

## Addressing Serotonin Syndrome in Cats

This retrospective study examined selective serotonin reuptake inhibitor (SSRI) toxicosis in cats. SSRIs prolong the effect of serotonin by inhibiting reuptake of the neurotransmitter in the synaptic cleft. In humans, SSRIs are used to treat anxiety, depression, and obsessive compulsive disorders. In veterinary medicine, they are used for behavior modification, including treatment of aggression and urine spraying. The database of an animal poison control center was reviewed, and 33 cases of SSRI ingestion by cats were identified. These 4 SSRIs were commonly ingested by cats were venlafaxine (Effexor) and fluoxetine (Prozac). Less commonly ingested SSRIs included citalopram (Celexa) and escitalopram (Lexapro). Of the cases reviewed, 8 (24%) became symptomatic. Signs in those 8 cats included sedation ( $n = 6$ ), GI signs ( $n = 4$ ), cardiovascular signs ( $n = 1$ ), central nervous stimulation ( $n = 1$ ), and hyperthermia ( $n = 1$ ). Twenty of the

cats received treatment, including supportive and symptomatic care. For the 16 cats treated as in-patients, mean hospitalization time was  $14.6 \pm 7.8$  hours. All symptomatic cats had complete resolution of signs. The overall prognosis is excellent.

### ■ Commentary

Cats are unique with respect to poisonings or overdoses. Poisonings reported to the Animal Poison Control Center involved only 13% cats compared to 76% dogs, and they primarily were <1 year of age.<sup>1</sup> Cats are inquisitive and may voluntarily ingest toxic substances, especially plants. They are fastidious groomers and may ingest topically applied toxins. In addition, they may be purposefully or accidentally administered drugs by the client. SSRIs are increasingly used in humans and animals for behavior modification, so it is expected there would be an increase in exposure and reported toxicity. SSRIs can

cause serotonin syndrome at therapeutic and toxic doses in humans, and this report described what to expect and how to handle SSRI exposure in cats. Fortunately, there are no reports of severe reactions or death in cats with witnessed ingestion of SSRIs in cases reported to the ASPCA. Reporting intoxications to poison control centers serves to increase understanding of reactions and therapeutic strategies and should be a standard of care.—*Elke Rudloff, DVM, DACVECC*

### ■ ■ Source

Selective serotonin reuptake inhibitor (SSRI) toxicosis in cats: 33 cases (2004-2010). Pugh CM, Sweeney JT, Bloch CP, et al. *JVECC* DOI: 10.1111/vec.12091.

1. **An overview of trends in animal poisoning cases in the United States: 2002-2010.** McClean MK, Hansen SR. *Vet Clin North Am Small Anim Pract* 42:219-228, 2012.

## Tris-EDTA & Otitis in Dogs

*Pseudomonas aeruginosa* is the most common Gram-negative cause of otitis externa/media in dogs. Multi-drug resistant *P aeruginosa* is particularly difficult to treat. Tris-buffered EDTA has been shown to inhibit the growth of this pathogen both in vitro and in vivo and to potentiate the action of some antibiotics. In this study, the impact of Tris-EDTA on the minimal bactericidal concentrations (MBC) and minimal inhibitory concentrations (MIC) of two commonly used injectable antibiotics (ie, marbofloxacin, gentamicin) was evaluated. Eleven multi-drug resistant *P aeruginosa* isolates were incubated alone with each antibiotic and in combination with Tris-EDTA. The Tris-EDTA alone was bacteriostatic but not bactericidal. However, the addition of Tris-EDTA significantly reduced the MBC and MIC of both marbofloxacin and gentamicin.

### ■ Commentary

Multi-drug resistant *P aeruginosa* otitis externa/media in dogs is always difficult to treat. Not only does one have to address the infections but also with the underlying trigger, often allergy and/or a primary disorder of keratinization are challenging without the complication of a multi-drug resistant otitis. If these cannot be successfully treated, total ear canal ablation is often indicated. Further complicating the situation is that systemic antibiotics cannot reach high enough tissue concentrations within the ear canal to resolve these infections. Topical antibiotic solutions are the only means to ensure high antibiotic concentrations at infection site. If the ear canal is obstructed, an aggressive course of oral prednisone may be indicated to decrease swelling and obstruction, otherwise topical ear cleaners and otic medications are useless. If the canal is stenotic,

surgery is the best option for good quality of life. If the ear canal is open but filled with exudate, topical medications will not work in the presence of debris. Severe pain may be caused by obstruction and/or the infection and must be addressed, and veterinarians need to ensure that asking owners to medicate a dog's ear will not put the owners at risk for injury.—*Karen A. Moriello, DVM, DACVD*

### ■ ■ Source

Tris-EDTA significantly enhances antibiotic efficacy against multidrug-resistant *Pseudomonas aeruginosa* in vitro. Buckley LM, McEwan NA, Nuttall T. *VET DERMATOL* 24:519-E122, 2013.

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