

## **SUMMARY OF PRODUCT CHARACTERISTICS**

### **1. NAME OF THE VETERINARY MEDICINAL PRODUCT**

Procamidor Duo 40 mg/ml + 0.036 mg/ml solution for injection

### **2. QUALITATIVE AND QUANTITATIVE COMPOSITION**

Each ml contains:

#### **Active substances:**

Procaine hydrochloride            40 mg  
(equivalent to 34.65 mg procaine)  
Adrenaline tartrate                0.036 mg  
(equivalent to 0.02 mg adrenaline)

#### **Excipients:**

Sodium methyl parahydroxybenzoate (E219)    1.14 mg  
Sodium metabisulfite (E223)                    1 mg

For the full list of excipients, see section 6.1.

### **3. PHARMACEUTICAL FORM**

Solution for injection

Clear, colourless to almost colourless solution, free of visible particles

### **4. CLINICAL PARTICULARS**

#### **4.1 Target species**

Horses, cattle, pigs and sheep.

#### **4.2 Indications for use, specifying the target species**

Local anaesthesia with an anaesthetic effect of 1 – 2 hours.

- Infiltration anaesthesia
- Perineural anaesthesia

### **4.3 Contraindications**

Do not use in:

- conditions of shock
- in animals with cardiovascular diseases
- in animals under treatment with sulphonamides
- in animals treated with phenothiazines (see also section 4.8)

Do not use in cases of hypersensitivity to local anaesthetics belonging to the esters subgroup or in case of possible allergic cross reactions to p-aminobenzoic acid and sulphonamides.

Do not administer by the intravenous or the intra-articular route.

Do not use to anaesthetise regions with terminal circulation (e.g. ears, tail, penis, etc.), owing to the risk of tissue necrosis following complete circulatory arrest, due to the presence of adrenaline (a vasoconstrictor).

Do not use with cyclopropane- or halothane-based anaesthetics (see also section 4.8).

### **4.4 Special warnings for each target species**

None.

### **4.5 Special precautions for use**

#### Special precautions for use in animals

To avoid inadvertent intravenous administration, correct placement of the needle should be verified by aspiration.

Due to local tissue damage wounds or abscesses may be difficult to anaesthetise using local anaesthetics.

Perform local anaesthesia at ambient temperature. At higher temperatures, the risk of toxic reactions is higher owing to the greater absorption of procaine.

As with other local anaesthetics containing procaine, the product should be used with caution in animals with epilepsy, cardiac conduction disturbances, bradycardia, hypovolaemic shock or with changes in respiratory or renal function.

When injected near to wound edges, the product may lead to necrosis along the edges.

The product should be used with caution in lower limb blocks due to the risk of digital ischaemia.

Use with caution in horses due to risk of coat colour at the site of injection turning permanently white.

Special precautions to be taken by the person administering the veterinary medicinal product to animals

People with known hypersensitivity to adrenaline, procaine or other local anaesthetics of the ester group as well as derivatives of p-aminobenzoic acid and sulphonamides should avoid contact with the product.

This product may be irritant to the skin, eyes and oral mucosa. Avoid contact with the skin, eyes and oral mucosa. Wash any splashes immediately with plenty of water.

Seek medical advice if irritation persists.

Accidental self-injection may result in cardiorespiratory and/or CNS effects. Care should be taken to avoid accidental self-injection. In case of accidental self-injection seek medical advice immediately and show the package leaflet or the label to the physician. Do not drive.

Wash hands after use.

#### **4.6 Adverse reactions (frequency and seriousness)**

Procaine can lead to hypotension. In a few cases, particularly in horses, phenomena of excitability to the CNS (agitation, tremors, convulsions) may be observed following the administration of procaine.

Allergic reactions to procaine are common; in rare cases anaphylactic reactions have been observed.

A hypersensitivity to local anaesthetics belonging to the esters subgroup is known. In exceptional cases, tachycardia may occur (adrenaline).

In case of inadvertent intravascular injection toxic reactions frequently appear. These manifest in an excitation of the central nervous system (restlessness, tremors, convulsions), followed by depression; death is the result of respiratory paralysis. In case of CNS excitation short acting barbiturates should be administered, as well as products for acidification of urine, so as to support renal excretion. In case of allergic reactions antihistaminics or corticoids can be given. Allergic shock is treated with adrenaline.

The frequency of adverse reactions is defined using the following convention:

- very common (more than 1 in 10 animals treated displaying adverse reaction(s))
- common (more than 1 but less than 10 animals in 100 animals treated)
- uncommon (more than 1 but less than 10 animals in 1,000 animals treated)
- rare (more than 1 but less than 10 animals in 10,000 animals treated)
- very rare (less than 1 animal in 10,000 animals treated, including isolated reports).

#### **4.7 Use during pregnancy, lactation or lay**

The safety of the veterinary medicinal product has not been established during pregnancy and lactation in the target species. Use only according to the benefit-risk assessment by the responsible veterinarian during pregnancy, or lactation. Procaine crosses the placental barrier and is excreted in milk.

#### **4.8 Interaction with other medicinal products and other forms of interaction**

Procaine inhibits the action of the sulphonamides owing to biotransformation to p-aminobenzoic acid, a sulphonamide antagonist. Procaine prolongs the effect of muscle relaxants. Procaine increases the action of antiarrhythmics, e.g. procainamide.

Adrenaline potentiates the action of analgesic anaesthetics on the heart.

Do not use with cyclopropane- or halothane-based anaesthetics, as they increase cardiac sensitivity to adrenaline (a sympathomimetic) and may cause arrhythmia. Do not administer with other sympathomimetic agents as increased toxicity may result.

Hypertension may result if adrenaline is used with oxytocic agents.

An increased risk of arrhythmias may occur if adrenaline is used concomitantly with digitalis glycoside (as digoxin).

Certain antihistaminics (as chlorpheniramine) may potentiate the effects of adrenaline.

Due to these interactions, the veterinarian may adjust the dosage and should carefully monitor the effects on the animal.

#### **4.9 Amounts to be administered and administration route**

For subcutaneous and perineural use.

For onset and duration of effect, please see section 5.1.

##### **1. Local anaesthesia or by infiltration**

Inject into the subcutis or around the area involved.

2.5 – 10 ml of the product/animal (i.e. 100 - 400 mg procaine hydrochloride + 0.09 - 0.36 mg adrenaline tartrate)

##### **2. Perineural anaesthesia**

Inject close to the branch of the nerve.

5 – 10 ml of the product/animal (i.e. 200 – 400 mg procaine hydrochloride + 0.18 - 0.36 mg adrenaline tartrate)

For lower limb blocks in horses, the dose should be divided between two or more injection sites depending on the dose. See also section 4.5.

The rubber stopper can be punctured a maximum of 25 times.

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

Symptoms related to overdose correlate with symptoms occurring after inadvertent intravascular injection as described in section 4.6.

#### **4.11 Withdrawal period(s)**

Cattle, sheep and horse:

Meat and offal: Zero days.

Milk: Zero hours.

Pig:

Meat and offal: Zero days.

### **5. PHARMACOLOGICAL PROPERTIES**

Pharmacotherapeutic group: anaesthetics, local; procaine, combinations.

ATC vet code: QN01BA52.

#### **5.1 Pharmacodynamic properties**

##### Procaine

Procaine is a synthetic locally acting anaesthetic of the ester type. Specifically it is an ester of paraaminobenzoic acid, which is seen as the lipophilic part of this molecule. Procaine stabilises the cell membrane, leading to a reduction in membrane permeability of nerve cells and thereby to a reduced diffusion of sodium and potassium ions. This disrupts the formation of action potentials and inhibits signal conduction. This inhibition leads to reversible local anaesthesia. Neuronal axons exhibit a variable responsiveness to local anaesthesia, which is determined by the thickness of the myelin sheaths: neuronal axons which are not covered in myelin sheaths are most responsive, and neuronal axons which are covered with a thin myelin sheath are anaesthetized more rapidly than neuronal axons with thick myelin sheaths.

The local anaesthetic effect of procaine sets in after 5 to 10 minutes. Duration of effect of procaine itself is short (max. 30 to 60 minutes); with the addition of adrenaline to the solution, the duration of action is prolonged up to 90 - 120 minutes. The onset of anaesthetic effect is also dependent upon the target species and the age of the animal.

Besides its local anaesthetic effect procaine also shows vasodilative and antihypertensive effects.

##### Adrenaline

Adrenaline is a catecholamine with sympathomimetic properties. It causes a local vasoconstriction which, slowing down absorption of procaine hydrochloride, prolongs the anaesthetic effect of procaine. The slow reabsorption of procaine decreases the risk of systemic toxic effects. Adrenaline also has a stimulant action on the myocardium.

## 5.2 Pharmacokinetic particulars

### Procaine

Following parenteral administration procaine is very rapidly absorbed into the bloodstream, especially due to its vasodilative properties. Amongst other factors absorption is also dependent upon vascularisation of the injection site. Its duration of effect is comparatively short, due to a rapid hydrolysis by serum cholinesterase. The addition of adrenaline, which has a vasoconstrictor action, slows down absorption, prolonging the local anaesthetic effect. Procaine shows only slight plasma protein binding (2 %).

Due to its relatively weak lipid solubility procaine shows only a weak penetration into tissues. It does however pass the blood-brain barrier and diffuses into foetal plasma. Procaine is rapidly and nearly completely hydrolysed into paraaminobenzoic acid and diethylaminoethanol by non-specific pseudocholinesterases, which occur naturally in plasma as well as in microsomal compartments of liver and other tissues.

Paraaminobenzoic acid, which inhibits the action of sulphonamides, is in turn conjugated with e.g. glucuronic acid and excreted via the renal pathway.

Diethylaminoethanol, which in itself is an active metabolite, is degraded in the liver.

The metabolism of procaine varies according to target species.

Procaine is rapidly and completely excreted via the renal route in form of its metabolites. Plasma half-life is short at 1 to 1.5 hours. Renal clearance depends upon the pH of urine: in acidic pH renal excretion is higher, in basic pH excretion is slower.

### Adrenaline

After parenteral administration, adrenaline is well absorbed, but slowly, owing to the vasoconstriction induced by the substance itself. It can only be found in small quantities in the blood, because it has already been reabsorbed by the tissues.

Adrenaline and its metabolites distribute rapidly to the different organs.

Adrenaline is transformed into inactive metabolites in the tissues and in the liver by monoamine oxidase (MAO) enzymes and catechol-O-methyltransferase (COMT).

The systemic activity of adrenaline is short, owing to the rapidity of its excretion, which takes place largely by the renal route in the form of inactive metabolites.

## 6. PHARMACEUTICAL PARTICULARS

### 6.1 List of excipients

Sodium methyl parahydroxybenzoate (E219)

Sodium metabisulfite (E223)

Disodium edetate

Sodium chloride

Hydrochloric acid (for pH adjustment)

Water for injections

### 6.2 Major incompatibilities

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

The solution is incompatible with alkaline products, tannic acid or metal ions.

### **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**

Do not store above 25 °C.  
Keep the vial in the outer carton in order to protect from light.

### **6.5 Nature and composition of immediate packaging**

Amber glass vial type II (Ph. Eur.) with coated or uncoated bromobutyl rubber stopper type I (Ph.Eur.) and aluminium cap in a cardboard box.

Cardboard box with 1 vial of 100 ml  
Cardboard box with 1 vial of 250 ml  
Cardboard box with 5 vials of 100 ml

Not all pack sizes may be marketed.

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

Any unused veterinary medicinal product or waste materials derived from such veterinary medicinal product should be disposed of in accordance with local requirements.

## **7. MARKETING AUTHORISATION HOLDER**

VetViva Richter GmbH  
Durisolstrasse 14  
4600 Wels  
Austria

## **8. MARKETING AUTHORISATION NUMBER**

Vm 57446/4013

## **9. DATE OF FIRST AUTHORISATION**

08 August 2019

**10. DATE OF REVISION OF THE TEXT**

December 2023

Approved 07 December 2023

A handwritten signature in black ink, appearing to read 'M. M. M.', located below the approval date.