NAWACIN-100 (PVP) Injection

(Oxytetracycline HCl)

نواسن-۱۰۰ (پی وی پی) انجکشن

۵۰ ملی لیٹر اور ۱۰۰ ملی لیٹر

50ml & 100ml Injection

1. NAME OF THE VETERINARY MEDICINAL PRODUCT

NAWACIN 100 solution for injection for cattle, sheep, horses.

2. QUALITATIVE AND QUANTITATIVE COMPOSITION

Each ml contains:
Active substance:
Oxytetracycline100 mg (as Oxytetracycline hydrochloride)
(USP Specification)

4. CLINICAL PARTICULARS

4.1 Target species

Cattle, Buffalo, sheep, Goat, horses & Camel

4.2 Indications for use, specifying the target species

For the treatment of infections caused by organisms susceptible to oxytetracycline in horses, Camel, cattle, buffalo, sheep & Goat.

4.3 Contraindications

Do not use in cases of hypersensitivity to the active substance or to any of the excipients.
Do not use in horses during concomitant corticosteroid therapy.

4.4 Special warnings for each target species

None.

4.5 Special precautions for use

Special precautions for use in animals

Use of the veterinary medicinal product should be based on identification and susceptibility testing of target pathogen. If this is not possible, therapy should be based on epidemiological information and knowledge of susceptibility of the target pathogens at farm level, or at local/regional level.

Use of the veterinary medicinal product should be in accordance with official, national and regional antimicrobial policies.
Use of the veterinary medicinal product deviating from the instructions given in the SPC may increase the prevalence of bacteria resistant to oxytetracycline and may decrease the effectiveness of treatment with other tetracyclines due to the potential for cross-resistance.

The veterinary medicinal product should be used cautiously in animals with hepatic or renal impairment.
Use with caution in horses with gastro-intestinal disturbances or under stress. before use in male animals.
Do not dilute the veterinary medicinal product.
If concurrent treatment is administered, use a separate injection site.

Special precautions to be taken by the person administering the veterinary medicinal product to animals
This product may cause sensitisation, skin and eye irritation.
People with known hypersensitivity to tetracyclines, such as oxytetracycline, should avoid contact with the veterinary medicinal product.
Avoid contact of the skin and eyes with the product. In case of accidental spillage onto skin or eyes, rinse the affected area with large amounts of water.
Take care to avoid accidental injection. In case of accidental self-injection, seek medical advice immediately and show the package leaflet or the label to the physician.
Wash hands after use.

Special precautions for the protection of the environment: Not applicable.

Other precautions:
Not applicable.

4.6 Adverse reactions (frequency and seriousness)

Cattle, Buffalo, sheep, Goat, horses & Camel

Rare (1 to 10 animals / 10,000 animals treated):	Hepatic toxicosis; Blood dyscrasia.
Very rare (<1 animal / 10,000 animals treated, including isolated reports):	Hypersensitivity reaction a; Application site skin change.
Undetermined frequency	Discoloured teeth and bones b; Photosensitivity.

Horses:

Very rare (<1 animal / 10,000 animals treated, including isolated reports):	Enteritisc

[a]Hypersensitivity (allergic) reactions to treatment may occur, which may require appropriate symptomatic treatment;
[b]Oxytetracycline given to young animals can cause a yellow, brown or grey discolouration of bones and teeth. High dose or chronic administration may delay bone growth or healing;
Reporting adverse events is important. It allows continuous safety monitoring of a veterinary medicinal product. Reports should be sent, preferably via a veterinarian, to either the marketing authorisation holder or its local representative or the national competent authority via the national reporting system. See package leaflet for respective contact details.

4.7 Use during pregnancy, lactation or lay

Pregnancy and lactation:
Laboratory studies have not produced any evidence of embryotoxic or teratogenic effects. However, use only according to the benefit-risk assessment by the responsible veterinarian.
The product can be safely administered to lactating animals.
The active substance, oxytetracycline, readily crosses the placenta and concentrations in the foetal blood may reach those of the maternal circulation, although the concentration is usually somewhat lower. Tetracyclines are deposited in teeth, causing discolouration, enamel hypoplasia and reduced mineralization.
Tetracyclines can also retard fetal skeletal development. As such, the veterinary medicinal product should only be used in the last half of pregnancy following risk benefit assessment by the responsible veterinarian.
Oxytetracycline is excreted in milk; concentrations are generally low.

Fertility:
Parenteral use of tetracyclines may alter fertility in the male.

4.8 Interaction with other medicinal products and other forms of interaction

Oxytetracycline should not be administered simultaneously with bactericidal antimicrobials, such as penicillin and cephalosporins. Divalent or trivalent cations (Mg, Fe, Al, Ca) can chelate tetracyclines.

4.9 Amount(s) to be administered and administration route

DD: dual dosage scheme
The veterinary medicinal product can be administered either every 24 hours at a low dose rate, or at a higher dose rate for prolonged duration of action. To avoid excessive residues at the injection site, maximum injection volumes per injection site are applicable.

Cattle, Buffalo, sheep, Goat, horses & Camel
: Intramuscular or Subcutaneous use.

To ensure a correct dosage, body weight should be determined as accurately as possible to avoid underdosing.

24 hourly dosage regimen:
Dose rate: 3 – 10 mg/kg body weight depending on age and species (see table).
The treatment may be repeated at 24 hour intervals for 3 to 5 consecutive days.
Subcutaneous injections must be given slowly over a period of at least one minute.

Prolonged action dosage regimen:
Dose rate: 10 or 20 mg/kg body weight depending on age and species (see table). Route of administration: Intramuscular injection only, repeated once after 48 – 60 hours if required.s

This dosage regimen is not recommended for use in horses or animals producing milk for human consumption.

Treatment and metaphylaxis of enzootic abortion in sheep:

Dose rate: 20 mg/kg body weight administered between day 95 – 100 of gestation. A further treatment may be given 2 – 3 weeks later.

For metaphylaxis, the presence of the disease in the group must be established before the product is used.

Clean and disinfect the injection site before administration.

Repeat doses should be administered at different sites, and the sites massaged well after injection.

The maximal volume to be administered per injection site is 20 mL for adult cattle and horses, 10 mL for calves and sheep. If larger volumes are required, the injection volumes should be divided over different injection sites.

Animal	Body Weight (kg)	24 hourly dose		Prolonged action dose	
		Dose (mg/kg)	Volume (ml)	Dose (mg/kg)	Volume (ml)
Horse & Camel	500	5	25	Not recommended	-
Foal	100	10	10	Not recommended	-
Cow & Buffalo	500	3	15	10	50
Calf	100	8	8	20	20
Sheep & Goat	50	8	4	20	10
Lamb	25	8	2	20	5

The 20 ml and 50 ml vials should not be broached more than 40 times; the 100 ml and 250 ml vials should not be broached more than 20 times.

The user should select the most appropriate vial size according to the target species to be treated.

4.10 Overdose (symptoms, emergency procedures, antidotes), if necessary

Oxytetracycline has a low toxicity, but is an irritant substance. Overdose should be avoided, particularly in horses.

There is no known specific antidote, if signs of possible overdose occur treat the animal symptomatically.

4.11 Withdrawal period(s)

Withdrawal period:

24-hour dosage regimen

Cattle & Buffalo: i.m. use
Meat and offal 35 days
Milk 72 hours

Sheep & Goat:
Meat and offal 53 days
120 hours

Horses & Camel:
Meat and offal 6 months
Not authorized for use in horses producing milk for human consumption.

Prolonged action dosage regimen
Cattle, Buffalo: i.m. use
Meat and offal 35 days

Sheep & Goat:
Meat and offal 18 days

The prolonged dosage regimen is not authorized for use in animals producing milk for human consumption.

5. PHARMACOLOGICAL PROPERTIES

Pharmacotherapeutic group: Antibacterial for systemic use, tetracyclines

5.1 Pharmacodynamic properties

Oxytetracycline is a bacteriostatic antibiotic that inhibits protein synthesis in susceptible bacteria. Inside the cell it binds irreversibly to receptors on the 30S subunit of the bacterial ribosome where it interferes with the binding of the aminoacyl transfer RNA to the acceptor site on the messenger RNA ribosome complex. This effectively prevents the addition of amino acids to the elongating peptide chain, inhibiting protein synthesis. Oxytetracycline is a bacteriostatic antibiotic which has broad spectrum antibacterial activity against both Gram-positive and Gram-negative bacteria.

Multiple genes have been identified which mediate resistance to tetracyclines and these genes may be carried on plasmids or transposons between both pathogenic
and non-pathogenic bacteria. The most common mechanisms of resistance involve either the removal of the antibiotic from the organism by energy dependent efflux pumps or protection of the ribosome from binding by altered target sites. Resistance to one tetracycline confers cross-resistance across the whole group.

In vitro, oxytetracycline is active against a range of both Gram-positive and Gramnegative microorganisms including: Streptococcus spp., Staphylococcus spp., Listeria monocytogenes, Mannheimia haemolytica, Haemophilus parahaemolyticus and Bordetella bronchiseptica, and against Chlamydophila abortus, the causative organism of enzootic abortion in sheep.

The MIC of Oxytetracycline against some of the target bacteria are reported in the following table (source: VetPath 2015-2016, CLSI 2017-2018; ComPath 2013-2014, CLSI 2013-2015):

Species	Pathogen (number of isolates)	MIC 50 µg/ml	MIC 90 µg/ml	Resistance% (CLSI breakpoints µg/ml)
Cattle	*Pasteurella multocida* (155)	0.5	8	11.6 (≥8)
	Mannheimia haemolitica (91)	0.5	16	17.6 (≥8)
Horses	*Streptococcus Zooepidemicus (164)*	-	-	<74
	Streptococcus equi (26)	-	-	<20
	Actinobacillus equuli (28)	-	-	<14
	Staphilococccus aureus (70)	-	-	<34

- = not available

5.2 Pharmacokinetic particulars

Oxytetracycline is widely distributed in the body with the exception of CSF and it binds to plasma proteins in a variable manner depending on the species (20-40%).

Oxytetracycline is excreted mainly unchanged via the renal route, some in faeces and milk. It is also excreted by the bile but a high proportion of Oxytetracycline is reabsorbed by the small intestine (enterohepatic cycle).

5.3 Environmental properties

Oxytetracycline is very persistent in soil.

6. PHARMACEUTICAL PARTICULARS

6.2 Major incompatibilities

In the absence of compatibility studies, this veterinary medicinal product must not be mixed with other veterinary medicinal products.

6.3 Shelf life

Shelf life of the veterinary medicinal product as packaged for sale: 2 years. Shelf life after first opening the immediate packaging: 28 days.

6.4 Special precautions for storage

Store below 30°C in a cool, dry place.
Protect from light & Heat.
Keep out of reach of children

6.5. Nature and Composition of Immediate Packaging

Packed in Glass vials

6.6 Special precautions for the disposal of unused veterinary medicinal product or waste materials derived from the use of such products

Medicines should not be disposed of via wastewater.

Use take-back schemes for the disposal of any unused veterinary medicinal product or waste materials derived thereof in accordance with local requirements and with any national collection systems applicable to the veterinary medicinal product concerned.

MANUFACTURED BY:
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