

Therapeutics Research Note: Doxycycline Formulations

This canine study evaluated the pharmacokinetics of 4 oral long-acting formulations of doxycycline mixed with different proportions of acrylic acid and polymethacrylate-based matrix (DOX1, DOX2, DOX3, and DOX4). A control of 20 mg/kg of doxycycline with no excipients was included.

Therapeutic concentrations were observed for 60 hours after administration of DOX1 and DOX4, for 48 hours after DOX2 and DOX3, and for 24 hours after the control dose. Pharmacokinetic parameters between DOX1 and DOX2 and between DOX3 and DOX4 did not differ significantly; however, parameters for the control treatment differed significantly from all long-acting formulations. These doxycycline formulations may be useful in reducing dosing frequency and, in turn, may improve compliance and decrease costs and adverse effects. However, further safety studies are needed.

Source

Arciniegas Ruiz SM, Gutiérrez Olvera L, Bernad Bernad MJ, Caballero Chacón Sdel C, Vargas Estrada D. Comparative pharmacokinetics of a new oral long-acting formulation of doxycycline hyclate: a canine clinical trial. *Eur J Pharm Sci.* 2015;80:9-15.

Therapeutics Research Note: Compounded Buprenorphine Stability

Buccally administered, compounded buprenorphine is a frequently used pain medication in cats. The long-term stability of compounded buprenorphine solutions is unknown.

In this study, the authors used high-performance liquid chromatography to determine the stability of a 3 mg/mL-compounded buprenorphine product. The formulation remained stable under refrigeration and at room temperature for 90 days. However, some of the room-temperature samples developed a white sediment, and pH decreased over time, indicating possible degradation.

The authors concluded that the 3 mg/mL-compounded buprenorphine product is stable for 90 days when refrigerated and stored in amber glass bottles.

Source

Kirk LM, Brown SD. Beyond-use date determination of buprenorphine buccal solution using a stability-indicating high-performance liquid chromatographic assay. *J Feline Med Surg.* 2015;17(12):1034-1040.

ZYCORTAL® Suspension (desoxycorticosterone pivalate injectable suspension)

Mineralocorticoid for subcutaneous use in dogs only.

Brief Summary (For Full Prescribing Information, see package insert)

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

DESCRIPTION: Desoxycorticosterone pivalate is a mineralocorticoid hormone. Zycortal Suspension contains 25mg/ml of desoxycorticosterone pivalate.

INDICATION: For use as replacement therapy for mineralocorticoid deficiency in dogs with primary hypoadrenocorticism (Addison's disease).

CONTRAINDICATIONS: Do not use ZYCORTAL Suspension in dogs that have previously had a hypersensitivity reaction to desoxycorticosterone pivalate.

WARNINGS: Use ZYCORTAL Suspension with caution in dogs with congestive heart disease, edema, severe renal disease or primary hepatic failure. Desoxycorticosterone pivalate may cause polyuria, polydipsia, increased blood volume, edema and cardiac enlargement. Excessive weight gain may indicate fluid retention secondary to sodium retention.

HUMAN WARNINGS: Not for human use. Keep this and all drugs out of the reach of children. Consult a physician in case of accidental human exposure.

PRECAUTIONS: Any dog presenting with severe hypovolemia, dehydration, pre-renal azotemia and inadequate tissue perfusion ("Addisonian crisis") must be rehydrated with intravenous fluid (saline) therapy before starting treatment with ZYCORTAL Suspension. The effectiveness of ZYCORTAL Suspension may be reduced if potassium-sparing diuretics, such as spironolactone, are administered concurrently.

ADVERSE REACTIONS: The field safety analysis included evaluation of 152 dogs. The most common adverse reactions reported are polyuria, polydipsia, depression/lethargy, inappropriate urination, alopecia, decreased appetite/anorexia, panting, vomiting, diarrhea, shaking/trembling, polyphagia, urinary tract infection, urinary tract incontinence and restlessness. Reports of anaphylaxis and anemia have been associated with a different desoxycorticosterone pivalate injectable suspension product.

ZYCORTAL® SUSPENSION (desoxycorticosterone pivalate injectable suspension)

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NADA 141-444, Approved by FDA

