

ANTICESTODALS

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DRUGS

- Praziquantel [(vm: Droncit; hm: Biltricide)]
- Epsiprantel [vm: Cestex; hm: none]
- Bunamidine [vm: Scoloban]; hm: none
- Febantel [vm: Vercom Paste; hm: none]
- Niclosamide [vm: Yomesan; hm: Niclocide]
- Mebendazole [vm, Telmin; hm: Vermox]
- Albendazole [vm: * ; hm: Zentel (Invest)]
- Paromomycin [hm: Humatin]

* Cestodes not an indication in VM

PRAZIQUANTEL

Examples

- vm: DRONCIT PO and Injectable dogs, cats, birds and other small animals.
- hm: BILTRICIDE Tablets only

Spectrum

- ADULT AND LARVAL CESTODES - animals & humans
 - Dogs: *Dipylidium caninum*, *Taenia pisiformis*, and *Echinococcus granulosus*
 - Cats: *Dipylidium caninum* and *taenia taeiaeformis*
- TREMATODES
 - Flukes - lung, liver, intestinal
 - Schistosomiasis

Mechanism of Action

- Root Mechanism
 - Rapidly taken up by parasite
 - Increases membrane permeability to mono and divalent cations, especially Ca^{++}
 - However, it acts differently than Ca^{++} and K^+ ionophores
 - Praziquantel produces to prompt actions depending on the concentration.
- Low Concentrations
 - Increased muscular activity followed by contraction and SPASTIC PARALYSIS which

causes the parasite to lose its attachment to the intestinal mucosa.

- Slightly Higher Concentrations (Still in therapeutic range)
 - Vacuolization and vesiculation of the tegument of susceptible organisms
 - If sufficiently pronounced, this ACTIVATES HOST DEFENSE MECHANISMS ultimately leading to the destruction of the parasites.
 - This mechanism correlates well with the effects in *Schistosoma mansoni*.

Contraindications

None described for animals by Theodorides 1985

Adverse effects

- Dogs: PO doses anorexia, vomiting, lethargy or diarrhea in less than 5%.
- Cats: PO doses salivation and diarrhea in less than 2%.
- Humans: Reversible Dizziness, headache, malaise, abdominal pain and nausea relatively common and higher doses.

Precautions / comments

- Single dose usually adequate for tapeworms
- Humans: Drug appears in milk (ca. 25% of maternal serum) so women should not nurse for 72 hours. Express and discard milk.
- No embryotoxicity, teratogenesis, mutagenesis or carcinogenesis in rat studies at up to 40 x normal dose
- Caused 3-fold increase in abortions in rats at dose rate recommended for humans. [AMADE 90,4:23]
- No effect on reproductive performance in rats
- Not intended for use in puppies or kittens less than 4 weeks old.

Advantages

RELATIVELY SAFE

Disadvantages

Cannot use in ALL AGES of animals, e.g., puppies / kittens < 4 wks old

Epsiprantel

- vm: CESTEX po once
- hm: none

Spectrum

- Dogs and cats: *Dipylidium* and *taenia*

Contraindications

- None on the label
- Probably not use in pups/kittens less than 7 weeks old

Adverse effects

- None expected
- 36-times recommended dose caused only vomiting in some kittens, nothing in dogs

Precautions / Comments

- Safety for pregnant animals unknown.
- Drug extremely poorly absorbed after po administration (<0.1% elimin urine, Most in stool with no metabolites detected yet.
- Worms digested, some completely, so not visible in stool.

Advantages

- Oral -- One time dose
- No fasting

Niclosamide

Examples

vm: YOMESAN -- largely abandoned in US vm.

hm: NICLOCIDE

Spectrum

CESTODES in dogs and cats

Contraindications

intestinal atony

acute diarrhea

Adverse effects

Chalky feces

Precautions / Comments

Overnight fast recommended

Dead tapeworms eliminated in stool within 6 to 48 hr.

Advantages

Can use safely in young puppies/kittens and in pregnant animals

Relatively safe and efficacious

Disadvantages

Not always satisfactory against Dipylidium

Bunamidine

Note: Largely abandoned in veterinary medicine

Examples

vm: SCOLOBAN

Spectrum

Common CESTODES, including Echinococcus

Contraindications

Hepatic or Cardiac disease

Severely debilitated animals

Male breeding dogs -- not within 28 days of breeding

Highly excitable animals

Concurrent use of BUTAMISOLE [STYQUIN]

Adverse effects -- Not uncommon

Emesis and Diarrhea

Depression (up to 36 hours)

Irritation of mucous membranes of conjunctiva

Transient mild effect on spermatogenesis (?)

Mild transient changes in ECG at excessive doses

Sudden death

Precautions / Comments

Fasting 3 hr before and after treatment

Safe during pregnancy

Do not break tablets near eyes or crush in feed or liquid -- extreme irritation to mucous membranes

Fright or flight response and associated release of catecholamines may sensitize heart to bunamidine causing sudden death of animal upon injection.

For maximum efficacy vs Echinococcus give twice at 48-hr interval.

Advantages

Effective

Disadvantages

Adverse effects can be severe

Possibility of drug interaction

Must observe precautions or may have severe problem

References

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Last modified 10:52 PM on 4/25/96 GLC