

COCCIDIOSIS, AVIAN



This disease
is known to
occur in
Afghanistan.



1. Definition

Avian coccidiosis is caused by a number of related protozoan parasites in the genus *Eimeria* that invade the intestinal epithelium and cause ulceration and hemorrhage of the intestinal tract.

2. Etiology

There are seven species of *Eimeria* that cause disease in chickens - they may occur separately or together. The two that cause the most severe disease are *Eimeria necatrix* which affects the small intestine, and *Eimeria tenella* which targets the ceca.

3. Transmission

The disease is contagious. Oocysts are passed in the feces of infected birds and after two days on the ground have sporulated and then are infectious when ingested by other birds.

4. Species affected

The chicken is the only natural host. Younger birds tend to have more severe disease than older ones, and disease is often most severe in the 3-6 week age range. Birds develop immunity but there is no cross-species immunity, so infection with one *Eimeria* species does not confer protection against another.

5. Clinical signs

Disease depends on the number of ingested oocysts and the pre-existing immunity in the flock. Ingestion of just a few oocysts will result in subclinical or mild disease and subsequent immunity. However, if many oocysts are present and there is no previous exposure in the flock, disease can be florid. Within 2 to 3 days of ingestion, there is bloody diarrhea and birds are markedly depressed and dehydrated. Morbidity is high. Mortality is variable. Birds surviving infection may be predisposed to other infections such as *Salmonella* or *Clostridium*.

6. Pathologic findings

Gross changes are quite specific. Depending on the species of infecting *Eimeria*, certain segments of intestine are ulcerative and hemorrhagic. Mucosa may be markedly thickened, with necrotic cores in the lumen. *Eimeria necratix* affects the small intestine whereas *Eimeria tenella* damage is focused on the ceca.

7. Diagnosis

Diagnosis is straightforward and often based on clinical signs and pathologic features. A smear of intestinal contents will reveal protozoan schizonts.

8. Treatment

There are numerous anticoccidial drugs available, but many suffer from problems of resistance developing within the parasites. Because the anticoccidial drugs all work at different parts of the life cycle, alternating drugs is recommended to minimize development of resistance.

9. Prevention and Control

Prevention of coccidiosis is difficult as the protozoa are found worldwide and in all types of poultry husbandry. The goal is to use anticoccidials and hygiene to minimize damage.