



METRICYCLIN

INTRAUTERINE BOLUS



One bolus contains 1000 mg chlortetracycline hydrochloride

Pharmacokinetics

Mean chlortetracycline concentration in the lochia remains above 32 µg/ml for at least 24 hours. For most bacteria involved in uterine infection, the MIC is about 0.125 - 2.0 µg/ml. Following administration, chlortetracycline and 4-epi-chlortetracycline are found in the urine and milk, indicating some resorption from the uterus.

Resistance

Chromosomal resistance to chlortetracyclines occurs stepwise. Resistance to tetracyclines is generally spread throughout Gram-positive as well as Gram-negative bacteria, because the resistance genes are carried by mobile chromosomal elements. Most important resistance mechanisms involve efflux pumps and ribosomal protection proteins, but also inactivating enzymes or reduced membrane permeability may be the reason. Between the classic tetracyclines there is cross-resistance.

Indications

Treatment of acute puerperal uterine infections caused by chlortetracycline sensitive germs.

Reference

GUARD C., Retained placenta: Causes and treatments, Advances in Dairy Technology (1999) Volume 11, page 81 - 86.

Retained Placenta

The failure to pass all or part of the placenta from the uterus within 24 h of calving is the main reason for uterine infections in cattle.

Potential causes are dystocia, milk fever and twin births, but also subclinical hypocalcemia and Selenium/Vitamin E shortage may be involved.

In herds with good management retained placenta will occur following approximately 15% of the calvings. Induced parturition with corticosteroids, PGF₂-α or both, usually leads to a retained placenta incidence of about 75%.

Placental foetal cotyledons fit in the maternal caruncle like a finger-in-glove. At parturition, enzymes will weaken this mechanical link while uterine contractions and shrinking of the cotyledons will allow the placenta to slip from the caruncle.

Due to mechanical events, inflammatory events and delayed delivery, oedema in the caruncle and cotyledon will lock the placenta into the uterus. This grip will persist until necrosis of the placenta allows it to detach. Some bacteria hasten the necrosis and may lead to systemic illness of the cow.

Treatment of retained placenta

- Manual removal of the membranes
- Hormonal therapy: PGF₂α, oxytocin or calcium immediately post partum have shown low efficacy in prevention or hastening of the separation and expulsion of retrained membranes.
- Anti-infective therapy: Intrauterine antibiotics with high activity against *E. coli* and systemic antibiotics when rectal T° ≥ 39.5°C within the first 10 days post calving.

Dosage

For intrauterine administration shortly after calving.

Prophylactic:

1 bolus METRICYCLIN

Therapeutic:

1-2 boluses METRICYCLIN

Tolerance

Absorption from the uterus is limited so that systemic effects are unlikely after intra-uterine administration.

Withdrawal periods

Milk: 2 milkings or 24 h following the last treatment.

Meat: 7 days.

**RESTRICTED VETERINARY MEDICINE
KEEP OUT OF REACH OF CHILDREN
FOR ANIMAL TREATMENT ONLY**

METRICYCLIN

ACTIVE INGREDIENT

CHLORTETRACYCLINE HYDROCHLORIDE 103 g/kg
(Each bolus contains 1000 mg chlortetracycline hydrochloride)

PHARMACODYNAMIC PROPERTIES

Chlortetracycline is a broad spectrum antibiotic, belonging to the group of tetracyclines.
It is active against many Gram-positive and Gram-negative bacilli and cocci (e.g. streptococci, staphylococci, *Corynebacterium spp.*, *Clostridium spp.*, *Brucella spp.*, no spore-forming anaerobes, some coliforms and salmonellae), spirochaetes, mycoplasma and ureaplasma and Chlamydia.

INDICATIONS

Prophylactic and therapeutic treatment of puerperal infections caused by chlortetracycline-sensitive micro-organisms in cattle.

Chlortetracycline boluses are intended for the prevention and treatment of uterine infections in cattle.
High local antibiotic concentrations are attained in the uterus. Absorption from the uterus is limited so that no systemic toxic effects are likely to occur after intrauterine administration.

DOSAGE AND ADMINISTRATION

For intra-uterine administration shortly after calving.

Prophylactic: 1 bolus

Therapeutic: 1-2 boluses

WITHHOLDING PERIODS

It is an offence for users of this product to cause residues exceeding the relevant MRL in the New Zealand (Maximum Residues Limits of Agricultural Compounds) Food Standards.

Milk: Milk intended for sale for human consumption must be discarded during treatment and for not less than 2 milkings or approximately 24 hours following the last treatment.

Meat: Animals Producing Meat or offal for human consumption must not be sold for slaughter either during treatment or within 7 days of the last treatment.

SPECIAL PRECAUTIONS

Dangerous to the Environment.

Handling Precautions:

May cause skin and eye irritation.
Avoid skin and eye contact.

KEEP OUT OF REACH OF CHILDREN

First Aid:

If skin or hair contact occurs remove contaminated clothing and flush skin and hair with running water. If splashed in eyes wash out immediately with water. Remove contact lenses, if present and continue rinsing.
For advice, contact the National Poisons Centre 0800 POISON (0800 764766) or a doctor immediately.

Environmental Protection:

Very toxic to aquatic organisms.
Avoid contamination of any water supply with product or empty container.

Disposal:

Preferably dispose of product by use.
Otherwise dispose of product, packaging and waste at an approved landfill or equivalent facility.

STORAGE CONDITIONS

Store at room temperature (25° C).
Protect from light.

REGISTRANT/NEW ZEALAND AGENT

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