DOXITIL®
Water-soluble powder for oral administration

Descrition
Light yellow water-soluble powder.
Composition
1 g of the drug contains:
active ingredients: doxycycline (in form of doxycycline hydrochloride) – 100 mg; tylosin (in form of tylosin tartrate) – 100 mg; ascorbic acid – 100 mg;
excipient – glucose.
Pharmacological properties
ATCvet: QJ01. Antibacterials for systemic use. ***QJ01RA90***. Tetracyclines, combinations with other antibacterials.
Doxycycline is a bacteriostatic broad-spectrum antibiotic, which belongs to the tetracycline group. It is effective against gram-positive and gram-negative bacteria (*Staphylococcus spp., Streptococcus spp., Bacillus anthracis, Clostridium spp., Listeria spp., Actinomyces spp., Klebsiella spp., Shigella spp., Yersinia spp., Bordetella spp., Campylobacter spp., E. coli, Haemophilus spp., Pasteurella spp., Salmonella spp.*) as well as chlamydia (*Chlamydia spp.),* mycoplasma (*Mycoplasma spp.)* and rickettsia (*Rickettsia spp*.). Its mechanism of action is related to inhibition of synthesis of proteins of microbial cell through binding of receptors of ribosomal 30S subunit of microorganisms. Doxycycline blocks attachment of aminoacyl tRNA to acceptor site preventing new amino acids from attachment to peptide chain and thus preventing synthesis of microbial proteins.
Tylosin is an antibiotic of the macrolide group. It mostly acts upon gram-positive and certain gram-negative bacteria (*Campylobacter spp., Pasteurella spp., Staphylococcus spp., Streptococcus spp., Treponema spp.*) as well as large viruses. It demonstrates strong therapeutic effect upon *Mycoplasma spp.* The mechanism of action consists in binding with ribosomal 50S subunit of microbial cell, preventing translocation of peptides and thus inhibiting synthesis of proteins.
Ascorbic acid, which is one of the ingredients of the drug, makes up the deficiency of vitamin C in the body during infection processes.
Doxycycline penetrates well into lungs, hence, it is effective in treatment of respiratory infections. If administered orally, doxycycline is well absorbed from digestive tract and reaches peak concentration in blood serum in 2 hours. If there is any feed in digestive tract, it does not significantly influence the drug absorption. Bioavailability of doxycycline after oral administration makes 50-80%. Doxycycline is well dissolved in lipids, so it is well distributed in most tissues. Doxycycline is not considerably biotransformed before excretion. Half-life in calves makes 9.8 hours, in cows – 14.2 hours, in chickens – 4.8 hours, in swine – 3.9 hours. Doxycycline, unlike other tetracyclines, is released to digestive tract in large quantities and inactivated. Out of 90% of the substance 16% eliminates with urine, <5% - with bile, the rest is excreted intestinally.
Maximum concentration of tylosin in blood serum after oral administration is reached in 2 hours. Due to the very high lipid dissolubility tylosin is widely distributed in the body and concentrations of the drug in tissues may significantly exceed concentrations in blood serum for 2-36 hours after administration of the drug. Tylosin is mostly eliminated from the body with bile (68%) and urine (24%), partially – with feces.
Ascorbic acid is well absorbed after oral administration, nevertheless, its quantity decreases proportionally according to the dose. Ascorbic acid is widely distributed in the body tissues. Its maximum concentrations may be found in liver, leukocytes, thrombocytes, endocrine glands. About 25% of ascorbic acid binds to proteins in plasma. It crosses the placental barrier well and is found in milk. Its half-life in plasma makes 16 days, but in case of excessive quantity may be reduced to several hours. Renal threshold makes about 14 μg/ml for ascorbic acid, but this level may be reduced individually. In case of excessive threshold concentrations of vitamin C in blood the ascorbic acid is eliminated from the body renally. On the contrary – in case of deficiency there is no elimination with urine. Non-reactive metabolites (ascorbic acid-2-sulfate and oxalic acid) are eliminated with urine.
Administration
Treatment of poultry (broiler chickens, breeding hens, replacement chickens), piglets and calves (of up to 3 months of age) against diseases of respiratory organs and digestive tract caused by doxycycline- and

tylosin-sensitive microorganisms.

Dosage

Administer orally with drinking water in the following doses:

- ***calves (up to 3 months of age):*** 5 g per 100 kg bw twice daily for 3-5 days;
- ***piglets (up to 3 months of age), poultry (broiler chickens, breeding hens, replacement chickens):*** 1 kg per 1,000 l of drinking water for 3-5 days.

Conraindications

Do not administer to animals with hypersensitivity to doxycycline and tylosin, to animals with liver and kidney injuries. Do not prescribe in combination with penicillins, cephalosporins, quinolones and cycloserines. Do not administer to bovines with functionally developed proventriculi and hens laying eggs for human consumption.

Precautions

Animal slaughter for meat is possible: calves – in 14, piglets – in 8 and poultry – in 7 days following the last administration. Meat and milk obtained before the mentioned term shall be utilized or fed to non-productive animals depending on the statement of veterinary physician.

Do not prescribe Doxitil® in sub-therapeutic doses. Allergic reactions are possible. Doxycycline, which is one of the ingredients of the drug, may cause structural changes in liver and kidneys, diarrhea.

The drug solution must be the only source of water throughout the treatment period.

Packaging

Packages of film or foil materials of 1,000 g.

Storage

Store in a dark dry place out of the reach of children at 5-30 C.

Shelf life

2 years.

24 hours after dissolution in water.