



Chronic renal disease in cats



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During the past five years, Banfield, The Pet Hospital, has seen 78,000 cats with clinical signs, laboratory evidence or both that were compatible with a diagnosis of chronic renal disease. A subset of this group (6,200 cats) having full supporting clinical and laboratory data was analyzed for this report.

The average number of hospital visits per cat in this study population was 6.0, and the average number of visits before chronic renal disease was diagnosed was 1.7. The latter number indicates that most cats are diagnosed with chronic renal disease during the initial visit (65 percent) or second visit to a Banfield hospital. Almost one-third of the cats (1,977) in the study set received regular six-month clinical examinations as part of a wellness plan. Of these, 1,044 (53 percent) were diagnosed with chronic renal disease during their initial examination, and, in many cases, before clinical signs were evident to their owners.

Clinical signs and progression

The most common presenting clinical signs noted at the time of diagnosis are depressed appetite or anorexia, dehydration, vomiting,

halitosis and dental calculus, listlessness or depression, increased water consumption and increased frequency of urination. Less common signs noted included increased volume of urine, diarrhea, poor condition and dull, dry coat and skin.

The most common clinicopathologic findings in cats at this time included elevated blood urea nitrogen (BUN), creatinine (uremia) and phosphorus (hyperphosphatemia) concentrations. Less common laboratory findings in cats included amylase, albumin and globulin elevations and decreased red blood cell (RBC) parameters (*e.g.*, RBC count, hematocrit, hemoglobin concentration) indicative of anemia, despite the clear presence of dehydration. Most cats diagnosed were in renal failure.

By following the course of the renal disease in these cats, we note that as the disease progresses, polyuria and polydipsia (PU-PD) is a more common finding, as is dental disease and uremic breath. The overall condition of the cat worsens over time, and the cat begins to become unthrifty and lose weight. The laboratory findings, as expected, also become progressively more abnormal over time (*e.g.*, elevated BUN and creatinine concentrations, low urine-specific gravity).



DataSavant's mission is to:

- Explore the health and well-being of Pet populations
- Evaluate new clinical treatments
- Monitor Pets as sentinels of zoonotic disease in family environments
- Transform Pet medical data into knowledge, *i.e.*, open new windows into Pet health care using the Banfield medical caseload and database.



Age and concurrent disease

The age range of cats when first diagnosed with chronic renal disease (age of onset) is apparent in *Table 1*. The average age of onset for our cat population is 12.3 years, with the peak age being 15 years.

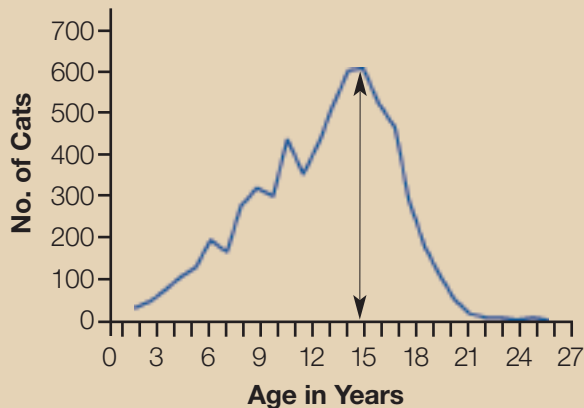
Anemia, reflecting erythroid-marrow suppression, is a common finding. Indeed, 30 percent of cats with chronic renal disease were anemic at the time of initial diagnosis, and most cats developed anemia within 60 days of the initial diagnosis. A small proportion (about 15 percent) developed anemia more than six months after the disease was diagnosed.

Battery of diagnostic tests

Our usual practice when investigating a systemic disease is to first evaluate blood-cell dynamics, organ function and the character of the urine through a complete blood count (CBC), serum chemistry profile and urinalysis as part of the primary diagnostic plan. These data are compared to any baseline data we may have on the pet (dynamic testing) and may be the basis for decisions about additional testing or evaluation.

Most cases (greater than 80 percent) of chronic renal disease diagnosed at Banfield hospitals are identified from this basic clinical pathology screen. Rarely (less than 20 percent of cases), other tests such as radiography, ultrasonography, serum electrolyte concentrations and tissue biopsy are performed as part of the diagnostic workup, although they are sometimes used to better define the stage of the disease. Testing to determine the urine protein-creatinine ratio may also be useful in diagnosing chronic renal disease early, but insufficient data are available at this point to draw a conclusion.

Table 1: Age of Onset of Chronic Renal Disease



Dynamic testing is a powerful aid to disease diagnosis and is part of the rationale for emphasizing wellness and the importance of collecting baseline data. In the near future, PetWare[®], our software system, will greatly facilitate dynamic testing by graphing and displaying past and present laboratory data.

The average life expectancy of cats in our population diagnosed with chronic renal disease is 11 months (328 days), which is disappointing. Many cats are presented to us only when a health concern has surfaced and become clinically advanced. Since cats show little sign of disease until it is advanced, it is invariably too late to affect the course of the disease. Cats must be enrolled in wellness plans so diseases such as chronic renal disease can be detected early enough to successfully intervene. 🐾

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