Nonregenerative Anemia in Cats

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In the Literature

Olson SW, Hohenhaus AE. Feline non-regenerative anemia: diagnostic and treatment recommendations. *J Feline Med Surg.* 2019;21(7):615-631.

FROM THE PAGE ...

This article reviews common causes of nonregenerative anemia in cats and provides a stepwise approach to diagnostic investigation and management. The authors divide differentials into 2 categories for pathologic mechanism. The first category is ineffective erythropoiesis involving conditions impacting bone marrow production of RBCs; this category includes nutrient deficiencies (eg, iron, vitamin B12), infectious diseases (eg, FeLV, FIV), and primary bone marrow disorders (eg, precursor-directed immune-mediated anemia). Conditions outside the bone marrow that can cause nonregenerative anemia (eg, chronic inflammatory states, lack of erythropoietin associated with later stages of chronic renal disease) are also included in this category. The second category is reduced RBC lifespan and includes conditions leading to the premature removal of RBCs from circulation (eg, following oxidative stress or injury).

Nonregenerative anemia involves insufficient numbers of identifiable aggregate reticulocytes in circulation. This is typically defined as an absolute aggregate reticulocyte count of <60,000/µL; however, gradations in regenerative response (ie, strongly, moderately, and weakly regenerative) have been reported based on the absolute reticulocyte number and reticulocyte percentage. The authors stress the importance of assessing reticulocyte counts immediately, as the cells will continue to mature following collection, thereby preventing accurate reticulocyte quantification. Because the differentials list for feline nonregenerative anemia is long, use of an algorithm can help guide diagnostic decisions to minimize unnecessary testing and maximize the chance of obtaining a diagnosis. Minimum database testing as indicated is often followed by more specific investigations (eg, infectious disease screening, assessment for systemic disease [eg, chest and/or abdominal imaging], specific nutrient analysis [eg, iron panel, cobalamin concentration]). If a causative disease is not identified noninvasively, bone marrow aspiration ± core biopsy will likely be necessary.

Treatment is specifically targeted toward the underlying condition diagnosed. This may include supportive therapies for chronic blood loss or supplementation of nutrient or erythropoietin deficiencies. Autoimmune conditions are treated similarly to peripheral hemolytic anemia, with immunosuppressive protocols usually including a glucocorticoid and occasionally requiring a secondary agent. Cats that are hemodynamically unstable should receive blood type evaluation and a packed RBC transfusion.

... TO YOUR PATIENTS

Key pearls to put into practice:

1. Due to the diversity of differentials for feline nonregenerative anemia, consideration should be given to primary bone marrow disorders as well as systemic infectious, inflammatory, and neoplastic conditions known to impact RBC production and survival.
2. A reticulocyte count should be obtained soon after blood sampling to maximize accuracy of the quantification.
3. Because treatments are often targeted toward a specific causative condition, the diagnostic investigation should be comprehensive and may require assessment of a bone marrow aspiration ± core biopsy.