

# Immune-Mediated Hemolytic Anemia & Thrombocytopenia

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## What is it?

Immune-mediated hemolytic anemia (IMHA) and immune-mediated thrombocytopenia (ITP) are diseases in which the body's own immune system attacks and destroys its red blood cells (IMHA) or platelets (ITP).

Both IMHA and ITP can be classified as either "primary" or "secondary". In primary disease, an underlying cause of the immune destruction cannot be identified. In comparison, secondary IMHA or ITP occurs when the immune system inadvertently destroys its own red blood cells or platelets secondary to an immune attack directed against an underlying condition such as a cancer, infection, or exposure to certain drugs or toxins. It is critical to address the underlying cause while simultaneously treating the anemia or low platelet count.

IMHA and ITP frequently occur in dogs. Primary IMHA or ITP is extremely rare in cats. Most affected dogs are middle-aged females. No breed or sex predilection is seen in cats.

Chronic manifestations of pancreatitis include diabetes mellitus (30-40% of dogs with diabetes have pancreatitis) or loss of digestive enzyme production (exocrine pancreatic insufficiency). Other potential complications include pancreatic pseudocysts and abscesses.

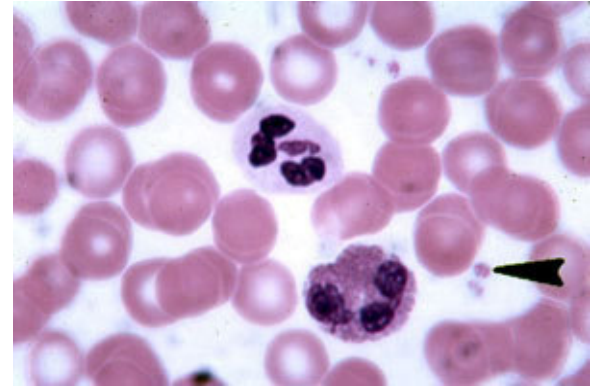
## Clinical Signs

Signs that develop are caused by massive, often sudden, depletion in red blood cells or platelets. One of the major functions of red blood cells is to carry oxygen from the lungs to all other tissues in the body. When there are inadequate numbers of red blood cells (anemia), the body becomes starved for oxygen. You may notice depression, listlessness, panting, decreased appetite, weakness, or reluctance to exercise.

The major function of platelets is to help form blood clots to stop bleeding. Destruction of large numbers of platelets can result in pinpoint bleeding in the skin or gums, or bleeding from the nose. Less commonly, blood can be seen in the stool or urine. Severe anemia can result from excessive bleeding. In approximately 50% of cases, IMHA and ITP occur simultaneously.

## Diagnosis

The diagnosis of IMHA or ITP requires evaluation of blood smears, complete blood count (CBC), chemistry panel, and urinalysis. Specialized blood test such as a Coombs' test and titers for certain tick borne diseases are often necessary. Since the bone marrow is the site of red blood cell and platelet production, a bone marrow aspirate or biopsy may be required in patients where the working ability of the bone marrow is in question. Diagnostic imaging studies such as radiographs (x-rays) and ultrasound are often necessary to rule out an underlying disease (i.e., cancer) that may have precipitated the problem.



# Immune-Mediated Hemolytic Anemia & Thrombocytopenia

## Treatment

Treatment of IMHA and ITP relies on suppressing the immune system's attack against the red blood cells and platelets, respectively. The most commonly prescribed medication is a steroid called prednisone. Side effects of this drug include an increased appetite, increased thirst and urination, and increased anxiety exhibited as pacing, panting and restlessness. Therapy must be continued until there is laboratory evidence that the anemia has resolved and destruction of red blood cells or platelets has ceased. This will require frequent recheck examinations and blood tests to monitor the success of the therapy.

If the immune system has been adequately suppressed, the dosage of prednisone can be slowly tapered, often over the course of several months. The goal is to find the lowest dose of medication that manages the disease; hopefully medications can be discontinued altogether. Frequent rechecks to monitor the response to therapy are extremely important. If adequate suppression of the immune system does not occur, additional medications may be prescribed.

In some dogs and cats, the destruction of red blood cells or platelets is so severe that a life-threatening anemia can occur. Blood transfusions may be necessary to stabilize these pets until the bone marrow can produce enough cells to keep up with the demand, and until the medications being given to suppress the immune system have had time to work.

## Prognosis

The prognosis for both diseases is highly variable and depends on the cause of the disease. Complications related to the disease or drug therapy may further alter prognosis. In some patients, life-long drug therapy is required to control the disease. Some patients with severe disease do not respond to therapy. Relapses are not unusual and may occur months to years after the initial episode. Vaccinations, as well as certain medications, may lead to recurrence.



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