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IMMUNE-MEDIATED HEMOLYTIC ANEMIA AND OTHER CAUSES OF HEMOLYSIS

Regenerative anemia is caused by erythrocyte loss, hemolysis, or both. The path towards the diagnosis starts with differentiation hemorrhagic anemia from hemolytic causes of anemia.

The differential diagnosis for hemolysis can be categorized as acquired non-immune hemolytic anemias, hemophagocytic disorders, and the immune-mediated hemolytic anemias. The differential diagnosis of acquired non-immune hemolytic anemias may be grouped as hemolysis due to direct toxic erythrocyte membrane damage, oxidative damage, infections, erythrocyte fragmentation, and diseases interfering with erythrocyte energy metabolism. The clinical signs of hemolytic anemia are usually dominated by the hypoxia that results from the anemia, and consist of tachycardia, tachypnea, and pale mucous membranes. Hemolysis may result in hemoglobinemia and hemoglobinuria, and, if hypoxemia is severe, tissue necrosis, especially in the liver, leading to a decrease in functional capacity and icterus. In most cases of immune-mediated hemolysis a clear inflammatory response both in tissues and in the hemogram is visible and may be complicated by the occurrence of thrombosis. Immune-mediated hemolysis is probably the most common cause of hemolysis in dogs and cats. Helpful tests to establish the diagnosis are the red cell osmotic fragility testing, the Direct Agglutination Test or Coombs' test, and the presence of spherocytosis. Idiopathic immune-mediated hemolysis is treated by immunosuppression by glucocorticoids. The routine use of other immunomodulating drugs and anticoagulant drugs is under discussion.