“Help me - I hate my owners”.

How to treat idiopathic feline lower urinary tract disease.

What is the best treatment for idiopathic feline lower urinary tract disease (FLUTD) ?

Good luck! There is no single best treatment. Since the cause is still undetermined in most cases it is likely that a multifactorial condition is present. The most time proven treatment in my opinion is to increase water consumption via canned food. This will help dilute the urine, increase bladder flushing via more frequent micturition and potentially reduce bladder mucosal exposure to noxious urine substances and less likelihood of obstruction in males.

Pain management and anti-inflammatory treatment may be of temporary benefit to reduce clinical signs. I frequently use oral buprenorphine (0.01 mg/kg q 8-12hr), meloxicam (0.05 mg/kg daily) or piroxicam (0.2 mg/kg daily) for 3-5 days; there is minimal risk for renal dysfunction or GI disease in otherwise healthy hydrated cats. An oral benzodiazepine or oxybutynin can also be used to lessen straining.

When struvite crystals are noted it may be the primary cause or contributing factor. Acidifying diets may help lessen clinical signs but they may not be the cure for this condition. If improvement is noted then use the diet (i.e., S/D, C/D, S/O, etc..) for several weeks to determine effectiveness. Recent diet formulations also contain amino acid proposed to reduce stress (C/D). Be careful with chronic use of these diets as they can predispose to development of calcium oxalate calculi, hypokalemia and chronic renal disease.

What other treatments might work for FLUTD ?

Methods to reduce environmental stressors has also been effective in some cases. Strategies to lessen conflicts should be employed. Use of the synthetic feline facial pheromone (Feliway) may be of some benefit for certain cats. Review of the indoor cat lifestyle with appropriate relaxation modifications may be of great help in reducing the occurrence of this condition (The Ohio State University Indoor Pet Initiative).

Pentosan and amitriptylline may also be of benefit in certain individuals. Pentosan is a glycosaminoglycan used to treat interstitial cystitis in women. It may improve bladder wall health and may lessen adherence of crystals and bacteria to the bladder mucosa. Cosequin for Cats can be tried and it is less expensive.

Amitriptyline can also be administered at 2.5 to 5.0 mg/cat po at night in an attempt to reduce interstitial bladder inflammation. This drug may relax the bladder wall (anticholinergic effect) and decrease mast-cell histamine release. If it is going to help it should do so within a 2 to 6 week period. Many cats in my experience may improve but relapse while still receiving this...
drug. Recent studies documented no consistent benefit. Transdermal preparations are variably absorbed and not recommended.

**What is the best way to treat cats with suspected urethrosperm?**

Both the smooth and striated muscle of the urethra can be hypertonic. To lessen smooth muscle tone, the alpha-antagonist *phenoxybenzamine* has often been prescribed. The dose used most frequently is 2.5mg (cat, small dog) to 5.0mg (dog) PO daily. If needed, the dose can be increased up to a maximum of 30mg/day in the dog and 10mg/day in the cat. Administration of the drug divided BID may be more effective than using it once daily. Since this drug is an alpha-antagonist, the primary side-effect is hypotension. This drug should therefore never be used when a patient is clinically ill. If used in cats following relief of urethral obstruction it should not be started until azotemia is resolved. The efficacy of the drug has been questioned, particularly after urethral obstruction in cats. For the treatment of reflex dyssynergia in dogs, phenoxybenzamine can be combined with striated muscle relaxant and a cholinergic drug for bladder atony.

**Prazosin HCl** is also an alpha-1 adrenergic antagonist used to reduce sympathetic tone and treat functional urethral spasticity in dogs & cats. While it may also cause hypotension at higher dosages it has proven to be safer and has superior efficacy compared to phenoxybenzamine in reliably reducing urethral tone. Canine dosage is 0.066mg/kg (1mg per 15 pounds) PO q 8-12hr. Feline dosage is 0.25 – 1.0 mg/cat PO q 8-24hr.

**Diazepam and Alprazolam** are benzodiazepines with striated smooth muscle relaxant properties. These drugs can be prescribed in combination with an alpha antagonist (prazosin) to maximize urethral relaxation. They may have a slight negative effect on detrusor muscle contraction so careful evaluation is indicated in patients with acute bladder injury from overdistension. The diazepam dose in cats is 1.25 to 2.5mg per cat PO q 8-12hr. The potential for sedation as a side effect is minimal. Increased appetite may occur in some animals. Diazepam should be used with caution in cats as rare reports of hepatocellular necrosis have been reported. The alprazolam dose in cats is 0.125 to 0.25 mg/kg PO q 12hr. The potential for sedation as a side effect is minimal. Increased appetite may occur in some animals. Hepatocellular necrosis has not been reported.

**Do cats develop hyperactive bladder syndromes?**

On occasion animals with hyperactive bladders present for urinary incontinence characterized by “squirts” of urine voided at inappropriate times. This form of incontinence is generally associated with increased intra-abdominal pressure that stimulates a detrusor reflex at a lower than normal threshold pressure or urine volume. It may be seen when an animal coughs, barks, jumps up from the floor. In the cat, hypercontractility may be related to neurotropic FeLV infection. Prior to treatment always rule-out other diseases that cause bladder hypercontractility such as bacterial infection, calculi, neoplasia, etc…
**Propantheline** (Probanthine), an anticholinergic drug, has been used to manage idiopathic detrusor instability in dogs and cats. The dose is empirical – 7.5 to 15 mg po q12hr is suggested. This drug is an anticholinergic so side-effects such as GI ileus, inappetance, vomiting and diarrhea may be seen; increased heart rate and dilated pupils can also occur.

**Oxybutynin** (Ditropan) is frequently prescribed for stress incontinence in women. It has anticholinergic and antispasmodic effects. The dose is 1.25 to 10mg po q 8-12hr. Side effects are as for other anticholinergics. This drug has been used successfully to decrease urgency and discomfort in patients with idiopathic FLUTD, cyclophosphamide-induced sterile hemorrhagic cystitis and transitional cell carcinoma.

**What drugs might be effective in managing cats with an atonic bladder?**

Always be sure to address any urethral obstructive or neurologic disease prior to drug therapy. Acute urethral obstruction (“blocked”) in cats can cause acute bladder injury and loss of muscular function following overdistension. In my experience drugs to improve bladder function (contraction) are minimally effective and so it is imperative that frequent bladder expression or continuous/intermittent urethral catheterization is used to maintain a small residual urine volume at all times. The prognosis is good for acute obstructive diseases which caused the bladder to be distended for shorter time periods.

**Bethanechol**, a cholinergic drug, has been used the most for treatment of detrusor atony. The dosage is administered at 2.5 to 30mg po q 6-8 hours. Always start at the long end of the range and gradually increase the dose daily until a positive effect or side effects are noted. Never start a cat on more than 2.5mg po bid. The therapeutic range of this drug is close to the toxic range. Principal cholinergic side effects are inappetance, pytalism, vomiting, diarrhea, constricted pupils and decreased heart rate. Atropine can be used to control side effects if necessary. In my experience bethanechol is not a very effective drug and it is imperative that the drug be combined with keeping residual volume to a minimum. Bethanechol is not likely to result in bladder rupture even if given to an obstructed individual due to its minimal effects on bladder contractility.

**Cisapride** can also be used for treatment of bladder atony. I use this drug at 2.5 to 10mg per animal (empirically based on size) po q12hr. This drug is also a cholinergic agent which has been used for successful treatment of megacolon in cats and to increase lower esophageal sphincter tone. There are minimal side effects associated with this medication. At present it is my drug of choice for detrusor atony.