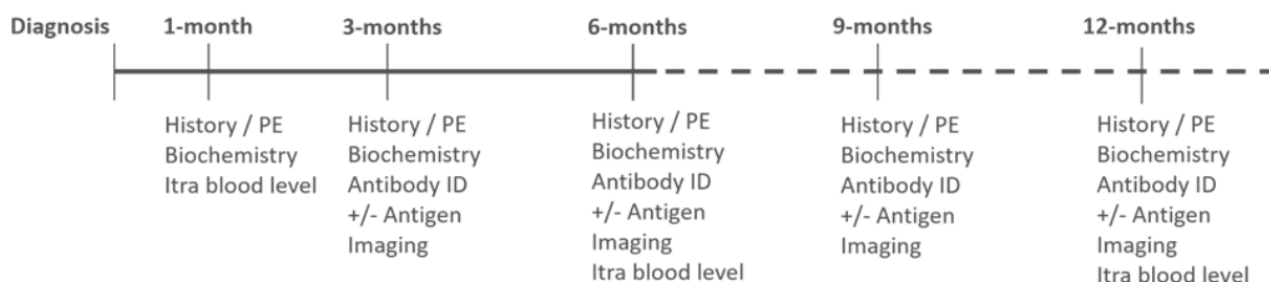


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Table 1. Recommended criteria for determining when to discontinue antifungal treatment (all applicable criteria should be met) in dogs and cats with coccidioidomycosis.

Monitoring Tool	Criteria	Notes
Treatment Duration	Minimum of 6 months (pulmonary disease) or 12 months (disseminated disease)	- Required duration is frequently longer, particularly for disseminated disease. - CNS involvement often warrants indefinite fluconazole therapy.
History	Past resolution of clinical signs	Mild exercise intolerance may persist, most notable in working or performance dogs.
Physical Examination	Past resolution of physical exam abnormalities	Differentiate active ocular disease from permanent, inactive change.
Imaging Studies	Past resolution of imaging abnormalities	- Enlarged tracheobronchial lymph nodes decrease most significantly in the first 3 months of treatment. - Radiographic bone lesions should improve but may never fully normalize.
Coccidioides Antigen (if positive at diagnosis)	Negative	- Serum is the sample type used for the quantitative antigen EIA. - Submit at diagnosis and every 3 months during treatment.
Coccidioides Antibody ID	Antibody ID: CF (IgG) titer $\leq$ 1:4, OR $\leq$ 1:8 after $\geq$ 1 year of treatment	Submit at diagnosis and every 3 months during treatment.

Figure 1. Example monitoring schedule for dog or cat with Valley Fever.



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