MANAGEMENT OF URINARY TRACT INFECTION IN CATS

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A urinary tract infection (UTI) is a bacterial, fungal or algal infection anywhere along the urinary tract, which includes the kidneys and ureters (the upper urinary tract), and the bladder and urethra (the lower urinary tract). Urinary tract infections in dogs (and in people) are most commonly associated with bacterial ascension from the outer environment up the urethra and into the bladder (Litster *et al*., 2009). In cats, UTIs are caused by simple bacterial ascension in less than 10% of all diagnosed cases. Perhaps the most frequent feline urinary tract disorder is a condition called feline idiopathic lower urinary tract syndrome (FUS), lower urinary tract signs or idiopathic cystitis. This is not a "disease" per se but rather refers to a group of clinical signs which typically include hematuria, dysuria, pollakiuria and partial or complete urethral obstruction by uroliths ("stones"), calculi or crystals (Bailiff *et al.,* 2008). Urinary tract infections are less common in cats than in dogs and are more common in females in both species. Frequently, they are unaccompanied by clinical signs, although they tend to be quite painful.

Urinary tract infections are not common in cats. When they do occur, most feline UTIs develop as a result of some underlying medical condition or anatomical defect that predisposes the cat to infection by bacteria, viruses or fungi. Simple bacterial ascension with no predisposing condition is very uncommon. Feline leukemia virus, feline immunodeficiency virus, bladder tumors or polyps, bladder or kidney stones (uroliths), pyelonephritis, urinary retention disorders, kidney dysfunction or failure, strictures and congenital urachal remnants, other congenital deformities of the urinary tract, cancer, long-term immunosuppressive corticosteroid therapy and hyperadrenocorticism can predispose cats to repeated UTIs, even with aggressive antibiotic treatment. Elevated urine pH from any cause can facilitate bacterial overgrowth in the bladder. Diabetes mellitus is also associated with persistent or recurrent UTIs, because elevated blood and urine glucose levels create a supportive environment for bacterial overgrowth. Finally, an emerging and unfortunate cause of recurrent feline (and canine) urinary tract infections is bacterial resistance to antimicrobial drugs.

Some cats have recurrent UTIs that are termed "idiopathic," which means that the cause of the infection is unknown. While still under investigation, it has been suggested that some types of immune-mediated hypersensitivity (allergies) can cause bladder irritation and inflammation, which may contribute to persistent urinary tract infections in cats. While uncommon, cats occasionally develop UTIs due to simple bacterial ascension into the urinary tract in the absence of predisposing conditions. Bacterial urinary tract infections are more common in females because they have a shorter urethra, and therefore bacteria have a shorter journey from the external genital environment to the bladder. Occasionally, other organisms are the culprit; these can include Chlamydia, mycoplasma, viruses and fungi. In addition to the pain and discomfort caused by these infections, the bacteria or other contributing organisms can proliferate and infect areas in addition to the lower urinary tract, particularly the ureters and kidneys (White *et al*., 2012). Even more serious is the potential for systemic infection, which is a life-threatening medical emergency.

Two Female Cats (Fig. 1 & 2) brought by different owners to the Faculty of Veterinary Medicine, Jigjiga aging approx. 3years and 4years respectively; for the treatment of high fever (41°C) and anorexia. They had become incontinent, lethargic, listless, depressed. The cats were showing observable clinical signs of a UTI, they tend to include abnormally frequent and prolonged attempts to urinate producing only small volumes of urine in each attempt (pollakiuria), straining to urinate, difficulty in urinating (dysuria) and Crying while urinating. The cats were licking their genital area excessively. The owners informed us that the cats doing inappropriate urination in places that are not customary (outside the litterbox), malodorous urine, noticeable blood in the urine (hematuria). We observed cloudy urine and possibly inflammation and irritation around the cat's external genitalia. These cats were treated with Novalgin 1ml I/M and Albercillin 100 mg

I/M twice daily. The cats were treated for 5 days but not responded well, hence the therapy was discontinued for three days and urine samples taken after 3 days were cultured on MacKoncky agar. The cultural examination revealed the presence of moderate growth of E. coli which was sensitive to Ampicillin, Kenamycin, Gentamycin, Ciprofloxacin and Clavamox. The infected animals were than given Clavamox. (Clavamox is also the most common broad-spectrum antibiotic that is administered to cats).daily for 5 days consecutively and also increasing water

Fig.1. Cat - 1 Suffering with U.T.I

Fig.2. Cat - 2 Suffering with U.T.I

Consumption with a canned food diet, etc.; after which both the cats showed clinical recovery.

Urinary tract infections can occur anywhere along the tract from the kidneys to the urethra. Most infections gain access to the bladder when bacteria travel up the urethra from the outside world. From the bladder, the infection can ascend to the kidneys (Jahnukainen, *et al.*,2005). What about the other population of cats with diseases such as kidney insufficiency, diabetes, or hyperthyroidism? Cats with chronic kidney disease (CKD) and hyperthyroidism often produce a more dilute urine (USG <1.030) which is a friendlier environment for bacteria (Mayer-Rönne *et al*., 2004). Unregulated diabetic cats often have glucose (sugar) in their urine which makes a nice culture medium for bacteria.

Re-infections are defined as recurrent UT infections caused by a different organism. The only way you can differentiate relapses from re-infections is to compare the results of the initial culture obtained prior to antibiotic usage to those of cultures obtained during and/or after discontinuation of the antibiotic (Martinez-Ruzafa *et al*., 2012).

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