1. NAME OF THE MEDICINAL PRODUCT

KALINOR-retard 600 mg

2. QUALITATIVE AND QUANTITATIVE COMPOSITION

Active substance: Potassium chloride.
1 prolonged-release capsule, hard, contains: 600 mg potassium chloride, microencapsulated (potassium content 315 mg corresponds to 8 mmol = 8 mval K^+).

Excipients with known effect:
Sodium (less than 1 mmol)

For the full list of excipients, see section 6.1.

3. PHARMACEUTICAL FORM

Prolonged-release capsule, hard.

4. CLINICAL PARTICULARS

4.1 Therapeutic indications

Treatment and prevention of hypokalemia.

4.2 Posology, method and duration of administration

Posology:
Dosage is to be adapted to the individual conditions. The following guidelines apply: For prophylaxis of a potassium deficiency in general, 2–3 capsules Kalinor-retard 600 mg daily (corresponding to 16–24 mmol K^+). For treatment of a potassium deficiency, 4-12 capsules Kalinor-retard 600 mg daily (corresponding to 32-96 mmol K^+). A daily dose of more than 2 capsules should be divided into two or three individual doses of 2-4 tablets (16-32 mmol K^+).
The dosage should be adapted to serum potassium levels of individual patient.
If the cause of a potassium deficit cannot be determined, ongoing replacement is recommended. In other cases of potassium deficiency, days to weeks often suffice to balance the potassium deficit.

Paediatric population
There is no indication for use in children and adolescent for Kalinor-retard 600 mg.

Method of administration:
The capsules should be swallowed whole at mealtimes with plenty of fluid (at least the equivalent of a water glass full). The capsules can be opened if there are swallowing problems. The content (controlled-release micropellets) is taken in a liquid suspension or in semi-solid food.

4.3 Contraindications

Hypersensitivity to the active substance or any of the excipients listed in section 6.1.
The preparation should not be used in the case of diseases that are often linked to hyperkalaemia:

- dehydration
- restricted excretory kidney function
- Addison's disease
- Adynamia episodica hereditaria
- Sickle cell anaemia

- Metabolic imbalances in the acidic region, e.g. diabetic acidosis and in the case of elevated serum potassium levels due to the movement of potassium from the intracellular to extracellular space.

Prescribing solid potassium chloride preparations must be carefully considered in the case of impairment of the oesophagus or the gastrointestinal tract.

4.4 Special warnings and precautions for use

Prior to use, electrolyte and acid base statuses, cardiac rhythm and, particularly in elderly patients, kidney function should be checked. These parameters should be monitored during treatment, initially in shorter intervals and later in longer intervals.
Kalinor-retard 600 mg should only be used with caution in the case of simultaneous treatment with anticholinergics, potassium-saving diuretics, aldosterone antagonists, ACE inhibitors, angiotensin II receptor blockers or potential nephrotoxic medications (non-steroidal anti-inflammatories, etc.). Hyperkalaemia may occur accidentally as a result of interaction with the latter drugs, or as a result of suddenly occurring acidosis, acute restriction of the renal function or other conditions.

Kalinor-retard 600 mg contains sodium
This drug contains less than 1 mmol sodium (23 mg) per capsule, i.e. it is almost "sodium free".

4.5 Interaction with other medicinal products and other forms of interaction

In the event of a serum potassium level higher than the norm (hyperkalaemia), the effect of Digitalis is reduced.
In the case of simultaneous treatment with angiotensin-converting enzyme inhibitors (ACE inhibitors, angiotensin II receptor blockers), aldosterone antagonists, potassium-saving diuretics or non-steroidal anti-inflammatories/analgesics, such as indomethacin, a special check on the serum potassium values is advisable as the stated substances can lead to a reduction in the excretion of potassium via the kidneys and therefore hyperkalaemia.
Anticholinergics inhibit intestinal motility and therefore increase the risk of gastrointestinal adverse effects in the case of simultaneous use.

4.6 Fertility, pregnancy and lactation

As both high and low potassium serum levels impair maternal and foetal heart function, the maternal serum level should be monitored closely. Provided that the maternal serum level remains within the physiological range, no harmful effects are to be expected for the embryo, foetus or breastfed child. There is no known information on harmful effects during pregnancy and lactation.

4.7 Effects on ability to drive and use machines

Kalinor-retard 600 mg has no or a negligible influence on the ability to drive and use machines.

4.8 Undesirable effects

The following frequency information is used when outlining undesirable effects:
Very common (≥ 1/10)
Common (≥ 1/100 to < 1/10)
Uncommon (≥ 1/1,000 to < 1/100)
Rare (≥ 1/10,000 to < 1/1,000)
Very rare (< 1/10,000)
Unknown (Frequency cannot be estimated from the available data).

Metabolic and nutritional disorders
Rare: Hyperkalaemia

Cardiac disorders
Very rare: Excessive intake rates of potassium can lead to disturbances to cardiac rhythm

Gastrointestinal disorders

Uncommon: Heartburn, stomach pain, diarrhoea, eructation, nausea/vomiting, flatulence

Disorders of the skin and subdermal cellular tissue
Rare: Allergic reactions, such as eczema, pruritus, rash. In this case, the preparation must be discontinued.

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. Any suspected adverse events should be reported to the Ministry of Health according to the National Regulation by using an online form: https://sideeffects.health.gov.il

4.9 Overdose
Potassium intoxication occurs if the renal potassium excretion stops or is blocked, i.e. in the case of acute kidney failure, Addison's disease or kidney failure occurring for other reasons, for example, particularly in the case of simultaneous excessive iatrogenic reduction of the potassium excretion, e.g. as a result of aldosterone antagonists or other potassium-saving diuretics. Where normal renal potassium excretion is possible, no intoxication is to be expected as a result of oral potassium intake.
In addition to cardiovascular changes (bradycardia, arrhythmia, blood pressure decrease with clammy extremities and peripheral circulatory collapse; eventually ventricular fibrillations and diastolic cardiac arrest), potassium intoxication leads to non-specific general symptoms: feeling of malaise, restlessness and general weakness, states of confusion. In addition, there is also paraesthesia in the extremities and in the perioral region; in some cases, flaccid paralysis also occurs, a metallic taste is often reported.
Depending on the severity of the intoxication, the treatment of hyperkalaemia has different objectives:
1. Immediate "detoxification" of the potassium through administration of an antidote (sodium or calcium salt), e.g. 10–20 ml of 10% calcium gluconate solution intravenously.
2. Reduction of the serum potassium level by relocating potassium from the extracellular to intracellular space, e.g. through a glucose insulin drip and acidosis treatment.
3. Elimination of potassium through dialysis or via the gastrointestinal tract by means of a cation exchanger (e.g. Resonium® A).

5. PHARMACOLOGICAL PROPERTIES

5.1 Pharmacodynamic properties
Pharmacotherapeutic group: mineral/potassium preparation.
ATC code: A12BA01.
Kalinor-retard 600 mg contains microencapsulated potassium chloride crystals (pellets) that are distributed following dissolution of the two-part capsule in the stomach and intestine.

The human body contains around 50 mmol/kg potassium, approx. 98% of which is intracellular. The intracellular potassium concentration is approx. 140–150 mmol/l. The normal value for potassium concentration in the plasma is 3.5–5 mmol/l. The daily requirement is 1 to 1.5 mmol/kg body weight (39–59 mg/kg body weight) and is usually adequately covered by food. Potassium excretion is carried out up to 90% via the urine and around 10% via the gastrointestinal tract.
A potassium deficiency can occur as a result of increased renal excretion, extrarenal losses (e.g. diarrhoea, vomiting) and/or inadequate intake.
In addition to the treatment of potassium deficiency symptoms through reconstruction of the physiological balance, the following clinical effects are to be stated for the administration of potassium: as a result of competitive inhibition, potassium can counteract the effect of Digitalis and can therefore be used in the case of cardiac arrhythmia disorders caused by increased glycoside sensitivity, as well as Digitalis intoxication.

5.2 Pharmacokinetic properties

Potassium chloride is rapidly resorbed in the upper digestive tract following oral administration. In the case of an equalised potassium balance, around 90% of the oral intake of potassium is excreted within 8 hours and more than 98% is excreted within 24 hours via the urine. The distribution of the amount of potassium consumed is subject to the effect of numerous extrarenal mechanisms and cannot be anticipated under certain circumstances.
The almost linear release of potassium chloride from Kalinor-retard 600 mg occurs regardless of pH. The active ingredient amount is released over around 6–8 hours.
Bioavailability
According to comparative tests on the bioavailability of different dosage forms of potassium chloride, microencapsulated potassium chloride is fully available as a result of the release behaviour of Kalinor-retard 600 mg.

5.3 Preclinical safety data

Potassium salts are an irritant in higher concentrations. In the case of Kalinor-retard 600 mg, the distribution and controlled release of the potassium chloride from the pellets means that relatively high local concentrations of active ingredient are avoided.
No other toxic effects, including carcinogenic, mutagenic and reprotoxic effects, are to be expected with the planned type of application and duration, taking into consideration the contraindications and warnings.

6. PHARMACEUTICAL PARTICULARS

6.1 List of excipients

Capsule core: ethyl cellulose, magnesium stearate, sodium laurilsulfate.
Capsule cap and body: gelatine, titanium dioxide (E171), quinoline yellow (E104), erythrosine (E127).

6.2 Incompatibilities

Not applicable.

6.3 Shelf life

The expiry date of the product is indicated on the packaging materials.
Kalinor-retard 600 mg can be used for 6 months after opening.

6.4 Special precautions for storage

The container: keep amber glass container tightly closed. Store below 25°C.

6.5 Nature and contents of container

Amber type III glass containing hard gelatine two-piece capsules (upper capsule part opaque yellow, lower capsule part opaque white) containing practically odourless white free-flowing pellets.
Original pack containing 20 prolonged-release capsules, hard
Original pack containing 50 prolonged-release capsules, hard
Original pack containing 100 prolonged-release capsules, hard
Not all pack sizes may be marketed.

6.6 Special precautions for disposal

Unused medicinal products or waste materials should be disposed of in accordance with national requirements.

7. MARKETING AUTHORISATION HOLDER

Trustpharm LTD.

50 Hakishon Street, Tel-Aviv

8. MANUFACTURER

Desma GmbH
Peter-Sander-Str. 41b
55252 Mainz-Kastel
Germany

9. MARKETING AUTHORISATION NUMBER

170-46-36674-99

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