# **Annex III**

# **Product information**

# Note:

This product information is the outcome of the referral procedure to which this Commission decision relates.

The product information may be subsequently updated by the Member State competent authorities, in liaison with the reference Member State, as appropriate, in accordance with the procedures laid down in Chapter 4 of Title III of Directive 2001/83/EC.

SUMMARY OF PRODUCT CHARACTERISTICS

#### 1. NAME OF THE MEDICINAL PRODUCT

{Scandonest and associated names (see Annex I) strength pharmaceutical form} [See Annex I - To be completed nationally]

# 2. QUALITATIVE AND QUANTITATIVE COMPOSITION

1 ml solution for injection contains 30 mg of mepivacaine hydrochloride.

Each cartridge of 1.7 ml of solution for injection contains 51 mg of mepivacaine hydrochloride. Each cartridge of 2.2 ml of solution for injection contains 66 mg of mepivacaine hydrochloride.

# Excipient(s) with known effect

Each ml contains 0.11 mmol of sodium (2.467 mg/ml).

For the full list of excipients, see section 6.1.

# 3. PHARMACEUTICAL FORM

Solution for injection. Clear and colourless solution.

PH: 6.1-6.7

#### 4. CLINICAL PARTICULARS

# 4.1 Therapeutic indications

{Scandonest and associated names (see Annex I) strength pharmaceutical form} is a local anaesthetic indicated for the local and loco-regional anaesthesia in dental surgery in adults, adolescents and children above 4 years of age (c.a. 20 kg of body weight).

# 4.2 Posology and method of administration

The medicinal product should only be used by or under the supervision of dentists, stomatologists or other clinicians sufficiently trained and familiar with diagnosis and treatment of systemic toxicity. The availability of appropriate resuscitation equipment and medication and adequately trained staff is recommended before induction of regional anaesthesia with local anaesthetics to enable prompt treatment of any respiratory and cardiovascular emergencies. The patient's state of consciousness should be monitored after each local anaesthetic injection.

# **Posology**

As the absence of pain is related to the patient individual sensibility, the lowest dose of anaesthetic leading to effective anaesthesia should be used. For more extensive procedures one or more cartridges may be required, without exceeding the maximum recommended dose.

For adults, the maximum recommended dose is of 4.4 mg/kg of body weight with an absolute maximum recommended dose of 300 mg for the individuals above 70 kg of body weight corresponding to 10 ml of solution.

Of note, the maximum quantity has to take into account the patient's body weight. As patients possess different body weights, each patient possess a different maximum allowed quantity of mepivacaine that can tolerate. Additionally, there are important individual variations with regards to the onset and duration of action.

The following table lists the maximum allowed doses in adults for the most commonly used anaesthetic techniques and the equivalent in number of cartridges:

Weight	Mepivacaine	Volume	Equivalent* in cartridge	Equivalent* in cartridge
(kg)	hydrochloride dose (mg)	(ml)	numbers (1.7 ml)	numbers (2.2 ml)
50	220	7.3	4.0	3.0
60	264	8.8	5.0	4.0
≥70	300	10.0	5.5	4.5

<sup>\*</sup> Rounded to the nearest half-cartridge

# Paediatric population

{Scandonest and associated names} is contraindicated in children below 4 years of age (ca. 20 kg body weight) (see section 4.3).

# Recommended therapeutic dose:

The quantity to be injected should be determined by the age and weight of the child and the magnitude of the operation. The average dosage is 0.75 mg/kg = 0.025 ml of mepivacaine solution per kg body weight:  $\sim \frac{1}{4}$  cartridge (15 mg of mepivacaine hydrochloride) for a 20 kg child.

#### Maximum recommended dosage:

The maximum recommended dose in pediatric population is 3 mg of mepivacaine/kg (0.1 ml mepivacaine/kg).

The following table lists the maximum allowed dose in children and the equivalent in number of cartdriges:

Weight	Mepivacaine	Volume	Equivalent* in cartridge	Equivalent* in cartridge
(kg)	hydrochloride dose (mg)	(ml)	numbers (1.7 ml)	numbers (2.2 ml)
20	60	2	1.2	0.9
35	105	3.5	2.0	1.5
45	135	4.5	2.5	2.0

<sup>\*</sup> Rounded to the nearest half-cartridge

#### Special populations

Due to the lack of clinical data, particular precaution should be used in order to administer the lowest dose leading to efficient anaesthesia in:

- elderly people,
- patients with renal or hepatic impairment.

Mepivacaine is metabolized by the liver and can lead to elevated plasma levels in patients with hepatic impairment, in particular after repeated use. In case a reinjection is required, patient should be monitored, to identify any sign of relative overdose.

Concomitant use of sedatives to reduce patient anxiety:

If sedative medication is administered, the maximum safe dose of mepivacaine may be reduced due to an additive effect of the combination on central nervous system depression (see section 4.5).

Method of administration Infiltration and perineural use For single use

Precautions to be taken before administering the medicinal product

The medicinal product should not be used if cloudy and discoloured.

The rate of injection should not exceed 1 ml of solution per minute.

Local anaesthetics should be injected with caution when there is inflammation and/or infection at the site of the injection. The injection rate shall be very slow (1 ml/min).

#### Risk associated with an accidental intravascular injection

Accidental intravascular injection (e.g.: inadvertent intravenous injection into the systemic circulation, inadvertent intravenous or intra-arterial injection in the head area and neck area) may be associated with severe adverse reactions, such as convulsions, followed by central nervous system or cardiorespiratory depression and coma, progressing ultimately to respiratory arrest, due to the sudden high level of mepivacaine in the systemic circulation.

Thus, to ensure that the needle does not penetrate a blood vessel during injection, aspiration should be performed before the local anaesthetic product is injected. However, the absence of blood in the syringe does not guarantee that intravascular injection has been avoided.

#### Risk associated with intraneural injection

Accidental intraneural injection may lead the drug to move in retrograde manner along the nerve. In order to avoid intraneural injection and to prevent nerve injuries in connection with nerve blockades, the needle should always be slightly withdrawn if electric shock sensation is felt by the patient during injection or if the injection is particularly painful. If needle nerve injuries occur, the neurotoxic effect could be aggravated by mepivacaine's potential chemical neurotoxicity as it may impair the perineural blood supply and prevent mepivacaine local wash-out.

#### 4.3 Contraindications

- Hypersensitivity to the active substance (or any local anaesthetics agent of the amide type) or to any of the excipients listed in section 6.1,
- Children below 4 years of age (ca. 20 kg body weight),
- Severe disorders of atrioventicular conduction not compensated by pace maker,
- Poorly controlled epileptic patient.

# 4.4 Special warnings and precautions for use

# Special warnings

If there is any risk of an allergic reaction, choose different medicine for anaesthesia (see Section 4.3).

Mepivacaine must be used safely and effectively under appropriate conditions:

The local anaesthetic effects may be reduced when {Scandonest and associated names} is injected into an inflamed or infected area.

Risk of biting trauma (lips, cheeks, mucosa, and tongue) exists, especially in children; the patient should be told to avoid chewing gum or eating until normal sensation is restored.

Mepivacaine must be used with caution in:

Patients with cardiovascular disorders:

- Peripheral vascular disease,
- Arrhythmias particularly of ventricular origin,
- Atrio-ventricular conduction disorders,
- Heart failure.

#### - Hypotension.

Mepivacaine should be administered with caution in patients with impaired cardiac function since they may be less able to compensate or worsen changes due to prolongation of atrio-ventricular conduction.

# Epileptic patients:

Because of their convulsive actions, all local anaesthetics should be used very cautiously. For poorly controlled epileptic patients, see section 4.3.

# Patients with a hepatic disease:

The lowest dose leading to efficient anaesthesia should be used.

# Patients with a kidney disease:

The lowest dose leading to efficient anaesthesia should be used.

# Patients with porphyria

{Scandonest and associated names} should only be used to patients with acute porphyria when no safer alternative is available. Caution should be taken in all patients with porphyria, as this medicinal product may trigger porphyria.

#### Patients with acidosis

Caution should be used in case of acidosis such as worsened of renal insufficiency or poorly control of type 1 diabetes mellitus.

#### Elderly patients:

Dosages should be reduced in elderly patients (due to lack of clinical data).

Mepivacaine should be administered with caution in patients, who are using antiplatelet/anticoagulant medicines or are suffering from a coagulation disorder, because of higher risk of bleeding. The higher risk of bleeding is more associated with the procedure, rather than with the medicine.

# Precautions for use

Local anaesthetics should only be employed by healthcare professionals who are well versed in diagnosis and management of dose-related toxicity and other acute emergencies which might arise from the block to be employed. The immediate availability of oxygen, other resuscitative drugs, cardiopulmonary resuscitative equipment, and the personnel resources needed for proper management of toxic reactions and related emergencies should be considered (see section 4.2). Delay in proper management of dose-related toxicity, under ventilation from any cause, and/or altered sensitivity may lead to the development of acidosis, cardiac arrest and, possibly, death.

Hypoxaemia and metabolic acidosis may potentiate the cardiovascular toxicity. Early control of seizures and aggressive airway management to treat hypoxaemia and acidosis may prevent cardiac arrest.

Concomitant use of the other medicinal products may require thorough monitoring (see section 4.5).

This medicinal product contains 24.67 mg sodium per 10 ml (maximum recommended dose), equivalent to 1.23 % of the WHO recommended maximum daily intake of 2g sodium for an adult.

# 4.5 Interaction with other medicinal products and other forms of interaction

Additive interactions with other local anaesthetics

Toxicity of local anaesthetics is additive. The total dose of administered mepivacaine should not exceed the maximum recommended dose.

# *H2 antihistaminics (cimetidine)*

Increased serum levels of amide anaesthetics have been reported after concomitant administration of cimetidine. Cimetidine reduces the clearance of mepivacaine.

#### *Sedatives (central nervous system depressants)*

If sedatives are employed to reduce patient's apprehension, reduced doses of anaesthetics should be used since local anaesthetic agents, like sedatives, are central nervous system depressants which in combination may have an additive effect.

# Antiarrhythmic drugs

Patients who are being treated with antiarrhythmic drugs may encounter an accumulation of side effects after the use of mepivacaine due the similarity of structures (such as Class I drug i.e. lidocaine).

# CYP1A2 inhibitors

Mepivacaine is metabolised primarily by CYP1A2 enzyme. Inhibitors of this cytochrome (e.g. ciprofloxacin, enoxacin, fluvoxamine) may decrease its metabolism, increase the risk of adverse effects and contribute to prolonged or toxic blood levels. Increased serum levels of amide anaesthetics have also been reported after concomitant administration of cimetidine, which is probably due to the inhibitory effect of cimetidine on CYP1A2. Caution is advised when associating the product of interest with these medications as dizziness may last longer (see section 4.7.).

# **Propranolol**

The clearance of mepivacaine may be reduced when associated with propranolol and it may result in higher serum concentrations of the anaesthetic. Caution should be exercised when mepivacaine is administered concomitantly with propranolol.

# 4.6 Fertility, pregnancy and lactation

# Fertility

No relevant data reported any toxic effects on fertility in animals with mepivacaine. To date, no data are available on humans.

# Pregnancy

Clinical studies were not performed in pregnant women and no cases of pregnant women injected with mepivacaine 30 mg/ml were reported in the literature. Animal studies do not indicate direct or indirect harmful effects with respect to reproductive toxicity. Therefore, as a precautionary measure, it is preferable to avoid the use of mepivacaine during pregnancy, unless necessary.

# **Breastfeeding**

No nursing mothers were included in the clinical studies with {Scandonest and associated names}. However, considering the lack of data for mepivacaine, a risk to the newborns/infants cannot be excluded. Therefore, nursing mothers are advised not to breastfeed within 10 hours following anaesthesia with {Scandonest and associated names}.

# 4.7 Effects on ability to drive and use machines

{Scandonest and associated names} may have a minor influence on the ability to drive and use machines. Dizziness (including vertigo, vision disorder and fatigue) may occur following administration of

mepivacaine (see section 4.8). So, patients should not leave the dental office until they recover their abilities (generally within 30 minutes) following the dental procedure.

# 4.8 Undesirable effects

# Summary of the safety profile

Adverse reactions following administration of {Scandonest and associated names} are similar to those observed with other local amide anaesthetics. These adverse reactions are, in general, dose-related and may result from high plasma levels caused by overdose, rapid absorption or unintended intra-vascular injection. They may also result from hypersensitivity, idiosyncrasy, or diminished tolerance by patient. Serious adverse experiences are generally systemic.

# Tabulated list of adverse reactions

The reported adverse effects come from spontaneous reporting and literature.

The frequencies classification follows the convention: Very common ( $\geq 1/10$ ), Common ( $\geq 1/100$  to <1/10), Uncommon ( $\geq 1/1,000$  to <1/100), Rare ( $\geq 1/10,000$  to <1/1,000) and Very rare (<1/10,000).

Frequency "not known": "not known (cannot be estimated from the available data)".

Rare	MedDRA Sytem Organ Class	Frequency	Adverse reactions
Angioedema (Face / tongue / lip / throat / larynx¹ / periorbital oedema) Bronchospasm / asthma² Urticaria  Psychiatric disorders  Not Known  Euphoric mood Anxiety/Nervousness³  Nervous system disorders  Common  Headache Rare  Neuropathy⁴: Neuropathy⁴: Neuralgia (Neuropathic pain) Paresthesia (i.e., burning, prickling, itching, tingling, local sensation of heat or cold, with no apparent physical cause) of oral and perioral structures Hypoesthesia / numbness (oral and perioral) Dysesthesia (oral and perioral), including dysgeusia (e.g., taste metallic, taste distorted), ageusia Dizziness (light headedness) Tremor³  Deep CNS depression: Loss of consciousness Coma Convulsion (including tonic-clonic seizure)  Presyncope, syncope; Confusional state, disorientation Speech disorder³ (e.g., dysarthria, logorrhea)	Immune system disorders	Rare	Hypersensitivity
Psychiatric disorders			Anaphylatic / anaphylactoid reactions
Bronchospasm / asthma²   Urticaria			Angioedema (Face / tongue / lip / throat
Psychiatric disorders  Not Known Euphoric mood Anxiety/Nervousness³  Nervous system disorders  Common Headache Rare Neuropathy⁴: Neuralgia (Neuropathic pain) Paresthesia (i.e., burning, prickling, itching, tingling, local sensation of heat or cold, with no apparent physical cause) of oral and perioral structures Hypoesthesia / numbness (oral and perioral) Dysesthesia (oral and perioral), including dysgeusia (e.g., taste metallic, taste distorted), ageusia Dizziness (light headedness) Tremor³  Deep CNS depression: Loss of consciousness Coma Convulsion (including tonic-clonic seizure)  Presyncope, syncope; Confusional state, disorientation Speech disorder³ (e.g., dysarthria, logorrhea)			/ larynx <sup>1</sup> / periorbital oedema)
Not Known   Euphoric mood   Anxiety/Nervousness³			Bronchospasm / asthma <sup>2</sup>
Nervous system disorders  Common  Rare  Neuropathy <sup>4</sup> : Neuropathy <sup>4</sup> : Neuralgia (Neuropathic pain) Paresthesia (i.e., burning, prickling, itching, tingling, local sensation of heat or cold, with no apparent physical cause) of oral and perioral structures Hypoesthesia / numbness (oral and perioral) Dysesthesia (oral and perioral), including dysgeusia (e.g., taste metallic, taste distorted), ageusia Dizziness (light headedness) Tremor <sup>3</sup> Deep CNS depression: Loss of consciousness Coma Convulsion (including tonic-clonic seizure)  Presyncope, syncope; Confusional state, disorientation Speech disorder <sup>3</sup> (e.g., dysarthria, logorrhea)			Urticaria
Common   Headache	Psychiatric disorders	Not Known	Euphoric mood
Rare  Neuropathy <sup>4</sup> : Neuralgia (Neuropathic pain) Paresthesia (i.e., burning, prickling, itching, tingling, local sensation of heat or cold, with no apparent physical cause) of oral and perioral structures Hypoesthesia / numbness (oral and perioral) Dysesthesia (oral and perioral), including dysgeusia (e.g., taste metallic, taste distorted), ageusia Dizziness (light headedness) Tremor <sup>3</sup> Deep CNS depression: Loss of consciousness Coma Convulsion (including tonic-clonic seizure)  Presyncope, syncope; Confusional state, disorientation Speech disorder <sup>3</sup> (e.g., dysarthria, logorrhea)	•		Anxiety/Nervousness <sup>3</sup>
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Coma Convulsion (including tonic-clonic seizure)  Presyncope, syncope; Confusional state, disorientation Speech disorder <sup>3</sup> (e.g., dysarthria, logorrhea)			
Convulsion (including tonic-clonic seizure)  Presyncope, syncope; Confusional state, disorientation Speech disorder <sup>3</sup> (e.g., dysarthria, logorrhea)			
Presyncope, syncope; Confusional state, disorientation Speech disorder <sup>3</sup> (e.g., dysarthria, logorrhea)			
Presyncope, syncope; Confusional state, disorientation Speech disorder <sup>3</sup> (e.g., dysarthria, logorrhea)			
Confusional state, disorientation Speech disorder <sup>3</sup> (e.g., dysarthria, logorrhea)			
Confusional state, disorientation Speech disorder <sup>3</sup> (e.g., dysarthria, logorrhea)			Presyncope, syncope:
Speech disorder <sup>3</sup> (e.g., dysarthria, logorrhea)			
logorrhea)			
			Restlessness / agitation <sup>3</sup>

		Balance disorder (disequilibrium)
		Somnolence
	Not known	Nystagmus
Eye disorders	Rare	Visual impairment
Eye disorders	Raic	Vision blurred
		Accommodation disorder
	Not known	Horner's syndrome
	Not known	
		Eyelid ptosis
		Enophthalmos
		Diplopia (paralysis of oculomotor
		muscles)
		Amaurosis (blindness)
		Mydriasis
	D	Miosis
Ear and labyrinth disorders	Rare	Vertigo
	Not Known	Ear discomfort
		Tinnitus
		Hyperacusis
Cardiac disorders	Rare	Cardiac arrest
		Bradyarrhythmia
		Bradycardia
		Tachyarrhythmia (including ventricular
		extrasystoles and ventricular
		fibrillation) <sup>5</sup>
		Angina pectoris <sup>6</sup>
		Conduction disorders (atrioventricular
		block)
		Tachycardia
		Palpitations
	Not known	Myocardial depression
Vascular disorders	Rare	Hypotension (with possible circulatory
		collapse)
	Very rare	Hypertension
	Not known	Vasodilatation
		Local/ Regional hyperaemia
Respiratory, thoracic and	Rare	Respiratory depression
mediastinal disorders		Bradypnoea
		Apnoea (respiratory arrest)
		Yawning
		Dyspnoea <sup>2</sup>
		Tachypnea
	Not known	Hypoxia <sup>7</sup> (including cerebral)
		Hypercapnia <sup>7</sup>
		Dysphonia (Hoarseness <sup>1</sup> )
Gastrointestinal disorders	Rare	Nausea
		Vomiting
		Gingival / oral mucosal exfoliation
		(sloughing) / ulceration
		Swelling <sup>8</sup> of tongue, lip, gums
	Not known	Stomatitis, glossitis, gingivitis
		Salivary hypersecretion
Skin and subcutaneous tissue	Rare	Rash (eruption)
Dam and subcutaneous ussue	Raic	rash (crupuon)

disorders		Erythema
		Pruritus
		Swelling face
		Hyperhidrosis (sweating or perspiration)
Musculoskeletal and connective	Rare	Muscle twitching
tissue disorders		Chills (shivering)
General disorders and	Rare	Local swelling
administration site conditions		Injection site swelling
	Not known	Chest pain
		Fatigue, asthenia (weakness)
		Feeling hot
		Injection site pain
Injury, poisoning and	Not known	Nerve injury
procedural complications		

#### Reporting of suspected adverse reactions

Reporting suspected adverse reactions after authorisation of the medicinal product is important. It allows continued monitoring of the benefit/risk balance of the medicinal product. Healthcare professionals are asked to report any suspected adverse reactions via the national reporting system listed in Appendix V.

#### 4.9 Overdose

# Types of overdose

Overdose of local anaesthetics may be absolute, resulting from the injection of excessive doses, or relative, resulting from the injection of a normally non-toxic dose under particular circumstances. These include inadvertent intravascular injection or abnormal rapid absorption into the systemic circulation, or delayed metabolism and elimination of the product.

# **Symptoms**

In case of relative overdose, patients generally present symptoms within 1-3 minutes. Whereas in case of absolute overdose, signs of toxicity, depending on the injection site, appear about 20-30 minutes after the injection.

Toxic effects are dose-dependent, comprising progressively more severe neurological manifestations, followed by vascular, respiratory and finally cardiovascular signs such as hypotension, bradycardia, arrhythmia and cardiac arrest

 $<sup>\</sup>frac{\textbf{Description of selected adverse reactions}}{1 \text{ laryngo-pharyngeal oedema may characteristically occur with hoarseness and/or dysphagia;}}$ 

<sup>&</sup>lt;sup>2</sup> bronchospasm (bronchoconstriction) may characteristically occur with dyspnoea;

<sup>&</sup>lt;sup>3</sup> several adverse events, like agitation, anxiety / nervousness tremor, speech disorder may be warning signs before CNS depression. In attendance of these signs, patients should be requested to hyperventilate and surveillance should be instituted (see Section 4.9.)

<sup>&</sup>lt;sup>4</sup> neural pathologies that may occur with the various symptoms of abnormal sensations (i.e., paresthesia, hypoesthesia, dysesthesia, hyperesthesia, etc) of the lips, tongue and oral tissues. These data originated in post-marketing reports, mostly following nerve blocks in mandible, involving various branches of the trigeminal nerve;

<sup>&</sup>lt;sup>5</sup> mostly in patients with underlying cardiac disease or those receiving certain drugs:

<sup>&</sup>lt;sup>6</sup> in predisposed patients or those with risk factors of ischemic heart disease;

<sup>&</sup>lt;sup>7</sup> hypoxia and hypercapnia are secondary to respiratory depression and / or to seizures and sustained muscular exertion:

<sup>&</sup>lt;sup>8</sup> by accidental biting or chewing of the lips or tongue while the anaesthesia persists.

CNS toxicity occurs gradually, with symptoms and reactions of progressively increasing severity. Initial symptoms include agitation, a feeling of intoxication, a sensation of numbness in the lips and tongue, paraesthesia around the mouth, dizziness, visual and hearing disturbances, and buzzing in the ears. Manifestation of these effects during injection of the product is a warning signal and the injection should be stopped immediately.

Cardiovascular symptoms occur at plasma levels exceeding those inducing CNS toxicity and are therefore generally preceded by signs of CNS toxicity, unless the patient is under general anaesthesia or is heavily sedated (e.g. by a benzodiazepine or barbiturate). Loss of consciousness and the onset of generalized seizures may be preceded by premonitory symptoms such as joint and muscle stiffness, or twitching. Seizures may last from a few seconds to several minutes and rapidly lead to hypoxia and hypercapnia, as a result of increased muscular activity and insufficient ventilation. In severe cases, respiratory arrest may occur.

Undesirable toxic effects may appear at plasma concentrations upper than 5 mg/l, and convulsions could appear with 10 mg/l or higher. Limited data of overdose are available.

Acidosis exacerbates the toxic effects of local anaesthetics.

If a rapid intravascular injection is administered, a high blood concentration of mepivacaine in the coronary arteries may lead to myocardial failure, possibly followed by cardiac arrest, before the CNS is affected. The data on this effect remains controversial (see Sections 4.4 and 5.1).

# Management

If signs of acute systemic toxicity appear, injection of the local anaesthetic should be stopped immediately. CNS symptoms (convulsions, CNS depression) must promptly be treated with appropriate airway/respiratory support and the administration of anticonvulsant drugs.

Optimal oxygenation and ventilation and circulatory support as well as treatment of acidosis are of vital importance.

If cardiovascular depression occurs (hypotension, bradycardia), appropriate treatment with intravenous fluids, vasopressor, and/or inotropic agents should be considered. Children should be given doses commensurate with age and weight.

Should cardiac arrest occur, a successful outcome may require prolonged resuscitative efforts.

Dialysis is not effective in treating an overdose of Mepivacaine. Elimination can be accelerated by acidifying the urine.

#### 5. PHARMACOLOGICAL PROPERTIES

# 5.1 Pharmacodynamic properties

Pharmacotherapeutic group: Nervous System/Anaesthetics/Local anaesthetics/Amides/Mepivacaine ATC code: N01 BB 03

# Mechanism of action

Mepivacaine is an amide local anaesthetic.

Mepivacaine reversibly inhibits the conduction of nerve impulses by decreasing or blocking sodium (Na+) flow during propagation of the nerve action potential. As the anaesthetic action progressively develops in the nerve, the threshold for electrical excitability gradually increases, the rate of rise of the action potential declines and impulse conduction slows. Mepivacaine has a rapid onset, a high potency of anaesthesia and a low toxicity.

The mepivacaine displays slight vasoconstrictive properties leading to a longer duration of action than with most other local anesthetics when administered without a vasoconstrictor. Studies revealed, that mepivacaine has vasoconstrictive properties. This property could be beneficial when the use of

vasoconstrictor is contraindicated. Several factors such as pH of tissue, pKa, lipid solubility, local anaesthetic concentration, diffusion in the nerve of local anaesthetic, etc., may influence the onset and the duration of the local anaesthetic.

# Onset of action

When a dental peripheral nerve block is performed, mepivacaine effect occurs rapidly (generally within 3 to 5 minutes).

# Analgesia duration

Pulp anaesthesia generally lasts approximately 25 minutes after maxillary infiltration and around 40 minutes after inferior alveolar block, whereas anaesthesia of soft tissue was maintained around up to 90 minutes after maxillary infiltration and approximatively 165 minutes after inferior alveolar nerve block.

# Bioavailability

The bioavailability is 100% at the action site.

# 5.2 Pharmacokinetic properties

# **Absorption**

Peak plasma levels of mepivacaine 30 mg/ml solution following peri-oral injections during dental usual procedures were determined in various clinical studies. The maximum plasma level of mepivacaine is achieved approximately after 30-60 minutes. Mepivacaine maximum concentrations were reported to be between  $0.4-1.2~\mu g/ml$  at around 30 minutes post-intraoral injection with one cartridge and between  $0.95\text{-}1.70~\mu g/ml$  with two cartridges. The ratio of the average plasma levels following one and two cartridges were approximately 50%, evidencing a dose proportionality at these dose levels. These plasmatic concentrations are well below the threshold of CNS and CVS toxicity, respectively 10 to 25 fold lower.

# Distribution

Mepivacaine distribution covers all body tissues. Higher concentrations are found in highly perfused tissues such as liver, lungs, heart and brain. Mepivacaine binds to plasmatic proteins up to around 75% and can cross placental barrier by simple diffusion.

# Metabolism

As all amide-type local anaesthetics, mepivacaine is largely metabolised in the liver by microsomal enzymes (cytochrome P450 1A2 (CYP1A2)). Given this fact, inhibitors of P450 isoenzymes may decrease its metabolism and increase the risk of adverse effects (see section 4.5.). Over 50% of a dose is excreted as metabolites into the bile but these probably undergo entero-hepatic circulation as only small amounts appear in the faeces.

# **Elimination**

The plasma elimination half-life is 2 hours for adults. Clearance of amides is dependent on hepatic blood flow. The plasma half-life is prolonged if the patient is suffering from liver and renal insufficiency. The duration of the local anaesthetic is unrelated to the half-life as its action is terminated when the drug is removed from the receptor. Metabolites are excreted in the urine with less than 10% of unchanged mepivacaine.

Elimination can be accelerated by acidifying the urine (See section 4.9).

# 5.3 Preclinical safety data

General toxicity studies (Single dose toxicity, Repeat-dose toxicity) were performed with mepivacaine demonstrating a good safety margin. *In vitro* and *in vivo* testing carried out on mepivacaine hydrochloride did not reveal any genotoxic effect of this product.

No relevant reproductive and development toxicity study demonstrated teratogenic effects with mepivacaine.

No specific carcinogenicity studies were performed.

#### 6. PHARMACEUTICAL PARTICULARS

# 6.1 List of excipients

Sodium chloride Sodium hydroxide (for pH-adjustment) Water for injection

# 6.2 Incompatibilities

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

# 6.3 Shelf life

3 years

# 6.4 Special precautions for storage

Do not freeze.

#### 6.5 Nature and contents of container

Single use type I glass cartridge, sealed at its base by a mobile type I synthetic rubber and at the top by a type I synthetic rubber seal kept in place by an aluminium cap.

Cartridges of 1.7 ml or 2.2 ml.

Box containing 50 cartridges.

Not all pack sizes may be marketed.

# 6.6 Special precautions for disposal and other handling

The cartridges are intended for single use. The drug administration to the patient should take place immediately after the opening of the cartridge.

As for any cartridge, the diaphragm should be disinfected prior to use. It should be carefully swabbed either with 70% ethyl alcohol or with 90% pure isopropyl alcohol for pharmaceutical use.

The cartridges should under no circumstance be dipped into any solution whatsoever.

Any unused medicinal product or waste material should be disposed of in accordance with local requirements.

# 7. MARKETING AUTHORISATION HOLDER

# [To be completed nationally]

# 8. MARKETING AUTHORISATION NUMBER(S)

[To be completed nationally]

# 9. DATE OF FIRST AUTHORISATION/RENEWAL OF THE AUTHORISATION

[To be completed nationally]

# 10. DATE OF REVISION OF THE TEXT

[To be completed nationally]

LABELLING

# PARTICULARS TO APPEAR ON THE OUTER PACKAGING **CARTON** 1. NAME OF THE MEDICINAL PRODUCT [See Annex I - To be completed nationally] Mepivacaine hydrochloride 2. STATEMENT OF ACTIVE SUBSTANCE(S) 1 ml for solution for injection contains 30 mg of mepivacaine hydrochloride. Each cartridge of 1.7 ml of solution for injection contains 51 mg of mepivacaine hydrochloride. Each cartridge of 2.2 ml of solution for injection contains 66 mg of mepivacaine hydrochloride. 3. LIST OF EXCIPIENTS Sodium chloride, sodium hydroxide (for pH-adjustment), water for injection. Contains sodium, see package leaflet for further information. 4. PHARMACEUTICAL FORM AND CONTENTS Solution for injection. 50 x 1.7 ml cartridges 50 x 2.2 ml cartridges 5. METHOD AND ROUTE(S) OF ADMINISTRATION Read the package leaflet before use. Infiltration and perineural use For single use. The drug administration should take place immediately after opening. 6. SPECIAL WARNING THAT THE MEDICINAL PRODUCT MUST BE STORED OUT OF THE SIGHT AND REACH OF CHILDREN Keep out of the sight and reach of children. 7. OTHER SPECIAL WARNING(S), IF NECESSARY 8. **EXPIRY DATE EXP**

9.

SPECIAL STORAGE CONDITIONS

Do not freeze.

18.

PC: {number} SN: {number} NN: {number}

10. SPECIAL PRECAUTIONS FOR DISPOSAL OF UNUSED MEDICINAL PRODUCTS OR WASTE MATERIALS DERIVED FROM SUCH MEDICINAL PRODUCTS, IF APPROPRIATE
Discard unused solution.
11. NAME AND ADDRESS OF THE MARKETING AUTHORISATION HOLDER
[See Annex I - To be completed nationally]
12. MARKETING AUTHORISATION NUMBER(S)
[To be completed nationally]
13. BATCH NUMBER
Lot
14. GENERAL CLASSIFICATION FOR SUPPLY
[To be completed nationally]
15. INSTRUCTIONS ON USE
16. INFORMATION IN BRAILLE
<justification accepted.="" braille="" for="" including="" not=""></justification>
17. UNIQUE IDENTIFIER – 2D BARCODE
2D barcode carrying the unique identifier included.

UNIQUE IDENTIFIER – HUMAN READABLE DATA

MINIMUM PARTICULARS TO APPEAR	ON SMALL	IMMEDIATE	PACKAGING 1	UNITS
CARTRIDGE LAREL				

1.	NAME OF THE MEDICINAL PRODUCT AND ROUTE(S) OF ADMINISTRATION				
[See A	[See Annex I - To be completed nationally]				
	acaine hydrochloride tion and perineural use				
2.	METHOD OF ADMINISTRATION				
3.	EXPIRY DATE				
EXP					
4.	BATCH NUMBER				
Lot					
5.	CONTENTS BY WEIGHT, BY VOLUME OR BY UNIT				
1.7 ml 2.2 ml					
6.	OTHER				

PACKAGE LEAFLET

# Package leaflet: Information for the patient

# {Scandonest and associated names (see Annex I) strength pharmaceutical form} [See Annex I - To be completed nationally]

Mepivacaine hydrochloride

# Read all of this leaflet carefully before you start using this medicine because it contains important information for you.

- Keep this leaflet. You may need to read it again.
- If you have any further questions, ask your doctor, dentist or pharmacist.
- This medicine has been prescribed for you only. Do not pass it on to others. It may harm them, even if their signs of illness are the same as yours.
- If you get any side effects, talk to your doctor, dentist or pharmacist. This includes any possible side effects not listed in this leaflet. See section 4.

#### What is in this leaflet.

- 1. What X is and what it is used for
- 2. What you need to know before you use X
- 3. How to use X
- 4. Possible side effects
- 5. How to store X
- 6. Contents of the pack and other information

# 1. What X is and what it is used for

X is a local anaesthetic, which numbs a particular region to prevent or minimize pain. The medicine is used in local dental procedures in adults, adolescents and children above 4 years of age (ca. 20 kg in body weight). It contains the active substance mepivacaine hydrochloride and belongs to the group of nervous system anaesthetics.

# 2. What you need to know before you use X

#### Do not use X:

- If you are allergic to mepivacaine or any of the other ingredients of this medicine (listed in section 6);
- if you are allergic to other local anaesthetics of the same group (e.g. lidocaine, bupivacaine);
- If you suffer from:
  - Heart disorders due to the abnormality of the electronic impulse triggering the heart beat (severe conduction disturbances);
  - Epilepsy not adequately controlled by treatment;
- In children below 4 years of age (ca. 20 kg in body weight).

# Warnings and precautions

Talk to your dentist before using X if:

- You suffer from heart disorders;
- You have a severe anaemia;
- You suffer from high blood pressure (severe or untreated hypertension);
- You suffer from a low blood pressure (hypotension);
- You suffer from epilepsy;
- You suffer from liver disease;
- You suffer from kidney disease;
- You suffer from a disease which affects the nervous system and results in neurological disorders (porphyria);

- You have a high acidity in the blood (acidosis);
- You have poor blood circulation;
- Your general condition is impaired;
- You have inflammation or infection in the injection site.

If any of these situations applies to you, tell your dentist. He/she may decide to give you reduced dose.

#### Other medicines and X

Tell your dentist if you are taking, have recently taken or might take any other medicines, particularly:

- other local anaesthetics;
- medicines used to treat heartburn and ulcers of the stomach and intestines (such as cimetidine);
- tranquilizing and sedative medicines;
- medicines used to stabilize heartbeat (antiarrythmics);
- Cytochrom P450 1A2 inhibitors;
- medicines used to treat hypertension (propranolol).

# X with food

Avoid eating, included chewing-gum, until normal sensation is restored because there is a risk that you may bite your lips, cheeks or tongue, especially in children.

# Pregnancy, breast-feeding and fertility

If you are pregnant or breast-feeding, think you may be pregnant or are planning to have a baby, ask your doctor, dentist or pharmacist for advice before using this medicine.

As a precautionary measure, it is preferrable to avoid the use of this product during pregnancy, unless necessary.

Nursing mothers are advised not to breastfeed 10 hours following anaesthesia with this product.

# **Driving and using machines**

This medicine may have a minor influence on the ability to drive and use machines. Dizziness (including a feeling of "spinning", vision disorder and fatigue), loss of consciousness may occur following administration of this medicine (see section 4). You should not leave the dental office until you recover your abilities (generally within 30 minutes) following the dental procedure.

# X contains sodium

This medicine contains 24.67 mg sodium per 10 ml (maximum recommended dose). This is equivalent to 1.23 % of the recommended maximum daily dietary intake of sodium for an adult.

#### 3. How to use X

X should only be used by or under the supervision of dentists, stomatologists or other, trained clinicians by a slow local injection.

They will determine the appropriate dose taking into account the procedure, your age, your weight and your general health.

The lowest dose leading to efficient anaesthesia should be used.

This medicine is given as an injection in the oral cavity.

# If you are given more X than you should

The following symptoms may be signs of toxicity due to excessive doses of local anaesthetics: agitation, a sensation of numbness in the lips and tongue, prickling and tingling around the mouth, dizziness, visual and hearing disturbances, and buzzing in the ears, muscle stiffness and twitching, low blood pressure, low or irregular heart rate. If you experience any of these, administration should immediately be stopped and emergency medical assistance should be summoned.

If you have any further questions on the use of this medicine, ask your doctor or dentist.

#### 4. Possible side effects

Like all medicines, this medicine can cause side effects, although not everybody gets them. One or more of the following side effects may occur following administration of X.

# **Common side effects** (may affect up to 1 in 10 people):

Headache

# Rare side effects (may affect up to 1 in 1,000 people):

- rash, itching, swelling of the face, lips, gums, tongue and/or throat and difficulty breathing, wheezing/asthma, hives (urticaria): these might be symptoms of hypersensitivity reactions (allergic or allergy-like reactions);
- pain due to nerve damage (neuropathic pain);
- burning sensation, prickling skin sensation, tingling with no apparent physical cause around the mouth (paresthesia);
- abnormal sensation in and around the mouth (hypoesthesia);
- metallic taste, taste distortion, taste loss (dysesthesia);
- dizziness (lightheadedness);
- tremor:
- loss of consciousness, fit (convulsion), coma;
- fainting;
- confusion, disorientation;
- speech disturbances, excessive talkativeness;
- restlessness, agitation;
- impaired sense of balance (disequilibrium);
- drowsiness:
- vision blurred, problems clearly focusing an object, visual impairment;
- a feeling of spinning (vertigo);
- failure of the heart to contract effectively (cardiac arrest), rapid and erratic heartbeats (ventricular fibrillation), severe and crushing chest pain (angina pectoris);
- heartbeat coordination problems (conduction disorders, atrioventricular block), abnormal slow heartbeat (bradycardia), abnormal rapid heartbeat (tachycardia), palpitations;
- low blood pressure;
- increase of blood flow (hyperaemia);
- breathing difficulties such as shortness of breath, abnormally slow or very rapid breathing;
- yawning;
- feeling sick, vomiting, mouth or gum ulcers, swelling of tongue, lips or gums;
- excessive sweating:
- muscle twitching;
- chills;
- swelling at the site of injection.

# **Very rare side effects** (may affect up to 1 in 10,000 people):

high blood pressure.

# **Possible side effects** (frequency cannot be estimated from the available data):

- euphoric mood, anxiety/nervousness;
- involuntary eye movements, eye problems such as narrowed pupil, falling of the upper eyelid (as in Horner's syndrome), dilated pupil, the posterior displacement of the eyeball within the orbit due to changes in the volume of the orbit (called *Enophthalmos*), doubled vision or vision loss;
- ear disturbances, such as ringing in the ears, oversensitivity of hearing;

- failure of the heart to contract effectively (myocardial depression);
- widening of blood vessels (vasodilatation);
- changes in the color of your skin with confusion, cough, fast heart rate, rapid breathing, sweating: this
  might be symptoms of a deficiency of oxygen in your tissues (hypoxia);
- quick or difficult breathing, drowsiness, headache, inability to think and sleepiness, which may be the signs of a high concentration of carbon dioxide in your blood (hypercapnia);
- altered voice (hoarseness);
- swelling of the mouth, lips, tongue and gums, high saliva production;
- fatigue, feeling of weakness, feeling hot, pain at the site of injection;
- nerve injury.

#### Reporting of side effects

If you get any side effects, talk to your doctor or dentist. This includes any possible side effects not listed in this leaflet. You can also report side effects directly via the national reporting system listed in Appendix V. By reporting side effects, you can help provide more information on the safety of this medicine.

#### 5. How to store X

Keep this medicine out of the sight and reach of children.

This medicine does not require any special storage condition.

Do not freeze.

Do not use this medicine after the expiry date, which is stated on the cartridge label and carton after EXP. The expiry date refers to the last day of that month.

Do not use this medicine if you notice that the solution is not clear and colourless.

The cartridges are for single use. The medicine administration should take place immediately after the opening of the cartridge. Unused solution must be discarded.

Do not throw away any medicines via wastewater or household. Ask your dentist, doctor or pharmacist how to throw away medicines you no longer use. These measures will help protect the environment.

# 6. Contents of the pack and other information

#### What X contains

- The active substance is mepivacaine hydrochloride 30 mg/ml; Each cartridge of 1.7 ml of solution for injection contains 51 mg of mepivacaine hydrochloride. Each cartridge of 2.2 ml of solution for injection contains 66 mg of mepivacaine hydrochloride.
- The other ingredients are: sodium chloride, sodium hydroxide and water for injection.

# What X looks like and contents of the pack

This medicine is a clear and colourless solution. It is packed in a glass cartridge with a rubber seal kept in place by an aluminium cap.

The marketed presentation is cartridges of 1.7 ml or 2.2 ml contained in box of 50 cartridges.

# **Marketing Authorisation Holder and Manufacturer**

Marketing Authorisation Holder

[See Annex I - To be completed nationally]

Manufacturer SEPTODONT 58, rue du Pont de Créteil 94100 Saint-Maur-Des-Fossés – France

This medicinal product is authorised in the Member States of the EEA under the following names: [See Annex I - To be completed nationally]

This leaflet was last revised in  $\{month\ YYYY\}$ .