

Installing Antifungal Cream in the Sinus: New Option

Several oral and topical antifungal drugs have been used to treat sinonasal aspergillosis. Most successful have been topical enilconazole solution, clotrimazole solution, and clotrimazole cream, whereby the nasal cavities and frontal sinuses are flooded with the agent by catheter placement after trephination of the frontal sinuses or, less invasively, through catheters placed endoscopically into the frontal sinuses or blindly into the nasal chambers through the nares. This study utilized CT to assess the distribution of surgically administered clotrimazole cream and associated filling of the frontal sinuses and caudal aspect of the nasal cavities for treatment of sinonasal aspergillosis. Openings were made into the left and right frontal sinuses of 12 canine cadavers with a 3.2-mm Steinmann pin at standardized landmarks, and clotrimazole cream was then instilled into each side. Postoperative CT scans demonstrated excellent filling of most of the frontal sinuses and all caudal nasal cavities via this technique. This



procedure can take minutes to perform and avoids the longer anesthetic times associated with other techniques. Local structures can be damaged with potentially severe consequences (inadvertent injury to local structures was noted in 2 cadavers [3 sinuses]); accurate pin placement with careful use of described landmarks and avoidance of too-deep pin penetration are essential.

■ ■ Commentary

The postprocedure CT of this study showed excellent sinus filling in 22/24 sinuses and excellent filling of the caudal

nasal cavity in all 24 sinuses, although in 2 dogs the cranium or the lateral sinus wall was penetrated, allowing cream to enter the brain or the periorbital space.

Sinonasal aspergillosis is most commonly treated with rhinoscopic flushing and instillation of clotrimazole liquid, which requires a prolonged procedure involving repositioning for tissue bathing. The described procedure offers such advantages as reduced procedure time and the possibility of the cream to leak slowly out of the sinuses into the nasal cavity. The biggest disadvantage is the chance of unintentionally penetrating vital structures.—

Jonathan Miller, DVM, MS, DACVS

■ ■ Source

Trephination of the frontal sinuses and installation of clotrimazole cream: A computed tomographic study in canine cadavers. Burrow R, Baker M, White L, McConnell JF. *Vet Surg* 42:322-328, 2013.

For Cats, Consider Prednisolone

Cats are considered resistant to many of the adverse effects of glucocorticoids. Subsequently, higher (relative to dogs) doses have been recommended. In this study, 11 healthy cats (5 in normal body condition, 6 overconditioned) had lean body mass objectively determined by bioelectric impedance analysis. A 2-drug crossover trial was performed with a 3-week washout between treatments. Eight cats first received prednisone; the remaining 3 initially received prednisolone. All received a total dose of 2 mg/kg. Blood samples were drawn pre- and posttreatment at 1, 2, 4, 6, 8, 12, and 24 hours after administration. Both prednisone and prednisolone were assayed using high-performance liquid chromatography. The study confirmed the conversion of prednisone to prednisolone in cats; however, 2 mg/kg PO prednisolone pro-

duced a significantly higher plasma concentration (4-fold) compared with PO prednisone. There was also a significantly higher plasma drug concentration (2-fold) in overconditioned cats compared with normal conditioned cats. The study suggested low bioavailability of prednisone compared with prednisolone in cats and that lean body mass or ideal body weight should be considered when dosing.

■ ■ Commentary

This study offers 2 clinically relevant applications: First, prednisolone should be used in cats and prednisone (a prodrug requiring conversion) should be avoided. Should prednisone be prescribed, the cat will be significantly underdosed from the intended treatment approach. Second, lean body weight should be prudently considered

when prescribing prednisolone to overweight and obese cats. When dosed on a body weight basis, obese cats may have increased targeted plasma levels. This could increase an overconditioned patient's risk for complications (eg, diabetes from insulin resistance, heart failure from fluid retention). In rabbits and humans, prednisolone is known to have limited distribution into adipose tissue, and cats are likely similar in this regard.

—Jonathan Bach, DVM, DACVIM, DACVECC

■ ■ Source

Influence of body condition on plasma prednisolone and prednisone concentrations in clinically healthy cats after single oral dose administration. Center SA, Randolph JF, Warner KL, et al. *Res Vet Sci* 95:225-230, 2013.