Feline Idiopathic Cystitis

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KEYWORDS

• Lower urinary tract signs • Diagnosis • Evidence-based treatment • Stress
• Nutrition • Environmental enrichment

KEY POINTS

- Complex interactions between the bladder, neuroendocrine system, and the cat's environment seem to be involved in the pathogenesis of feline idiopathic cystitis (FIC).
- FIC is diagnosed by excluding other causes of LUT signs.
- For cats with FIC, the highest grade of evidence supports nutritional management with a multipurpose therapeutic urinary food, environmental enrichment, and feeding moist food.

INTRODUCTION—DEFINITION/TERMINOLOGY

It has been said that a well-defined problem is half solved. Perhaps feline idiopathic cystitis (FIC) remains the most common cause of feline lower urinary tract (LUT) signs, in part, because it is so difficult to define. Historically, the term feline urologic syndrome was used to describe cats with the typical clinical signs of LUT dysfunction as well as partial or complete urethral obstruction.[1] In the early 1990s, results of studies focused on identifying abnormalities of the LUT led to the suggestion that affected cats represented a naturally occurring model of interstitial cystitis (IC), a chronic LUT syndrome in people. By 1996, the term "feline interstitial cystitis" was proposed to describe cats with idiopathic LUT signs.[2] Although it remains a diagnosis of exclusion, studies over the last 2 decades suggest that FIC is a result of complex interactions between the urinary bladder, nervous system, adrenal glands, husbandry practices, and the environment in which the cat lives.[3] This syndrome is further complicated by the fact that signs can be acute or chronic and have been associated with various combinations of abnormalities in the lumen of the LUT, the LUT itself, and other organ systems that cause LUT dysfunction.[4] Comorbid conditions related to the gastrointestinal tract, respiratory system, skin, central nervous system, cardiovascular

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Vet Clin Small Anim ■ (2015) ■–■
http://dx.doi.org/10.1016/j.cvsm.2015.02.007 **vetsmall.theclinics.com**
0195-5616/15/$ – see front matter

system, and the immune system are also recognized in cats with FIC.[5–9] Despite decades of research, it is still unclear if FIC is a single disease entity or a syndrome with multiple causes. The increasing evidence for multisystem involvement and evolving complexity of this diagnosis has recently led one investigator to suggest use of the term "Pandora syndrome."[4] A diagnosis of Pandora syndrome would apply to those cats that exhibit the following:

- Signs of LUT dysfunction and clinical signs in other organ systems
- Waxing and waning of clinical signs associated with stressful events
- Undergone resolution of severity of clinical signs following effective environmental enrichment

It is postulated that by broadening the name used to describe cats with chronic FIC, clinicians will be encouraged to conduct more comprehensive diagnostic and therapeutic evaluations. Ultimately, this may lead to better outcomes for affected cats and their owners.

EPIDEMIOLOGY/RISK FACTORS

A variety of identifiable causes of LUT dysfunction have been reported in cats, including urolithiasis, urethral plugs or strictures, trauma, bacterial cystitis, and neoplasia. When standard diagnostic evaluation fails to identify an underlying cause, cats are classified as having idiopathic feline LUT disease or FIC. Remarkably, in well over half of nonobstructed cats with signs of LUT dysfunction, the exact cause is unknown. In the last 25 years, 8 studies representing data from 23,837 affected cats from North America, Europe, and the Far East have identified underlying causes of LUT dysfunction.[10–17] FIC is the single most common diagnosis in these prospective (n = 627), retrospective (n = 302), and case-controlled (n = 23,019) studies (**Fig. 1**).

Although the aforementioned studies grouped together all unobstructed cats without an identified underlying cause, it is important to understand that cats ultimately diagnosed with FIC may have a variety of clinical presentations, including urethral obstruction (15%–20%) or nonobstructive disease with acute self-limiting episodes (80%–90%), frequently recurring episodes (2%–15%), or chronic persistent episodes (2%–15%).[18] Whether these presentations represent a spectrum of clinical manifestations associated with similar etiologic factors or entirely different disease mechanisms remains to be determined.

At least 5 studies have reported risk factors for development of LUT signs in general without differentiating the underlying causes.[14,16,17,19,20] Recognized breed predispositions are variable and appear to be somewhat dependent on the geography/breed popularity. One large study in the United States found that compared with domestic shorthair cats, Persian, Manx, and Himalayan cats had increased risk, and Siamese cats had decreased risk for LUT signs.[14] A similar pattern of risk was observed in Sweden for Persian (increased) and Siamese (decreased) cats.[21] Conversely, Siamese, along with Persian cats, were the most common purebred breeds affected in a New Zealand study, and the first epidemiologic study of LUT signs in Thailand reported that most cats (81.4%) were Siamese-mixed breed.[17,19] In most studies, middle-aged (4–7 years), neutered, and overweight cats are at increased risk for LUT signs.

In studies that have evaluated risk factors specifically for cats with FIC,[6,22,23] or as part of studies evaluating all causes of LUT dysfunction,[11,12,14,16] numerous risk factors have been identified (**Table 1**). Most of these studies report that male, middle-aged (~2–7 years), overweight cats are at increased risk. A variety of husbandry/environmental risk factors, most indicative of indoor housing and increased