ינואר 2026

רופא/ה נכבד/ה,

רוקח/ת נכבד/ה,

חברת איי.אל.מדי-מרקט בע"מ מודיעה על העדכונים הבאים בעלון לצרכן במתכונת עלון לרופא של התכשיר:

MAGNESIUM SULFATE KALCEKS 50%
מגנזיום סולפט קלצקס 50%

חומר פעיל: MAGNESIUM SULFATE HEPTAHYDRATE

500 MG / 1 ML

צורת מינון:

SOLUTION FOR INJECTION / CONCENTRATE FOR SOLUTION FOR INJ/INF

עדכונים בעלון לצרכן במתכונת עלון לרופא

התוויה כפי שאושרה בתעודת הרישום:

Magnesium Sulfate Kalceks 50% solution for injection or infusion is indicated for:
the treatment of Magnesium deficiency in hypomagnesaemia, the prevention and treatment of hypomagnesaemia in patients receiving total parenteral nutrition,the control and prevention of seizures in severe pre-eclampsia,the control and prevention of recurrent seizures in eclampsia

ברצוננו להודיע שהעלון לצרכן במתכונת עלון לרופא עודכן.
בהודעה זו כלולים העדכונים המהותיים בלבד. תוספת טקסט מסומנת באדום ובקו תחתון, מחיקת טקסט מסומנת בקו ~~חוצה~~, החמרות מסומנות בצהוב. המידע המופיע בפרסום זה הינו חלקי, עבור המידע המלא יש לקרוא את העלון במלואו.

4.4 Special warnings and precautions for use

…
For the intramuscular route, use good clinical practice for intramuscular injections. The 50% solution should be used undiluted or diluted to 25%. The medicine should not be administered into ~~Avoid~~ muscles which are emaciated or atrophied.
…

4.5 Interactions with other medicinal products and other forms of interaction

Muscle relaxants
The action of non-depolarizing muscle relaxants ~~such as tubocurarine~~ is potentiated and prolonged by parenteral magnesium salts and magnesium sulfate enhances non-depolarizing muscle relaxant vecuronium action at adult muscle type nicotinic acetylcholine receptor *in vitro*.

Hakatif 3 St., Emek Hefer Industrial Park, Israel
3877701 T: 972-9-8844451 F: 972-9-8844919
www.medi-market.co.il

רחוב הקטיף 3, פארק תעשיות עמק חפר, מיקוד 3877701
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…

Calcium salts

Calcium salts may reduce the efficacy of magnesium. Several magnesium activated enzymes are inhibited by calcium.

Digitalis glycosides

Magnesium salts should also be administered with caution to those patients receiving digitalis glycosides. Magnesium has been shown to block the transient inward current carried by calcium, which digitalis glucosides generate.

…

Drug transporters

Pretreatment with magnesium has been reported in the rat to attenuate cisplatin (CDDP)-induced nephrotoxicity (CIN). Magnesium co-administration reduced platina accumulation by regulating the expression of the renal transporters, rOct2 and rMate1 and, thereby, attenuated CIN.

4.6 Fertility, pregnancy and lactation

Pregnancy

Magnesium sulfate easily crosses the placenta, and fetal serum levels will closely mirror maternal estimations.

…

Sufficient amount of magnesium may cross the placenta in mothers treated with high doses e.g. in pre-eclampsia, causing hypotonia and respiratory depression in newborns. ~~Safety in human pregnancy has not been established, Magnesium crosses the placenta.~~

…

If prolonged or repeated exposure to magnesium sulfate occurs during pregnancy monitoring of neonates for abnormal calcium or magnesium levels and skeletal adverse effects should be considered. Serum magnesium levels in preterm infants are higher than adult levels.

Breast-feeding

Magnesium concentration of mature human milk is 31 mg/l. Based on a mean milk transfer of 0.8 l/day and a concentration of magnesium in mature breast milk of 31 mg/l, a secretion of 25 mg/day of magnesium in breast milk is estimated during the first six months of lactation.

…

4.8 Undesirable effects

Injection/infusion-related effects

Too rapid administration: quickly developing vasodilatation, reduced blood pressure.

4.9 Overdose

Symptoms

Intravenous magnesium infusions can result in hypermagnesaemia even in the presence of normal kidney function.

…

~~*Signs:*~~

The potential symptoms of hypermagnesaemia are listed in the table below:

Magnesium levels			Manifestation of hypomagnesaemia/overdose symptoms
mg/dl	mEq/l	mmol/l	
<1.2	<1	<0.5	Tetany Seizures Arrhythmias
1.2-1.8	1.0-1.5	0.5-0.75	Neuromuscular irritability Hypocalcaemia Hypokalaemia
1.8-2.5	1.5-2.1	0.75-1.05	Normal magnesium level
2.5-5.0	2.1-4.2	1.05-2.1	Typically asymptomatic
5.0-7.0	4.2-5.8	2.1-2.9	Lethargy Drowsiness Flushing Nausea and vomiting Diminished deep tendon reflex
7.0-12	5.8-10	2.9-5	Somnolence Loss of deep tendon reflexes Hypotension ECG changes
>12	>10	>5	Complete heart arrest Apnoea Paralysis Coma

~~Mg plasma concentration (mmol/L)~~	~~Symptoms and undesirable effects~~
~~2 to 3~~	~~nausea, flushing, headache, lethargy, drowsiness, diminished deep tendon reflexes, platelet disaggregation~~
~~3 to 5~~	~~somnolence, hypocalcemia, absent deep tendon reflexes, hypotension, bradycardia, and ECG changes~~
~~>5~~	~~muscle paralysis, respiratory paralysis, coma. In most cases, respiratory failure precedes cardiac collapse~~
~~>7.0~~	~~Complete heart block and cardiac arrest~~

Treatment:

In symptomatic hypermagnesaemia, administration of calcium, usually at a dose of 100 to 200 mg intravenously over 5 to 10 min, antagonizes the toxic effects of magnesium. In patients with severe renal dysfunction, peritoneal dialysis or haemodialysis will rapidly and effectively lower serum magnesium levels.
~~Appropriate action should be taken to reduce the blood level of magnesium. In the event of overdosage, artificial ventilation must be provided until a calcium salt can be injected IV to antagonize the effects of magnesium.Neuromuscular blockade associated with hypermagnesaemia may be reversed with calcium salts, such as calcium gluconate, which should be administered intravenously in a dose equivalent to 2.5 to 5 mmol of calcium.~~

5. PHARMACOLOGICAL PROPERTIES

5.1 Pharmacodynamic properties

Magnesium is a cofactor of more than 300 enzymatic reactions, acting either on the substrate (especially for reactions involving ATP, where its binding to the nucleotide induces an adequate conformation and helps to weaken the terminal O–P bond of ATP, thereby facilitating the transfer of phosphate) or on the enzyme itself as a structural or catalytic component. As ATP utilisation is involved in many metabolic pathways, magnesium is essential in the intermediary metabolism for the synthesis of carbohydrates, lipids, nucleic acids and proteins, as well as for specific actions in various organs such as the neuromuscular or cardiovascular system. Magnesium can interfere with calcium at the membrane level or bind to membrane phospholipids, thus modulating membrane permeability and electrical characteristics. Magnesium has an impact on bone health through its role in the structure of hydroxyapatite crystals in bone.
~~Magnesium is the second most abundant cation in intracellular fluid and is an essential body electrolyte.~~
~~The body contains about 25 g of magnesium (about 14 mmol per kg body weight), approximately 60% of which is found in the skeleton. The daily amount of magnesium required by an adult is of the order of 270 to 350 mg (about 11 to 14 mmol). Symptomatic hypomagnesaemia is associated with a deficit of 0.5 – 1.0 mmol/kg.~~
~~Mechanism of action~~
~~It is a cofactor in numerous enzyme systems and is involved in phosphate transfer, muscle contractility and neuronal transmission.~~
~~Clinical efficacy and safety~~
~~The normal concentration of magnesium in plasma is around 0.65 to 1.0 mmol/L. Serum magnesium levels in the range 1.5 – 2.5 mmol/L cause vasodilatation in the peripheral and coronary circulation and corresponding increases of 20 – 25% in cardiac output and coronary blood flow. There is little change in heart rate or blood pressure.~~

~~Animal studies suggest that the effect of magnesium ions on cardiac muscle is to slow the rate of the sinoatrial node impulse formation and prolong conduction time. Limited data on patients with no evidence of heart disease indicate that intravenous magnesium prolongs PR interval, H (atria-His bundle) interval, antegrade AV nodal effective refractory period and sinoatrial conduction time. Within this concentration range there are no detectable effects on CNS function or neuromuscular transmission.~~

~~When given intravenously, magnesium sulfate has an immediate onset of action and its duration of activity is about 30 minutes. The onset of action of intramuscular magnesium sulfate is about one hour and its duration of action 3 – 4 hours.~~

5.2 Pharmacokinetic properties

…

Absorption and distribution

Magnesium is approximately equally distributed in bone and soft tissues, less than 1% being present in blood compartments. Cellular magnesium concentrations are constantly in the range of 17-20 mmol/l, despite rapid movements across cell membranes through multiple carriers and channels. Intracellular concentrations have been observed to decrease linearly with increasing age, without parallel changes in plasma magnesium concentration.

Total body magnesium content in a healthy adult is around 20-28 g. Approximately 99% of total body magnesium is intracellular. Of this, about 60% is in bone, either strongly bound to apatite, where it is difficult to mobilise, or loosely adsorbed at the surface of mineral crystals, where it can be easily mobilised in response to variation in dietary supply. About 25% of body magnesium is in muscle, where mitochondria are considered to be the intracellular storage site.

About 20-33% is bound to proteins, the remaining about 80% is unbound.
Only the ionized magnesium is physiologically active.

In the whole body, compartmental analysis using stable isotopes showed the existence of at least two major extraplasma compartments: the first compartment represents 80% of the rapidly exchangeable pool with an exchange rate of 48 mg/h; the second pool has a faster exchange rate of 179 mg/h. The sum of these rapidly exchangeable compartments amounts to around 25% of the magnesium body pool.The most important transport system to tissues appears to be the transient receptor potential melastatin 7 (TRPM7).

…

Elimination

The kidney plays a major role in magnesium homeostasis and maintenance of serum concentrations. Around 80% of serum magnesium is ultrafiltrable through the glomerulus, but only around 3% of the filtered fraction appears in the urine, owing to an efficient reabsorption taking place mainly (60-70%) in the thick ascending loop of Henle.

The main stimuli that increase urinary magnesium excretion are high natriuresis, osmotic load and metabolic acidosis; those that reduce it are metabolic alkalosis, parathyroid hormone and, possibly, calcitonin. The remaining part of the reabsorption takes place in the distal convoluted tubule via an active transcellular mechanism that finally controls the amount excreted in the urine.

Faecal loss is very limited. The endogenous routes of elimination of absorbed magnesium through the digestive tract are bile, pancreatic and intestinal juices, and intestinal cells; part of these endogenous losses can be reabsorbed. Using stable isotopes, endogenous faecal excretion has been determined to be 49 ± 11 mg/day in six healthy men aged 26-41 years, around 15 mg/day (0.1-0.9 mg/kg body weight/day) in 9- to 14-year-old boys and girls and from 4.7 to 21.7 mg/day in five girls aged 12-14 years, without influence of calcium intake.

Magnesium losses through sweat are likely to be modest, in the range of 1-5 mg/day, on the basis of a daily sweat volume of around 0.5 l/day.

Magnesium losses through menstruation in women are negligible.

Special populations

Paediatric population

The pharmacokinetics of intravenous magnesium sulfate have been studied in 2-14 years old children. The covariate analysis found that **only weight** was a significant predictor of magnesium concentrations in children. Estimated model parameters suggested that magnesium exhibits a short serum half-life (2.7 h) in children.

No intramuscular or subcutaneous pharmacokinetic data are available in children.

Elderly

No specific pharmacokinetic studies have been performed with parenteral (i.v., i.m. or s.c.) magnesium sulfate in the elderly.

Hepatic impairment

Liver diseases are often accompanied by hypoalbuminemia, which per se may have an effect on the level of total serum magnesium. The serum ionized/total magnesium ratio is inversely related to serum albumin. According to a study patients with the lowest levels of serum albumin have a greater part of their serum magnesium in free biologically active form, as ionized magnesium. In patients with alcoholic hepatopathy the mean concentrations of both serum total and ionized magnesium were lower than normal.

~~Distribution~~

~~Infused magnesium is distributed rapidly throughout the entire extracellular fluid space and some is taken up by bone but none by red blood cells.~~

~~About 40% of plasma magnesium is protein bound and is not ultrafiltrable. Most of the plasma magnesium is bound with albumin, globulin and proteins and therefore not filterable at the glomerulus. The injected magnesium sulfate is promptly bound to plasma proteins to the same degree as that of endogenous magnesium.~~

~~Elimination~~

~~The major excretory pathway is renal and parenteral loads are rapidly eliminated in this way. Faecal loss is very limited.~~

5.3 Preclinical safety data

Non-clinical data reveal no special hazard for humans based on conventional studies of safety pharmacology, repeated dose toxicity, genotoxicity, carcinogenic potential, toxicity to reproduction and development.~~There are no preclinical data of relevance to the prescriber additional to those already included in other sections above.~~

8. MANUFACTURER

~~HBM Pharma s.r.o, Sklabinska 30, 036 80 Martin, Slovakia~~
AS Kalceks, Krustpils iela 71E, Riga, LV-1057, Latvia

העלון לצרכן במתכונת עלון לרופא מצורף להודעה זו וכן נשלח לפרסום במאגר התרופות שבאתר האינטרנט של משרד הבריאות https://israeldrugs.health.gov.il .

ניתן לקבל את העלון מודפס ע"י פניה לבעל הרישום, חברת איי.אל.מדי-מרקט בע"מ.

בברכה,

איי.אל.מדי-מרקט בע"מ