**Anti-inflammatory Drugs**

**Phenylbutazone 20% injection**

1 mL contains: Phenylbutazone 200mg.

**Indications:**

Control of inflammation and associated pain of the musculoskeletal system (e.g. artritis,tendinitis, muscular strains, myositis, etc.) and (soft tissues e.g. wounds, fractures, bruising).

**Contra indications**

The therapeutic index of phenylbutazone is low. Do not exceed the stated dose or the duration of treatment.
Do not administer with other NSAIDs concurrently or within 24 hours of each other.
Do not use in animals suffering from cardiac, hepatic or renal disease; where there is the possibility of gastrointestinal ulceration or bleeding; where there is evidence of blood dyscrasias or hypersensitivity to the product.
Use during pregnancy should be avoided whenever possible, particularly during the first trimester.

**Side effects**

Non-steroidal anti-inflammatory drugs can cause inhibition of phagocytosis and hence in the treatment of inflammatory conditions associated with bacterial infection, appropriate concurrent antimicrobial therapy should be instigated.
There is a risk of irritancy if the injection is accidentally inoculated under the skin during intravenous administration.
Rarely, collapse following intravenous injection has been reported. The product should be injected slowly over as long a period as is reasonably practical. At the first signs of intolerance, the administration of the injection should be interrupted.
Some non-steroidal anti-inflammatory agents may be highly bound to plasma proteins and compete with other highly bound drugs to produce an increase in non-bound pharmacologically active concentrations which can lead to toxic effects.
Gastrointestinal tract ulceration may be exacerbated by corticosteroids in animals given nonsteroidal anti-inflammatory drugs.
Concurrent administration of potential nephrotoxic drugs (e.g. aminoglycoside antibiotics) should be avoided.

**Dosage and Administration:**

Horses: 1ml/50kg/day I.V. (max 5 days)

Cattle: Initial dose : 1ml/25kg. Maintain dose: 1ml/50-70kg/day or every 2 days I.V. or I.M. (max 5 days)

Pigs: 1ml/50 kg/day I.M.

Dogs: 1ml/16kg every 12 hours I.V. (max 2 days)

**Withdrawal times:** Milk; 4 days

 Slaughter: Cattle, Pigs; 15 days

 Horse: 7 days

Store in a cool dry place.

**Dexakel 0,2%**

For I.M., S.C., I.V. and Intra-articular injection.

**COMPOSITION**

Dexamethasone sodium phosphate eq. 2 mg dexamethasone - Excipients up to 1 ml

**TARGET SPECIES**

Horses, cattle, sheep, goats, dogs, cats

**INDICATIONS**

**Dexamethasone** is a very potent synthetic glucocorticosteroid, its anti-inflammatory effects being  7-10 times stronger than those of prednisolone. and 30 times stronger than those of cortisone. In addition to its antiphlogistic properties, dexamethasone also shows extraordinary anti-allergic, anti-stress and gluconeogenetic activities. Mineralcorticoid activity is minimal.

**For the treatment of :**Metabolic disorders such as: ketosis in cattle and puerperal toxaemia in ewes and sows.
Non-infectious inflammatory processes, especially acute musculoskeletal inflammations such as: arthritis, periarthritis, tendovaginitis, bursitis, luxations, myositis, osselets and sprains.
As an aid in acute infectious diseases (e.g. acute mastitis, metritis, pneumonia, polyarthritis in calves) in combination with suitable anti-infectious therapy.
Allergic conditions, e.g. asthma, allergic skin affections (eczema, urticaria, pruritis, ...), snake-bites.
Stress- and shock conditions.
Induction of parturition in ruminants during the last stage of pregnancy (delivery within 2-4 days).

**Doseage:**

Cattle, Horses : 5-10 ml/400kg b.w.

Sheep, Goats, Calves ; 1-2 ml/50kg b.w.

Cats, Dogs : 0.25 – 0.5 ml/5 kg b.w.

If necessary repeat with intervals of 2 days (dogs,cats) and 3-4 days (other animals)

Withdrawal times: Milk: 2 days

 Slaughter: 14 days

**Banamine (Flunixin meglumine)**

**Overview**

Banamine brand of flunixin meglumine is the pioneer injectable nonsteroidal anti-inflammatory drug approved for cattle and horses in the United States.

Banamine reduces the fever and lung inflammation that typically accompany bovine respiratory disease (BRD). With Banamine as part of a BRD treatment program, cattle feel better fast. Cattle pulled for BRD and treated with Banamine (flunixin meglumine) in addition to an antibiotic visited the feed bunk more frequently (P < 0.10), spent more time at the feed bunk (P < 0.05), and had significantly reduced rectal temperature during a 12-hour period post-treatment than cattle treated with an antibiotic alone. They also have reduced lung inflammation and fewer lung lesions than cattle treated with conventional therapies.1

Each milliliter of BANAMINE Injectable Solution contains flunixin meglumine equivalent to 50mg flunixin, 0.1mg edetate disodium, 2.5mg sodium formaldehyde sulfoxylate, 4.0mg diethanolamine, 207.2mg propylene glycol; 5.0mg phenol as preservative, hydrochloric acid, water for injection qs.

**Safety**

Horse: A three-fold intramuscular dose of 1.5mg/lb of body weight daily for 10 consecutive days was safe. No changes were observed in hematology, serum chemistry, or urinalysis values. Intravenous dosages of 0.5mg/lb daily for 15 days; 1.5mg/lb daily for 10 days; and 2.5mg/lb daily for five days produced no changes in blood or urine parameters. No injection site irritation was observed following intramuscular injection of the 0.5mg/lb recommended dose. Some irritation was observed following a three-fold dose administered intramuscularly.

Cattle: No flunixin-related changes (adverse reactions) were noted in cattle administered a 1X (2.2mg/kg; 1.0mg/lb) dose for nine days (three times the maximum clinical duration). Minimal toxicity manifested itself at moderately elevated doses (3X and 5X) when flunixin was administered daily for nine days, with occasional findings of blood in the feces and/or urine. Discontinue use if hematuria or fecal blood are observed.

**Indications**

Horse: BANAMINE Injectable Solution is recommended for the alleviation of inflammation and pain associated with musculoskeletal disorders in the horse. It is also recommended for the alleviation of visceral pain associated with colic in the horse.

Cattle: BANAMINE Injectable Solution is indicated for the control of pyrexia associated with bovine respiratory disease, endotoxemia and acute bovine mastitis. BANAMINE Injectable Solution is also indicated for the control of inflammation in endotoxemia.

**Administration and Dosage**

Horse: The recommended dose for musculoskeletal disorders is 0.5mg per pound (1 mL/100 lbs) of body weight once daily. Treatment may be given by intravenous or intramuscular injection and repeated for up to five days. Studies show onset of activity within two hours. Peak response occurs between 12 and 16 hours and duration of activity is 24 to 36 hours.

The recommended dose for the alleviation of pain associated with equine colic is 0.5mg per pound of body weight. Intravenous administration is recommended for prompt relief. Clinical studies show pain is alleviated in less than 15 minutes in many cases. Treatment may be repeated when signs of colic recur. During clinical studies approximately 10% of the horses required one or two additional treatments. The cause of colic should be determined and treated with concomitant therapy.

Cattle: The recommended dose for cattle for control of pyrexia associated with bovine respiratory disease and endotoxemia and control of inflammation in endotoxemia is 1.1 to 2.2mg/kg (0.5 to 1mg/lb; 1 to 2 mL per 100 lbs) of body weight given by slow intravenous administration either once a day as a single dose or divided into two doses administered at 12-hour intervals for up to three days. The total daily dose should not exceed 2.2mg/kg (1.0mg/lb) of body weight. Avoid rapid intravenous administration of the drug.

The recommended dose for acute bovine mastitis is 2.2mg/kg (1mg/lb: 2 mL per 100 lbs) of body weight given once by intravenous administration.

**Precautions**

As a class, cyclo-oxygenase inhibitory NSAIDs may be associated with gastrointestinal and renal toxicity. Sensitivity to drug-associated adverse effects varies with the individual patient. Patients at greatest risk for renal toxicity are those that are dehydrated, on concomitant diuretic therapy, or those with renal, cardiovascular, and/or hepatic dysfunction.

Since many NSAID's possess the potential to induce gastrointestinal ulceration, concomitant use of BANAMINE Injectable Solution with other anti-inflammatory drugs, such as other NSAIDs and corticosteroids, should be avoided or closely monitored.

Horse: The effect of BANAMINE Injectable Solution on pregnancy has not been determined. Studies to determine activity of BANAMINE Injectable Solution when administered concomitantly with other drugs have not been conducted. Drug compatibility should be monitored closely in patients requiring adjunctive therapy.

Cattle: Do not use in bulls intended for breeding, as reproductive effects of BANAMINE Injectable Solution in these classes of cattle have not been investigated. NSAIDs are known to have potential effects on both parturition and the estrous cycle. There may be a delay in the onset of estrus if flunixin is administered during the prostaglandin phase of the estrous cycle. NSAIDs are known to have the potential to delay parturition through a tocolytic effect. Do not exceed the recommended dose.

Not intended for dry dairy cows, veal calves or horses intended for human consumption.

Withdrawal time: Milk: 36 hours

 Meat: 4 days

**References**

1. <https://www.interchemie.com/veterinary-medicines/phenylject.html>
2. <https://www.merck-animal-health-usa.com/product/cattle/Banamine-Injectable-Solution/1>