



The UC Davis Koret Shelter Medicine Program

Use of Ponazuril for treatment of Coccidia in kittens and puppies

The articles referenced below describe the use of toltrazuril and/or diclazuril for treatment of coccidia in kittens and puppies. Lloyd et al found Toltrazuril at 30 mgs/kg once or 15 mgs/kg repeated daily for three days, then repeated again 10 days later was effective in clearing coccidial infection in experimentally infected kittens. A single dose of Diclazuril at 25 mgs/kg did not clear infection in all treated puppies or kittens, but a repeated treatment was not tried in this study. Recontamination of the environment can be a problem and lead to reinfection. Dausgies et al found that 10, 20 or 30 mg/kg of Toltrazuril suspension given to 4 week old puppies three days post infection successfully prevented shedding or development of signs in puppies. 4/6 untreated controls developed severe hemorrhagic diarrhea and died. The authors recommend prophylactic treatment of puppies at 3-4 weeks of age.

Ponazuril is a metabolite of Toltrazuril, and is available in the United States as Marquis Paste, produced by Bayer (800-633-3796). Anecdotally, this drug has been used off-label successfully for treatment of coccidia at a dose of 15-30 mgs/kg. Marquis paste is marketed as an equine coccidial treatment, and must be diluted for administration to small animals. One syringe of paste contains 127 grams at 150 mgs/gm (19050 mgs). Although a single tube generally costs over \$100, the per-animal cost is reasonable. Ponazuril is reportedly stable in suspension and can be mixed with water, VAL syrup or other suspensions to improve palatability. The solution should be stored in a light proof container and thoroughly shaken before administration. You may not want to make the whole tube up at once, in case of spills. It may be necessary to repeat the treatment in seven days, particularly if animals remain in the shelter environment.

Here is one shelter's recipe for mixing and administering Marquis paste.

Ponazuril Instructions:

Dilute one syringe of paste (127 grams at 150 mgs/gm., 120 ml volume) in 21 mls* of water or other carrier (e.g. Val syrup) results in a solution of 135 mgs/ml. This can be dosed at 1 ml/10 lbs (30 mgs/kg). The solution should be stored in a light proof container and thoroughly shaken before administration.

Purchasing: single tubes are available from various sources, e.g. www.agri-med.com

Dosing: Administer 1 ml/10 lbs; repeat in 10 days. Perform fecal examination 2 weeks after second treatment if animal is still in the shelter.

***The math:**

$(127 \text{ grams} \times 150 \text{ mgs/gm}) = 19050 \text{ mgs}/141 \text{ mls} = 135 \text{ mgs/ml}$
 $135 \text{ mg}/4.5 \text{ kg} = 30 \text{ mg/kg}$ dose (and a dosing schedule of 1 ml/10 lb)



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Note: 2.5% and 5% toltrazuril suspensions are available outside of the United States. Only the 5% product should be used in dogs and cats; the 2.5% suspension is alkaline and can cause mucosal irritation.

1. Darius AK, Mehlhorn H, Heydorn AO. Effects of toltrazuril and ponazuril on the fine structure and multiplication of tachyzoites of the NC-1 strain of *Neospora caninum* (a synonym of *Hammondia heydorni*) in cell cultures. *Parasitol Res.* Apr 2004;92(6):453-458. Epub 2004 Feb 2012.
2. Lloyd S, Smith J. Activity of toltrazuril and diclazuril against *Isospora* species in kittens and puppies. *Vet Rec.* Apr 21 2001;148(16):509-511.
3. Dauschies A, Mundt HC, Letkova V. Toltrazuril treatment of cystoisosporosis in dogs under experimental and field conditions. *Parasitol Res.* Oct 2000;86(10):797-799.