Summary of Product Characteristics

DYNEXAN Mundgel®

1 Name of medicinal product
DYNEXAN Mundgel®

2% gel
Active substance: Lidocaine hydrochloride

2 Qualitative and quantitative composition of the medicinal product
DYNEXAN Mundgel is a topical local anaesthetic based on lidocaine hydrochloride and contains the following amount of active ingredient:

Type and quantity of active substance
1 g gel contains 20 mg lidocaine hydrochloride.

Excipients
See chapter 6.1

3 Pharmaceutical form
Oromucosal gel

4 Clinical Particulars
4.1 Therapeutic Indications
For temporary, symptomatic treatment of pain on the oral mucosa, gingiva and lips.

4.2 Posology and method of administration
Dosage with single and daily doses
For adults, a pea sized piece of gel (approx. 0.2 g gel or 4 mg lidocaine) is applied 4-8 times a day. The daily dose should not exceed 40 mg lidocaine.

For children, toddlers and infants the dosage should be individually adapted to age and weight (maximal 4 times daily a pea sized piece).

Method and duration of administration
DYNEXAN Mundgel should be applied and rubbed gently into the painful areas. When wearing new dental plates or braces, a thin layer of DYNEXAN Mundgel should be applied to the affected areas. When the dentist applies DYNEXAN Mundgel from cylindric ampoules he uses a special cannula to apply the gel into alveolae and gingival pockets. If the patient's disorders persist for more than a week or unclear disorders occur, he should consult a dentist or doctor.

4.3 Contraindications
DYNEXAN Mundgel must not be used in case of hypersensitivity to one of the ingredients or to another local anaesthetic belonging to the amide type.

Although the resorbed quantity of lidocaine is clearly lower after local application of the gel than after infiltration anaesthesia or nerve block anaesthesia, systemic effects cannot be completely excluded if resorption conditions are very unfavourable (strongly traumatised mucosa). Therefore, DYNEXAN Mundgel is only allowed to be applied under special caution in patients suffering from severe disorders of the conduction system of the heart or acute decompensated cardiac insufficiency and severe kidney or liver diseases.

4.4 Special warnings and precautions for use
Benzalkonium chloride may cause skin irritations.

4.5 Interaction with other medicinal products and other forms of interaction
Relevant clinical interactions are highly unlikely due to the local application and the amount of the gel to be applied. However, in principle the analgesic effect of other local anaesthetics could be increased. Interactions known for lidocaine (antiarrhythmics, beta blockers) are not relevant for the oromucosal application of DYNEXAN Mundgel.

4.6 Fertility, pregnancy and lactation
There are no adequate data of pregnant women treated with DYNEXAN Mundgel.

Lidocaine is able to cross the placental barrier and may be absorbed by foetal tissue. The potential risk for humans is not known. Lidocaine is excreted in breast milk in small quantities.

DYNEXAN Mundgel should not be used during pregnancy and lactation unless clearly necessary.

4.7 Effects on ability to drive and use machines
No negative influence of DYNEXAN Mundgel to drive vehicles and operate machinery is known.

4.8 Undesirable effects
Frequency information is based on the following categories:

Very common (≥ 1/10)
Common (≥ 1/100 to < 1/10)
Uncommon (≥ 1/1,000 to < 1/100)
Rare (≥ 1/10,000 to < 1,000)
Very rare (< 1/10,000)

Not known (frequency cannot be estimated from the available data). Very rare
- Local allergic and not-allergic reactions, e.g.
- Burning sensation
- Swelling
- Erythema
- Pruritus
- Urticaria
- Contact dermatitis
- Exanthema
- Pain
- Changes in taste
- Anaesthesia
- Anaphylactic reactions and anaphylactic shock reactions with accompanying symptoms.

Reporting of suspected adverse reactions

4.9 Overdose
Symptoms of intoxication
Until now no cases of intoxication with DYNEXAN Mundgel are known.

In case of a systemic adverse reaction the following emergency measures / counter agents are recommended: Keep the respiratory tract free, check blood pressure, pulse and pupil width, horizontal positioning of the patient with legs elevated in case of acute and threatening hypotension, administration of a beta-sympathomimetic (e.g. isoprenaline), in case of cramps diazepam (5 to 10 mg i.v.), if the vagotone is increased (bradycardia) atropine (0.5 to 1 mg i.v.), if needed administration of oxygen, i.v.-volume substitution and reanimation.

5 Pharmacological properties
5.1 Pharmacodynamic properties
Pharmacotherapeutic group: anaesthetics, local; amides

ATC code: N01BB02
Lidocaine reversibly inhibits the opening of sodium channels and thus the development of an action potential. The active substance binds on a specific receptor of the sodium channel. When the sodium channel is opened the influx of sodium ions is blocked temporarily.
channel, inhibiting the ion transport and the development of an action potential. The transmission of nerve impulses is suppressed locally.

Pain perception is suppressed. Thin unmyelinated nerve fibres are switched off more quickly than thick motoric nerve fibres. Perceptions are switched off in the following order: Pain, temperature, touch, and pressure.

5.2 Pharmacokinetic properties

Lidocaine is well absorbed after application on the oral mucosa because of its special morphological conditions which are different from the normal skin (no stratum corneum, blood vessels nearer to the surface). It is absorbed within seconds to minutes and pain relief lasts for about 1 hour.

Lidocaine undergoes extensive first pass-metabolism by the liver. 90-95 % is metabolised (N-dealkylation, ring hydroxylation, hydrolytic cleavage of acid amide linkage). About 5-10 % of the dose is excreted unchanged by the kidneys. The metabolic rate may be strongly decreased in case of impaired liver function.

5.3 Preclinical safety data

Due to the delayed release of lidocaine from the gel base and its rapid metabolism, systemic or toxic effects are unlikely after application of DYNEXAN Mundgel.

Acute toxicity

The acute toxicity of lidocaine was tested in various species in different administration forms (see table).

<table>
<thead>
<tr>
<th>Species</th>
<th>Intravenous (mg/kg)</th>
<th>Oral (mg/kg)</th>
<th>Subcutaneous (mg/kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mouse</td>
<td>15</td>
<td>220</td>
<td>163</td>
</tr>
<tr>
<td>Rat</td>
<td>21</td>
<td>--</td>
<td>570</td>
</tr>
<tr>
<td>Rabbit</td>
<td>25.6</td>
<td>--</td>
<td>--</td>
</tr>
<tr>
<td>Guinea pig</td>
<td>24.5</td>
<td>--</td>
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</tr>
</tbody>
</table>

First toxic effects on the CNS were seen after intravenous dosages of 3-5 mg/kg and subcutaneous dosages of 30-50 mg/kg.

The limit dose below the use of lidocaine is considered to be safe is 4 mg/kg body weight (intramuscular injection).

Chronic toxicity

Investigations were performed in rats and dogs with 6 months duration. The studies in rats did not reveal any pathological changes caused by lidocaine. The studies in dogs indicated fatty changes in the liver at subcutaneous dosages of 30 mg/kg and oral dosages of 50-60 mg/kg.

Reproduction toxicity

In studies aiming at the embryonic and foetal development in which rats or rabbits were treated with lidocaine during the period of organogenesis, no teratogenic effects were found. Embryotoxicity was observed at maternal toxic doses in rabbits. In rat dams that were treated with maternal-ly toxic doses of lidocaine during pregnancy and lactation, influencing the length of pregnancy, the survival rate of the offspring was diminished.

Genotoxicity and carcinogenic potential

Investigations with regard to lidocaine genotoxicity were negative. However, in vitro genotoxicity studies with the metabolite 2,6-xylidine showed a genotoxic potential.

In a carcinogenicity study in rats, tumors have been observed in the nasal cavity, the subskin and the liver. 2,6-xylidine was administered in utero and lifelong postnatal.

Local tolerance

As a result of a 4-week experimental study on the local tolerance of DYNEXAN Mundgel in the hamster using the cheek pouch technique only unspecified reactions were observed. There were no clinically relevant changes after application of DYNEXAN Mundgel.

Sensitisation potential

A study on the sensitising potential of DYNEXAN Mundgel in the guinea pig was performed using the technique of Magnusson and Kligman. Under these experimental conditions, the product showed only a slight sensitising capacity at 24 hours.

6 Pharmaceutical particulars

6.1 List of excipients

Benzalkonium chloride, bitter-fennel fruit oil, glycerol, guar galactomannan, partly demethylised mint oil, liquid paraffin, peppermint oil, saccharin sodium, colloidal anhydrous silica, star anise oil, thymol, titanium dioxide, white soft vaseline, purified water.

Appearance of DYNEXAN Mundgel

Due to the addition of a white pigment, DYNEXAN Mundgel has an ointment-like appearance.

6.2 Incompatibilities

Not applicable.

6.3. Shelf life

5 years.

After first opening, DYNEXAN Mundgel can be used for 3 months.