DIAGNOSING CONSTIPATION, OBSTIPATION, & MEGACOLON IN CATS

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TENESMUS & DYSCEZIA EVIDENT

INVESTIGATION
Obtain signalment and history and conduct physical examination, including:
- Urination and defecation habits, including potential decrease in stool or urine output
- History of dysuria, stranguria, hematuria, or periuria
- History of vomiting
- Abdominal palpation (hard stool in colon, urinary bladder size and turgidity)
- Painful bladder
- Protrusion of tissue at the rectum
- Rectal or penile discharge
- Penile tip discoloration (eg, dark red) and/or small crystalline grain present

Urogenital disease suspected
First episode of constipation suspected
Recurrent episode of constipation suspected

Diagnostics pursued to determine cause?

YES

INVESTIGATION
Obtain minimum database, including:
- CBC
- Serum chemistry profile
- Total thyroxine (in patients >7 years of age)
- FeLV/FIV status
- Urinalysis ± urine culture
- Abdominal ± pelvic diagnostic imaging
- ± rectal examination (under sedation)
- ± orthopedic examination
- ± neurologic examination

DIAGNOSIS
Urogenital disease
- Feline idiopathic cystitis
- Urogenital neoplasia
- Urethral obstruction
- UTI
- Urolithiasis
- Prostatic disease (rare)

DIAGNOSIS
Constipation, with potential progression to obstipation and megacolon

TREATMENT
Rehydration (SC or IV) to correct deficit and provide maintenance
± enema
- Avoid sodium phosphate enemas due to potential life-threatening electrolyte imbalance
- Warm water (5-10 mL/kg) with lubricant gel (5-10 mL/cat), DSS (5-10 mL/cat), or lactulose (5-10 mL/cat) is recommended
- ± polyethylene glycol 3350 solution
- Trickle via NE tube (6-10 mL/kg/hr)
- Delection usually occurs in 6-12 hours (median, ≈8 hr)
± removal of impaction
± treatment of any other concurrent diseases

TREATMENT
Treat appropriately for concurrent diseases and/or urogenital disease

DSS = dioctyl sodium sulfosuccinate
FeLV = feline leukemia virus
FIV = feline immunodeficiency virus
NE = nasoesophageal

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Bowel movement within 24 hours of treatment?

**YES**

- Repeat therapy
- Rehydration
- Enema (see previous page)
- Manual deobstipation under anesthesia
- Treatment of any other concurrent diseases

**NO**

**INVESTIGATION**
Repeat or conduct physical examination and minimum database

**DIAGNOSIS**
Constipation, with potential progression to obstipation and megacolon

**TREATMENT**
To determine cause and treatment, proceed to next page

**TREATMENT**
Continue medical management as needed

*Patient refractory to medical or dietary management?*

**YES**

**TREATMENT**
Long-term management
- Maintain hydration
- Adjust diet to canned foods with water or low-residue or psyllium-enriched diets
- Preventive laxative (psyllium, wheat bran, pumpkin, polyethylene glycol 3350, lactulose)
- A prokinetic agents (eg, cisapride, mosapride, tegaserod, prucalopride)
**DIAGNOSIS**

Constipation, with potential progression to obstipation and megacolon*

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**ETIOLOGY**

**Behavioral/environmental factors**
- Environmental change (e.g., new home, new routine, seasonality)
- Inactivity
- Intercat conflict
- Soiled litter box
- Stress and/or anxiety (e.g., hospitalization)

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**ETIOLOGY**

**Neuromuscular dysfunction**
- Spinal disease
  - Intervertebral disk disease
  - Lumbosacral stenosis/cauda equina syndrome
  - Sacrococcygeal dysgenesis (e.g., in Manx cats)
- Infection (e.g., FIP, FeLV/FIV) or fungal disease
- Neoplasia
- Hypogastric or pelvic nerve disease
- Neoplasia
- Trauma injury
- Submucosal or myenteric plexus neuropathy
- Aging
- Dysautonomia
- Infection (e.g., FIP, FeLV/FIV) or fungal disease
- Neoplasia
- Colonic smooth muscle dysfunction (i.e., megacolon)

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**ETIOLOGY**

**Inflammation/infection**
- Perianal bite wounds and/or abscess
- Anal sacculitis and/or abscess
- Arthritis
- Proctitis
- Perineal fistula and/or rectal diverticulum

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**TREATMENT**

- Address environmental needs (see **Suggested Reading**, page 71)
- Address intercat social structure
- Address litter box issues
- Provide stress and/or anxiety management

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**TREATMENT**

- Treat or manage underlying cause
- Further diagnostics may be required

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**TREATMENT**

- Abscess treatment
- Antibiotics
- Foreign body removal
- Anti-inflammatory drugs (e.g., NSAIDs, tacrolimus, cyclosporine, corticosteroids)
- Anal gland expression and/or removal

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*Megacolon is suggestive of neuromuscular dysfunction.

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**CKD = chronic kidney disease**
**DM = diabetes mellitus**
**FeLV = feline leukemia virus**
**FIP = feline infectious peritonitis**
**FIV = feline immunodeficiency virus**
**IBD = inflammatory bowel disease**
**Mirataz™**

(mirtazapine transdermal ointment)

For topical application in cats only. Not for oral or ophthalmic use.

**CAUTION:** Federal law (USA) restricts this drug to use by or on the order of a licensed veterinarian.

Before using this product, please consult the product insert, a summary of which follows:

**INDICATION:** Mirataz™ is indicated for the management of weight loss in cats.

**DOSEAGE AND ADMINISTRATION:** Administer topically by applying a 1.5-inch ribbon of ointment (approximately 2 mg/cat) on the inner pinna of the cat’s ear once daily for 14 days. Wear disposable gloves when applying Mirataz™. Alternate the daily application of Mirataz™ between the left and right inner pinna of the ear. See Product Insert for complete dosing and administration information.

**CONTRAINDICATIONS:** Mirataz™ is contraindicated in cats with a known hypersensitivity to mirtazapine or to any of the excipients. Mirataz™ should not be given in combination, or within 14 days before or after treatment with a monoamine oxidase inhibitor (MAOI) [e.g. selegiline hydrochloride (L-deprenyl), amitraz], as there may be an increased risk of serotonin syndrome.

**HUMAN WARNINGS:** Not for human use. Keep out of reach of children. Wear disposable gloves when handling or applying Mirataz™ to prevent accidental topical exposure. After handling, dispose of used gloves and wash hands with soap and water. After application, care should be taken that people or other animals in the household do not come in contact with the treated cat for 2 hours because mirtazapine can be absorbed transdermally and orally. However, negligible residues are present at the application site and the body of the cat 2 hours after dosing. In case of accidental skin exposure, wash thoroughly with soap and warm water. In case of accidental eye exposure, flush eyes with water. If skin or eye irritation occurs seek medical attention. In case of accidental ingestion, or if skin or eye irritation occurs, seek medical attention.

**PRECAUTIONS:** Do not administer orally or to the eye. Use with caution in cats with hepatic disease. Mirtazapine may cause elevated serum liver enzymes (See Animal Safety in the caution in cats with kidney disease). Kidney disease may cause reduced clearance of mirtazapine which may result in higher drug exposure. Upon discontinuation of Mirataz™, it is important to monitor the cat’s food intake. Food intake may lessen after discontinuation of mirtazapine transdermal ointment. If food intake diminishes dramatically (>75%) for several days, or if the cat stops eating for more than 48 hours, reevaluate the cat. Mirataz™ has not been evaluated in cats < 2 kg or less than 6 months of age. The safe use of Mirataz™ has not been evaluated in cats that are intended for breeding, pregnant or lactating cats.

**ADVERSE REACTIONS:** In a randomized, double-masked, vehicle-controlled field study to assess the effectiveness and safety of mirtazapine for the management of weight loss in cats, 115 cats treated with Mirataz™ and 115 cats treated with vehicle control were evaluated for safety. The vehicle control was an ointment containing the same inert ingredients as Mirataz™ without mirtazapine. The most common adverse reactions included application site reactions, behavioral abnormalities (vocalization and hyperactivity), and vomiting. See Product Insert for complete Adverse Reaction Information. To report suspected adverse events, for technical assistance or to obtain a copy of the SDS, contact Kindred Biosciences, Inc. at 888-608-2542. For additional information about adverse drug experience reporting for animal drugs, contact FDA at 1-888-FDA-VETS or online at http://www.fda.gov/AnimalVeterinary/SafetyHealth.

**EFFECTIVENESS:** The effectiveness of Mirataz™ (mirtazapine transdermal ointment) was demonstrated in a randomized, double-masked, vehicle-controlled, multi-site field study involving client-owned cats of various breeds. Enrolled cats were ≥ 1 year of age and had existing documented medical history of ≥ 5% weight loss deemed clinically significant. The most common pre-existing conditions included renal insufficiency, vomiting, and hyperthyroidism. Some cats had more than one pre-existing condition. Cats were randomized to treatment groups in a 1:1 ratio of Mirataz™ to vehicle control. A total of 230 cats were enrolled and received either Mirataz™ (115 cats) or a vehicle control (115 cats) containing the same inert ingredients without mirtazapine. The cats were 2.8-24.6 years of age and weighed 2.1-9.2 kg. The dosage was a 1.5-inch ribbon (approximately 2 mg/cat) mirtazapine or vehicle ointment administered topically to the inner pinna of the cat’s ear. A total of 177 cats were determined to be eligible for the effectiveness analysis; 83 cats were in the Mirataz™ group and 94 cats were in the vehicle control group. The primary effectiveness endpoint was the mean percent change in body weight from Day 1 to the Week 2 Visit. At Week 2, the mean percent increase in body weight from Day 1 was 3.9% in the mirtazapine group and 0.4% in the vehicle control group. The difference between the two groups was significant (p<0.001) based on a two-sample t-test assuming equal variances. A 95% confidence interval on the mean percent change in body weight for the Mirataz™ group is (2.77, 5.11), demonstrating that the mean percent change is statistically different from and greater than 0.

**STORAGE:** Store below 25°C (77°F). Multi-use tube. Discard within 30 days of first use.

**HOW SUPPLIED:** Mirataz™ is supplied in a 5 gram aluminum tube.

**MANUFACTURED FOR:** Kindred Biosciences, Inc. 1555 Bayshore Highway, suite 200 Burlingame, CA 94010

**NADA 141-481, Approved by FDA**

Made in USA.

NDC 86078-686-01

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**References**


