

ausrichter animal health news

Urinary incontinence in female and male dogs

Urethral sphincter mechanism incompetence (USMI) is also a disorder of female and male dogs.

Affected animals maintain voluntary control of urination but leakage occurs at times when there is raised intra-abdominal pressure. USMI pathophysiology in male dogs is poorly understood. A diagnosis of USMI is made on the basis of the history and the elimination of other possible diagnoses.¹

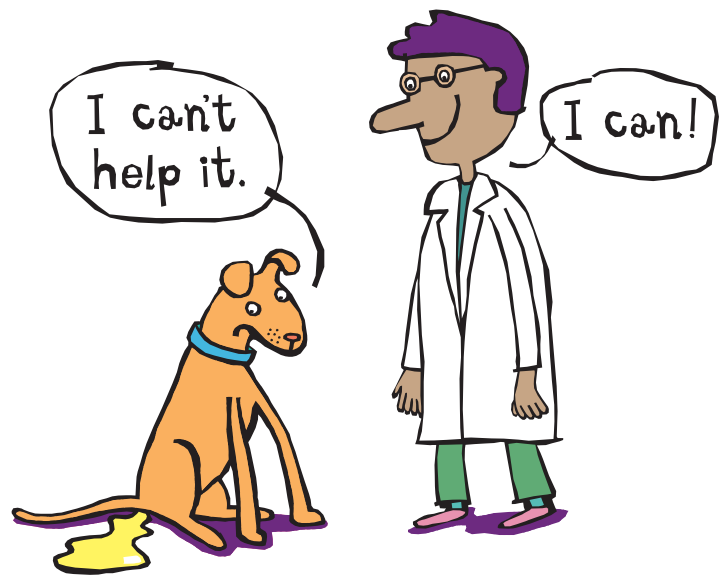
Phenylpropanolamine is the most effective medical treatment for USMI in female and male dogs.

Decreased urethral closure pressure in female and male dogs

Decreased urethral closure pressure can occur due to lumbosacral disorders such as intervertebral disc diseases and other neurologic problems. A thorough neurologic examination should be performed on all patients who present for UI (Urinary infection). USMI is a diagnosis of exclusion once all other disorders have been ruled out. UI can be daily or episodic and range from mild to very severe. There appears to be a higher risk of acquiring USMI for larger breed dogs after spaying compared to small breeds.²

What are treatment options for my dog with USMI?

Medical management of USMI includes the use of drugs aimed at improving urethral tone via the alpha-1 adrenoceptors (α 1-ARs). Phenylpropanolamine (PPA) is currently the drug that results in continence in the most dogs. Side effects in dogs include restlessness, anxiety, hypertension and tachycardia. Care in patients with cardiac disease and hypertension is recommended.³



Estrogens may also be used for USMI and these hormones are thought to sensitize the α 1-AR to the norepinephrine and indirectly result in an improvement in the closure pressure. The lowest possible dose of estrogen should be used. Diethylstilbestrol (DES) is still the most commonly prescribed form of estrogen for this disease. Bone marrow suppression has been described in dogs.²

Report of study of Urinary incontinence in male dogs under primary veterinary care in England

To estimate prevalence and identify demographic risk factors for urinary incontinence in male dogs.

Methods and methods

The study population included all dogs within the VetCompass database from September 2009 to July 2013. Electronic patient records were searched for urinary incontinence cases; demographic and clinical information were extracted and analysed.

Results

Of 109,428 male dogs attending 119 clinics in England, there were an estimated 1027 dogs diagnosed with UI, giving a prevalence of 0.94% (95% confidence interval: 0.88 to 1.00). Increased odds of UI were associated with greater age (age 9 to 12 years, odds ratio: 10.46, 95%

confidence interval: 6.59 to 16.62, n = 12,348, P<0.001) and being insured (odds ratio: 1.96, 95% confidence interval: 1.53 to 2.51, n = 26,202, P<0.001).

There was no association with castration or bodyweight using multi-variable analysis.

Clinical Significance

Estimates and prevalence of UI in male dogs is approximately 1%, which may be higher than expected given the scarcity of reports describing this problem. In contrast to bitches, neutering and bodyweight were not associated with greater odds of urinary incontinence, which is important when giving neutering advice.³

Urinary incontinence in male dogs is an issue highlighted by several recent studies. To date the focus has been on the disease in female dogs.

Dog breeds likely to have wee problems

Male Irish red setters, boxers, bulldogs, bull mastiffs and fox terriers are more likely to develop UI than the males of other dog breeds, according to new research.

Furthermore, purebred male dogs generally are 1.45 times more likely to suffer from involuntary leakages compared with their crossbred counterparts, suggesting a likely genetic component to the disease.

The Royal Veterinary College's (RVC) VetCompass™ programme studied anonymised clinical data from 119 first opinion veterinary practices across England and found that one in every 100 male dogs is affected by urinary incontinence. Irish red setters were found to particularly suffer, with 1 in 12 of them affected, and the breed is 14 times more likely to have leakages than a crossbred dog.

Disturbingly, researchers also found that UI was cited as the main reason or a contributing cause for being put down in 41.6% of the incontinent male dogs that were euthanised during the study. The study disproved previous opinion that incontinence, which is both a distressing emotional and physical issue as well as imposes financial burdens on owners, mainly affects female dogs.

Further VetCompass™ findings also include that older dogs are more prone to leakages, with male dogs aged 9 to 12 years old were 10.46 times more likely to suffer from the problem than dogs aged under three. There is no conclusive evidence to suggest that neutered dogs were more likely to develop this incontinence issue though.

Dr Dan O'Neill, Senior Lecturer in Epidemiology at the RVC and study co-author, said: "The most fascinating outcome of this study was the power to use Big Data to identify just how frequently some breeds show urinary incontinence in male dogs. One in twelve of all Irish Red Setters were affected and the breed was 14 times more

likely to be affected than crossbreds. Using these types of data, we are finally lifting the lid on which diseases really impact most on dog welfare."

Jon Hall, Senior Lecturer in Small Animal Surgery (Soft Tissue) at the University of Edinburgh and study co-author, added: "Urinary incontinence is a huge problem for dogs and people, with considerable welfare and financial impact. Until now, the vast majority of studies have focused on females since they were considered to be much more commonly affected. Whilst this remains true, a large number of male dogs presenting to general practice also show signs and we hope that by highlighting this problem by examining such large number of male dogs (which is only really possible with the VetCompass programme and the financial support provided by the generous grants provided by funding bodies), we can now better identify and recruit these patients for investigations and clinical trials to help treat this disease."

RVC's VetCompass™ project analyses anonymised veterinary clinical records from over 1,000 UK vet clinics to enhance understanding and improve the health and welfare of all companion animals.

This particular study focused on an estimated 1,027 urinary incontinence cases from the 109,428 male dogs that attended participating clinics between September 2009 and July 2013.⁴

Managing urinary incontinence in dogs

Phenylpropanolamine (PPA) is the initial treatment of choice to restore urinary continence in dogs with USMI. Incontinence is controlled in 75-90% of female dogs with USMI treated with the α -adrenergic agonist PPA.

Virtually all affected dogs have some improvement in continence after treatment with PPA. The largest dose should be given at night to control incontinence while the dog is sleeping. In dogs with only night-time incontinence, dosing only at night can be effective. PPA may become less effective with prolonged use (so-called tachyphylaxis). Occasionally, simply increasing the dosage of PPA is sufficient to regain control of continence. Potential adverse effects include restlessness and hypertension.⁵



PRODUCT INFORMATION

PROIN[®] 50 mg Chewable Tablets

For use in dogs (female and male) to control urinary incontinence associated with urethral sphincter hypotonus.

Composition

Phenylpropanolamine hydrochloride, 25 mg; 50 mg; 75 mg scored tablets. Specially formulated with liver flavouring – taste tested on dogs.

Actions

Phenylpropanolamine is a sympathomimetic which acts by direct stimulation of the α -adrenergic receptors in the smooth muscle of the internal urethral sphincter.

Indication

PROIN[®] is indicated for control of urinary incontinence due to urethral sphincter hypotonus in female and male dogs.

Contraindication

DO NOT USE in pregnant or lactation bitches.

Precautions

Take care when treating animals with severe renal, hepatic insufficiencies or cardiovascular disease, diabetes mellitus, hyperadrenocorticism, glaucoma, hyperthyroidism or other metabolic diseases.

PROIN[®] treatment may be considered at 50% of the recommended dose and then slowly increased to a level at which urinary incontinence is controlled.

Adverse reactions

In healthy dogs side effects were not observed when up to five times the recommended dose was administered.

Interactions

Do not administer to dogs treated with non-selective monoamine oxidase inhibitors. Possible interactions

should be considered when PROIN[®] is concurrently administered with sympathomimetics, anticholinergic drugs and tricyclic antidepressants.

Overdosing

When overdosed phenylpropanolamine may produce excessive stimulation of the sympathetic nervous system; treatment of side effects should be symptomatic.

Dosage and administration

Female and male dogs 2 mg/kg b.i.d (twice a day).

Presentation

Chewable tablets scored – 50 mg in packs of 60 and 180 (not all tablets or pack sizes may be marketed).

A product of: PRN Pharnacal, Pensacola FL 32514 USA

Distributed by: Ausrichter Animal Health

APVMA Approval No.: 83535/108576.

Ringworm infection in animals

Ringworm infection in animals can be easily transmitted to humans, therefore ringworm infection is a zoonotic issue of high importance. Cats are especially prone to ringworm infection, particularly *M. canis*, and the infection is frequently transferred to children.

Horses are also susceptible to ringworm. Both them, and their environment, **must** be treated to decontaminate and kill ringworm spores. Cattle, particularly calves, are equally susceptible to ringworm and should be treated as soon as possible. Camel calves can also be infected with ringworm *Trichophyton verrucosum* and should also be suitably treated.

In vitro activity of six antifungal drugs tested against 36 strains of dermatophytes⁶

| Antifungal drug | MD MIC (μ g/mL) | | DD Inhibition zone diameter (mm) | |
|---------------------|-------------------------|-----------------|-------------------------------------|-------------|
| | Geometric mean | Range | Mean \pm std. dev. | Range |
| Econazole | 0.21 | 0.03–1.0 | 43.69 \pm 3.011 | 0–80 |
| Enilconazole | 0.18 | 0.03–1.0 | 50.47 \pm 3.842 | 0–82 |
| Griseofulvin | 2.20 | 0.50–8.0 | 41.19 \pm 3.815 | 0–82 |
| Itraconazole | 0.96 | 0.06–4.0 | 17.43 \pm 1.788 | 0–38 |
| Ketoconazole | 0.76 | 0.06–1.0 | 24.19 \pm 3.507 | 0–62 |
| Miconazole | 0.29 | 0.03–1.0 | 23.22 \pm 2.76 | 0–50 |

This report shows dermatophytes (ringworm) are significantly more susceptible to Econazole and Enilconazole than to Miconazole.

Efficacy of various anti-fungal treatments

Seven antimycotic drugs (econazole, enilconazole, fluconazole, griseofulvin, itraconazole, ketoconazole, and miconazole) were tested against 36 dermatophyte strains (19 *M. canis*, 7 *T. mentagrophytes*, 5 *M. gypseum*, 2 *M. cookei*, 1 *T. rubrum*, 1 *T. ajelloi*, and 1 *T. terrestre*) isolated from animals, humans, and the environment. Two in vitro methods were compared: a micro-dilution test based on the CLSI M38-A method, and a disk-diffusion test. Fluconazole was not effective in vitro against the dermatophytes. ***Econazole and enilconazole were the most effective.*** Thirteen of the strains tested were griseofulvin-resistant.

Use of Enilconazole for animals and birds

Enilconazole is an imidazole a synthetic, wide-spectrum antimycotic with high effectiveness against the majority of common fungi and yeasts (*Microsporum*, *Aspergillus*, *Trichophyton* and *Mucor*). The systemic availability after local application in animals is very low. After peroral administration it is metabolized slowly. Biological half-time of enilconazole in tissues and the plasma of cattle is approximately 12 to 16 hours. The principal excretion pathways are the urine and faeces.

The currently available veterinary preparations are used in the local treatment of dermatomycoses. Animals should be treated with an emulsion, in a 0.2% concentration, which is best applied with a sprayer; in dogs and horses it is necessary to treat the whole body. The therapy includes four applications with intervals of 3-4 days.⁷ In addition to horses, dogs and cattle, the 0.2% solution was successfully applied also to domestic rodents, rabbits, hedgehogs, weasels, martens and some reptiles. Parrots, songbirds and predatory birds can be treated with enilconazole by inhalation or aero-dispersion.⁸ The development of side effects in the treated animals is improbable because absorption through the skin is very low. Accidental *per os* uptake does not cause intoxication because its bioavailability within the organism is low.⁷



PRODUCT INFORMATION

Austrazole Fungicidal Wash 100mL

Actions

Antimycotic, effective treatment of dermatophytes (*Microsporum* spp. and *Trichophyton* spp.), Malassezia and their spores.

Indications

Treatment of dermatomycosis on horses and dogs (ringworm, malassezia and topical fungi). To decontaminate the animal's environment and prevent the spread of fungal infections to other animals or humans, and prevent the re-infection after the conclusion of treatment. Early discontinuation of treatment often results in a relapse.

Directions for Use

Dilute 1 part Austrazole Topical Fungicide in 50 parts of lukewarm water. Only dilute quantity needed to treat animal immediately. 10mL makes up 500mL and 100mL makes up 5 litres of wash. Please note: Not to be applied pre-race on the day of the race.

Treatment for Horses

Areas of infection and surrounding skin should be washed with Austrazole 4 times, at intervals of 3 to 4 days. *Leave emulsion on animal to dry.*

Pack Size

100mL – Makes up 5 litres of ready to use wash or spray.
1 litre – Makes 50 litres of ready to use wash or spray.

Specific Treatment Steps

- 1. First Treatment:**
Wash the entire animal with the emulsion, brush hair to ensure skin and hair is thoroughly soaked.
- 2. Second Treatment:**
Apply emulsion directly to ringworm lesions.
- 3. Third Treatment:**
Apply directly emulsion to ringworm lesions.
- 4. Fourth Treatment:**
Wash the entire animal with the emulsion. Brush hair to ensure skin and hair is thoroughly soaked with emulsion.

Storage

Below 30°C.

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