Anemia

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ANEMIA

- Aggregate reticulocyte count > 60,000/mcL (cats) or > 80,000/mcL (dogs)?
  - Yes
  - No

Regenerative anemia

- Do history and physical examination identify a cause of blood loss?
  - Yes
  - No

Nonregenerative anemia

- Low to low-normal total solids or albumin and globulin?
  - Yes
  - No

Blood smear evaluation

- Spherocytes or autoagglutination
- Heinz bodies or eccentrocytes
- Blood parasites
- Unremarkable RBC morphology
- Significant acanthocytes, schistocytes

DIC = disseminated intravascular coagulation; FeLV = feline leukemia virus; FIV = feline immunodeficiency virus; IMHA = immune-mediated hemolytic anemia; MCHC = mean corpuscular hemoglobin concentration; MCV = mean cell volume; NRBC = nucleated red blood cell; RBC = red blood cell; RDW = red cell distribution width

* Microangiopathic anemia occasionally presents as nonregenerative anemia
† Spherocyte-like RBC morphology may be noted in zinc toxicity; however, Heinz bodies are usually more prevalent
Nonregenerative Anemia

Is animal presenting with acute clinical signs of anemia (eg, weakness, pallor, tachypnea, tachycardia, etc)?

Yes

Preregenerative anemia

Low to low-normal total solids or albumin and globulin levels?

Yes

Acute blood loss
Rule out neoplasia, trauma, coagulopathy, thrombocytopenia, or gastrointestinal ulceration

No

Acute hemolytic disease
Rule out primary or secondary IMHA, blood parasites, Heinz body anemia, microangiopathic anemia

True nonregenerative anemia

Do history, physical examination, and diagnostic tests indicate that another disease process is occurring?

Yes

Infectious cause

- Ehrlichia
- Anaplasma
- Parvovirus
- FeLV
- FIV

No

Presence of microcytosis or hypochromasia?

Yes

Bone marrow aspirate or core biopsy

No

Presence of NRBCs with or without basophilic stippling?

Yes

Lead poisoning

No

Low to low-normal total serum iron and high to high-normal transferrin levels?

Yes

Iron deficiency anemia
Rule out chronic blood loss

No

Rule out anemia due to inflammatory disease, chronic liver disease, or folate or cobalamin deficiency

See Aids & Resources, back page, for references and suggested reading.