

TOP 5

Causes of “ADR” in Older Cats

Glenn Allen Olah, DVM, PhD, DABVP

Albuquerque Cat Clinic

Albuquerque, New Mexico



Top 5 Causes of “ADR” in Older Cats

1. Oral disease
2. Chronic kidney disease
3. Degenerative joint disease
4. Endocrine disease
5. Malignant neoplasia

When ill, cats may exhibit nonspecific clinical signs. Often owners are tuned into their cat's nuances, so subtle behavior changes may be all that can be provided in a history. For example, the cat may be sleeping more than usual, not socializing as much, eating less, or simply hiding. We refer to these cases as “Ain't doing right,” or ADR. As certain disease conditions are more common in cats over 10 years of age, a list of ADR causes in geriatric cats is different than those found in kittens or younger cats. The conditions discussed here are not all-inclusive, and older cats frequently present with concurrent diseases. Following is the author's view of the top 5 ADR causes in his practice.

Feline patients may present with only subtle behavior changes. We refer to these cases as *Ain't doing right*—or ADR.

1

Oral disease

Oral diseases (eg, periodontal disease, root exposure, tooth resorption, stomatitis, oral masses) are not uncommon, and associated pain can affect quality of life and may contribute to anorexia and weight loss.¹ Depending on pathology and on a benefit-and-risk assessment, a dental procedure under anesthesia is not an unreasonable recommendation. Age should not automatically deter a dental procedure under anesthesia.²

2

Chronic kidney disease

Chronic kidney disease (CKD) is common in cats with an overall prevalence estimated at approximately 1.5%,^{3,4} and it is diagnosed more frequently in older cats.⁴⁻⁶ An early retrospective study showed 53% of cats ≥ 7 years of age were diagnosed with CKD,⁷ and two recent studies suggested between approximately 69%⁶ and 81%⁴ of cats ≥ 10 years of age were diagnosed with CKD. Causes are heterogeneous and rarely identified; the most common histopathologic finding is tubulointerstitial nephritis with variable degrees of fibrosis.^{8,9} Diagnosis is based on history, physical examination, and presence of renal azotemia with poorly concentrated urine (urine specific gravity ≤ 1.035).¹⁰ Once CKD is diagnosed, staging (I-IV) as outlined by the

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ADR = ain't doing right, CKD = chronic kidney disease

International Renal Interest Society (IRIS, iris-kidney.com/guidelines/staging.shtml) is based on serum creatinine measured on at least two separate occasions in a stable, hydrated cat, and further substaging is based on presence of proteinuria and/or hypertension.¹⁰ Staging and substaging provide standardized nomenclature, directing therapy toward each stage and substage, assist monitoring disease progression, and allow more informative prognostication.⁹⁻¹¹

Early CKD (I-II) cats are usually subclinical or only show mild clinical signs (ie, reduced appetite, mild weight loss, mild polydipsia/polyuria).^{9,10} Owners often overlook these subtle signs or, if observant, present the cat as an ADR case. Late CKD (III-IV) cats usually have additional clinical signs (eg, lackluster coat, lethargy, dehydration, muscle wasting with weight loss, nausea, vomiting, polyuria/polydipsia).^{9,10}

CKD is a progressive and irreversible disease. Nevertheless, disease progression is usually slow, and in one study, 81% and 37% of cats with stage-II and stage-III CKD, respectively, never reached end-stage (stage-IV CKD),¹² and many cats with CKD actually died from other causes.¹³ Treatment is intended to improve quality of life, relieve signs of uremic syndrome, manage comorbid diseases, and slow disease progression. For most cats, treatment is supportive and geared toward relief of signs. Various factors (eg, dehydration, gastritis, metabolic acidosis, azotemia, hypokalemia, hyperphosphatemia, secondary hyperparathyroidism, urinary tract infection, hypertension, proteinuria, anemia) may warrant correction or management. Dietary management is critical, particularly in cats with stage-III or IV CKD. Important dietary aspects include increased water, decreased protein, and decreased phosphorus; maintaining appetite and adequate nutritional requirements is important.¹¹ Management often requires regular checkups (ie, every 2–6 months) depending on patient status and CKD stage.

3

Degenerative joint disease

Degenerative joint disease (DJD) is a progressive disease in which the articular cartilage is slowly destroyed and the underlying bone reacts by remodeling and osteophyte formation.¹⁴ In a recent study of 100 cats ≥ 12 years, as many as 90% had radiographic evidence

of DJD with the elbow being the most commonly affected joint.¹⁵ DJD causes chronic pain that is often not recognized by owners or is attributed to normal aging. Cats affected by DJD may have nonspecific clinical signs (eg, reduced activity, anorexia, weight loss, irritability, aggression, decreased socialization, inappropriate elimination, constipation, decreased grooming). More specific signs (eg, difficulty jumping, lameness, alopecia over affected joints secondary to overgrooming because of joint pain) may be present to help confirm diagnosis.

Treatment may involve weight loss, pain medications such as opioids (eg, buprenorphine) or low-dose NSAIDs (eg, meloxicam, robenacoxib^{*16-19}), or nutraceuticals (eg, fatty acids, polysulfated glycosaminoglycan).

4

Endocrine disease

Two common endocrine diseases in cats are hyperthyroidism and diabetes mellitus (DM). A significant increase in overall prevalence has been identified for hyperthyroidism (~2%²²) and feline DM (~0.6–1.24%²³). For cats over 8–10 years of age, hyperthyroidism prevalence has been estimated to range from 4–11%.²² Hyperthyroidism results from an increased production of thyroid hormones (T_3 and T_4) by adenomatous hyperplasia of the thyroid glands or rarely by malignant carcinoma. Feline diabetes is analogous to type-II adult onset diabetes in humans and is often linked with obesity.²⁴ Insulin resistance typically contributes to feline DM through a loss of peripheral insulin receptor number or affinity, disruption of post-receptor signaling pathways, and through dysfunctional pancreatic beta cells.²⁴ Recent studies suggest that acromegaly, another endocrine disorder caused by excess growth hormone production, is underdiagnosed and is a more common cause of feline DM than once thought.^{25,26}

Hyperthyroidism and DM are catabolic states and have similar clinical presentations (ie, weight loss [weight gain in some cases of acromegaly, depending on severity], polyphagia, polyuria, polydipsia). Some cats may present with ataxia or plantigrade stance, anorexia, vomiting, and diarrhea. Owners often delay presentation as they perceive the cat to be bright, alert, and with good appetite; however, owners rarely allow weight loss to

ADR = ain't doing right, CKD = chronic kidney disease, DJD = degenerative joint disease, DM = diabetes mellitus

* Meloxicam (Metacam, bi-vetmedica.com) is not FDA approved in the United States for long-term use in cats; however, it is licensed in Canada, Australia, New Zealand, and throughout Europe for long-term use in cats. Use of long-term, low-dose meloxicam in the United States would therefore be considered off-label use. It should only be considered in cats that are clinically stable and hydrated.¹⁷⁻¹⁹ Concurrent stage I-II CKD and possibly stage III CKD do not necessarily preclude NSAID use in select cats.¹⁹ Robenacoxib, a NSAID of the coxib class, has recently been introduced on the United States and European markets for short-term treatment of acute pain in cats. Less scientific evaluation of long-term use of robenacoxib has been published to date, but preliminary data show this NSAID may eventually be a relatively safer alternative for long-term NSAID use in cats.^{20,21}

progress to the extreme. Other owners may notice increased water intake, particularly in DM cases. Regardless, clinical signs are varied, and eventually owners suspect something is wrong.

There are four commonly used treatments for hyperthyroidism, oral methimazole, thyroidectomy, low iodine dietary therapy, and I^{131} radiation therapy. Methimazole and dietary therapy are not curative, but control the condition. The other two treatments are potentially curative, and I^{131} radiation therapy, if available, is often recommended depending on whether concurrent kidney disease exists. Treating feline DM may include a dietary change (eg, high protein/low carbohydrate diet) and weight loss for overweight cats. Contrary to humans with type-II diabetes, diabetic cats often have low insulin concentrations and typically require insulin or oral hyperglycemic medication on initial presentation to stabilize the condition.²³

5

Malignant neoplasia

Malignant neoplasms, including extranodal lymphoma, mammary carcinoma, and squamous cell carcinoma of the mouth or skin, are common in aging cats.^{27,28} Owners often do not recognize signs of cancer and present cats with vague signs such as changes in activity, appetite, and litter box use.^{27,29} As disease progresses, and depending on organ systems involved, other more organ-specific signs may develop.

Diagnosis starts with physical examination, CBC, chemistry panel that includes total thyroxine (TT_4) level, retroviral testing, and urinalysis. Diagnostic imaging, cytology, or biopsy is often required for more definitive diagnosis.

Recent advances in feline oncology have led to improved treatments and survival times in some, but not all, cancers; however, early detection is still paramount. Owners should be apprised of prognosis, benefits and risk of treatment, and costs of therapy. Hospice (palliative) care is a viable option that includes nutritional support and pain management and is an alternative to premature euthanasia in terminally ill cats.

Closing thoughts

Many problems of older cats are chronic and progressive, so early diagnosis and treatment is important for preserving quality of life. Many conditions cause pain (eg, chronic oral disease, DJD, neoplasia); therefore, pain management is crucial. Gastrointestinal disease, chronic pancreatitis, cardiomyopathy, cognitive dysfunction, and other diseases are also commonly seen in older cats; concurrent disease is often present and requires a complex management strategy. ■ **cb**

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

Key points of an ADR Visit

History: Outdoor access, number of cats in household, appetite or diet, hydration estimate, vomiting or diarrhea, sneezing or coughing, changes in eating or drinking habits, changes in urination or defecation habits, fecal consistency, activity and social behavior changes, changes in grooming habits, mobility, cognition, vocalization, odors, litter-box issues

Physical examination: Includes body condition score, changes in weight, matting and changes in fur coat luster, thorough oral examination, retinal examination, palpation for thyroid nodule, chest compression, auscultation at low and high heart rates, breathing pattern, thorough abdominal palpation, orthopedic examination

Minimum database: Minimum database in an older ADR cat is the same as recommended by the AAFP and AAHA for senior and geriatric cats^{30,31}:

- CBC
- Chemistry panel
- Urinalysis
- In-house urine culture
- Total T_4 , blood pressure measurement, \pm retrovirus testing (FeLV, FIV), \pm fecal analysis

If any abnormalities are found on history, physical examination, or minimum database, then further diagnostics may be required.