

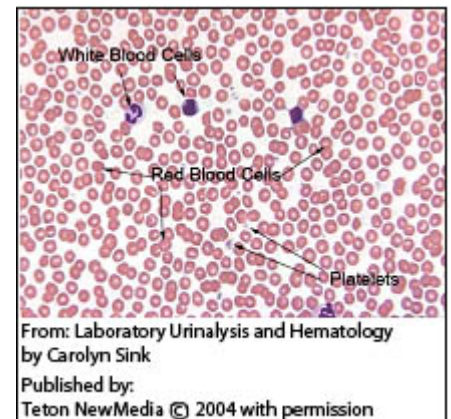
Autoimmune Hemolytic Anemia in Cats

What is anemia?

Anemia is not a specific disease but rather it is a symptom of some other disease process or condition. Anemia is a medical term referring to a reduced number of circulating red blood cells (RBC's), hemoglobin (Hb), or both.

Hemoglobin delivers oxygen to the cells and tissues of the body, and a patient who is anemic will suffer from symptoms related to a lack of oxygen.

Normally, red blood cells are produced in the bone marrow and then released into the circulation. As the red blood cells age or become damaged, they are removed from the circulation and their contents will be recycled to form new red blood cells. The number of circulating red blood cells may become reduced if there is a decrease in production of them in the bone marrow, or if there is an increased loss of them from the circulation.



What is Autoimmune Hemolytic Anemia?

"Autoimmune hemolytic anemia (AIHA) is an immune system disease in which the body attacks and destroys its own red blood cells."

Autoimmune means an immune reaction directed against the self, while hemolysis comes from the Greek words 'hemo' meaning blood and 'lysis' meaning to break open. Autoimmune hemolytic anemia (AIHA) is an immune system disease in which the body attacks and destroys its own red blood cells. In cats with AIHA, red blood cells are still being manufactured in the bone marrow, but once released into the circulation, they have a shorter-than-normal life span.

This disease may also be called Immune-Mediated Hemolytic Anemia or IMHA.

What causes Autoimmune Hemolytic Anemia?

AIHA may be *primary* or idiopathic, or it may be *secondary*.

With primary AIHA, the cat's immune system is not working properly and it incorrectly makes antibodies that target its own red blood cells. Primary AIHA is uncommon in cats.

With secondary AIHA, the surface of the red blood cells becomes altered by an underlying disease process or a toxin. The cat's immune system then recognizes the altered red blood cells as 'foreign' invaders that must be destroyed. Secondary AIHA may be triggered by cancer, infections such as Feline Leukemia, Feline Immunodeficiency Virus (FIV), blood parasites such as *Mycoplasma haemofelis*, drug reactions, chemicals, toxins, or bee stings.

Once targeted, the red blood cells are either destroyed within the blood vessels by a process called *intravascular hemolysis* or destroyed when they circulate through the liver or spleen by a process called *extravascular hemolysis*. In both situations, hemoglobin will be released from the red blood cells; the liver will attempt to break down the excess levels of hemoglobin, increasing the workload of this organ.

What are the symptoms of AIHA?

Most cats with AIHA have severe anemia, and their gums will be very pale rather than the normal pink to red color. Cats with anemia will be listless and will tire more easily; these symptoms occur because there are not enough red blood cells to carry oxygen to the tissues. To compensate for the lack of oxygen to the tissues, the heart will beat more rapidly and the patient will breathe more rapidly. The cat will often have a poor appetite, and may be anorexic. Vomiting may accompany the anorexia.

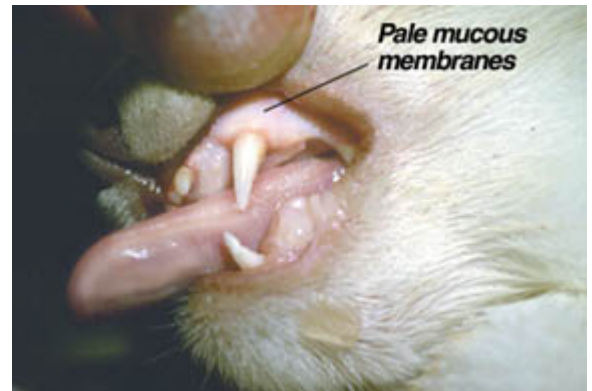
"Excessive levels of bilirubin cause the skin, gums and other mucous membranes to appear yellow or *jaundiced*."

As the disease progresses, excessive levels of bilirubin, a breakdown product of red blood cell hemolysis, build up within the body. Some of this excess bilirubin spills over into the urine, causing it to appear dark. Excessive levels of bilirubin cause the skin, gums and other mucous membranes to appear yellow or *jaundiced*.

How is AIHA diagnosed?

Anemia is diagnosed by performing a blood test called a Complete Blood Count (CBC). The CBC measures a number of different values in a sample of whole blood. To test for anemia, the **packed cell volume (PCV)** will be measured to determine the percent of red blood cells in the sample, the number of red blood cells will be counted, and the cells will be examined under a microscope to determine their size and shape. With AIHA, both the number and percent of red blood cells will be low and the size and shape of the cells will be abnormal. In many cases of AIHA, there will also be evidence of 'autoagglutination' or abnormal clumping of red blood cells.

If AIHA is suspected, your veterinarian will also recommend additional diagnostic tests to determine whether the disease is primary or secondary. Tests may include a **reticulocyte test** to detect the number of reticulocytes (immature red blood cells) that are present in the bloodstream, antibody tests such as a **Coombs test**, or serologic blood tests to detect Feline Leukemia, FIV or parasitic diseases such as *Mycoplasma haemofelis*.

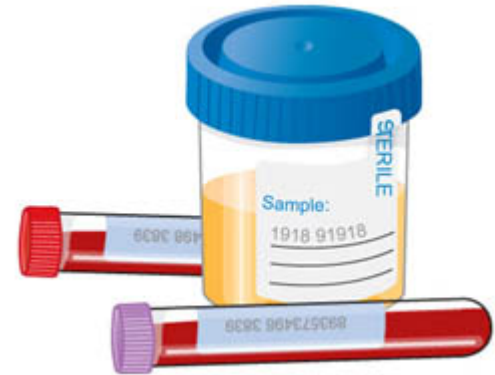


What other tests are important with this disease?

Your veterinarian will recommend additional tests to evaluate the overall health of your cat and to detect any underlying cause for secondary AIHA. Recommended tests will usually include a biochemical profile, a urinalysis,

x-rays of the chest and abdomen, and an abdominal ultrasound examination. Depending on your pet's individual results, other tests may also be recommended.

The biochemical profile will evaluate organ function and electrolyte levels, while the urinalysis will provide a baseline measure of kidney function and indicate whether there is evidence of an infection in the urinary tract. Chest x-rays help detect or exclude the presence of cancer in the lungs, while abdominal x-rays or ultrasound help detect or exclude the presence of cancer within the abdomen.



How is AIHA treated?

If your cat's anemia is so severe that it is life-threatening, a blood transfusion will be needed. Before giving a transfusion, blood samples will be taken for diagnostic testing. The main purpose of a blood transfusion is to stabilize the cat while the underlying cause of the anemia is determined and other treatments can begin to take effect.

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If the AIHA is secondary, the treatment will be directed at the underlying cause. If no underlying cause can be detected, or if the disease is determined to be primary or idiopathic AIHA, immunosuppressive therapy will be used. In some cases of idiopathic AIHA, the cat will respond rapidly to treatment with immunosuppressive doses of corticosteroids. In other cases, the patient may require a combination of immunosuppressive medications to get the condition under control.



Your veterinarian will outline a treatment plan specific for your cat's needs, based on diagnostic test results. With complex cases, your veterinarian may recommend a referral to an internal medicine specialist.

What is the prognosis for AIHA?

The prognosis for cats with AIHA is based on the specific diagnosis, as well as the patient's general condition at the time of diagnosis. Cats with secondary AIHA caused by *Mycoplasma haemofelis* may respond well to treatment with antibiotics, while cats with cancer or viral disease tend to be less responsive to treatment.

Once the patient's condition improves and the anemia resolves or stabilizes, your veterinarian will recommend tapering off the immunosuppressive medications over a period of several months to lessen any side effects associated with therapy. Since this disease may relapse as the medications are decreased or discontinued, you will need to monitor your cat closely.

*This client information sheet is based on material written by: Cheryl Yuill, DVM, MSc, CVH
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