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INSTRUCTION
for medical use

ASCOZIN® MAX

Composition:
active substance: vitamin C (L-ascorbic acid); zinc citrate trihydrate;
Each effervescent tablet contains: vitamin C (L-ascorbic acid) 1000 mg; zinc citrate trihydrate equivalent to zinc 10 mg;
excipients: sorbitol (E 420), anhydrous citric acid, sodium bicarbonate, anhydrous sodium carbonate, aspartame (E 951), acesulfame potassium, sodium chloride, IF1212 Orange flavour SD, annatto dye 1% colorant, polyethylene glycol 6000.

Pharmaceutical form. Effervescent tablets.
Basic physical and chemical properties: light orange to orange colour, round shape mottled tablets plain on both sides.

Pharmacotherapeutic group. Drugs of ascorbic acid (Vitamin C), combinations. ATC Code A11G B.

Pharmacological properties.
Pharmacodynamics.
Ascozin® Max is a combined drug that combines two drugs: water-soluble vitamin C – ascorbic acid and trace element – zinc.
Mechanism of action of ascorbic acid.
Ascorbic acid (vitamin C) is an important antioxidant, metabolic agent that regulates redox processes and increases the body's adaptive capability. Due to the low storage capacity of the body for vitamin C, a regular intake of sufficient amounts is essential to humans.
Ascorbic acid and its metabolite dehydroascorbic acid form a reversible redox system that is involved in many enzymatic reactions and forms the basis for the spectrum of action of vitamin C. Ascorbic acid functions as a cofactor in a number of hydroxylation and amidation reactions by transferring electrons to enzymes, providing recovery of various biological substrates. The importance of ascorbic acid to the human body is most clearly evident in clinically manifest vitamin C deficiency, i.e. scurvy. Ascorbic acid plays a key role in the production of hydroxyproline from proline, which in tum is essential to the development of functionally active collagen. The symptoms seen in scurvy, such as delayed wound healing, disturbances of bone growth, vascular fragility, and disorders of dentine formation, are the result of impaired collagen formation.
Mechanism of action of zinc

As with vitamin C, low levels of zinc may also adversely affect the healing rate of wounds, ulcers and decubitus. Zinc status is of major importance in maintenance of effective immune response, particularly T-cell-mediated response.

Pharmacokinetics.
Ascorbic acid.
Absorption: Ascorbic acid is absorbed primarily in the upper part of the small intestine via sodium-dependent active transport. When ascorbic acid is present in high concentrations, uptake occurs by means of passive diffusion. After oral administration of doses of 1–12 g, the proportion of ascorbic acid absorbed falls from approximately 50% to about 15%, though the absolute quantity of substance taken up continues to increase.
Distribution: The maximum physiological concentration of vitamin C is about 1500 mg. Plasma protein binding of ascorbic acid is approximately 24%. Serum concentrations are normally 10 mg/1 (60 mcmol/L). Concentrations of ascorbic acid below 6 mg/1 (35 mcmol/L) indicate that the intake of vitamin C is not always adequate, and concentrations below 4 mg/1 (20 mcmol/L) indicate that the intake is actually inadequate. In clinically manifest scurvy, serum concentrations are below 2 mg/1 (10 mcmol/L).
Metabolism: Ascorbic acid is metabolised partly via dehydroascorbic acid to oxalic acid and other products. When ingested in excessive quantities, however, ascorbic acid is largely excreted in unchanged fom1 in the urine and faeces. Ascorbic-acid-2- sulphate also appears as a metabolite in the urine.
Excretion. The elimination half-life of ascorbic acid depends on the route of administration, the quantity administered and the rate of absorption. Following an oral dose of 1 g the half-life is about 13 hours. When 1–3 g of vitamin C/day is taken, the main route of excretion is renal. With doses exceeding 3 g, increasing quantities are excreted unchanged in the faeces.
Zinc
Absorption. Zinc is absorbed all along the small intestine. The absorption of zinc (ionic) administered in solution on an empty stomach ranges from 41–79%, while the zinc present in foods or that given as a supplement with meals is absorbed in the range of 10–40%.
Distribution. To maintain zinc homeostasis, its total content in the body is partially controlled by regulating the efficiency of intestinal absorption and excretion of this trace element from endogenous depots. The total zinc content in adults ranges from approximately 2.3 mmol (1.5 g) in women to 3.8 mmol (2.5 g) in men. Zinc is present in all organs, tissues, fluids and secretions of the body. Zinc is mainly an intracellular ion, in particular more than 95% of all zinc is in cells. Zinc binds to all cell organelles, but approximately 60–80% of cellular zinc is contained in the cytosol.
Metabolism. The total amount of zinc present in most tissues is much greater than its total amount in blood plasma. Thus, relatively small fluctuations in zinc content in tissues such as the liver can have a significant effect on plasma zinc concentrations. All absorbed zinc passes to the tissues through the blood plasma, and it is estimated that the concentration of zinc in the blood plasma changes approximately 130 times a day. There is no special “depot” of zinc.
Studies involving volunteers using low-zinc diets (2.6–3.6 mg/day/40–55 mmol/day) have shown that circulating zinc levels and zinc-containing enzyme activity can be maintained within normal limits for several months, emphasizing efficiency of the mechanism of zinc homeostasis.
Excretion. The main route of excretion of endogenous zinc is the gastrointestinal tract with terminal excretion in the feces. When administered orally or intravenously, the studied doses of zinc are excreted in the urine only from 2 to 10%, the rest is excreted in the feces. In humans, fecal excretion can range from <15 μmol/day (1 mg/day) with very low zinc intake to more than 80 μmol/day (5 mg/day) with very high zinc intake. Approximately 6 to 9 μmol (400–600 μg) of zinc is usually excreted in the urine daily.

Clinical characteristics.

Indications.

Treatment of vitamin C and zinc deficiency.

Contraindications.

Hypersensitivity to any component of the drug.
Nephrolithiasis, in particular in the anamnesis.
Urolithiasis of oxalate origin or oxaluria.
Severe kidney disease, severe renal failure (including dialysis patients).
Hemochromatosis.

Interaction with other medicinal products and other forms of interactions.

Interactions associated with ascorbic acid

Desferrioxamine: ascorbic acid may enhance tissue iron toxicity, especially in the heart, causing cardiac decompensation.
Cyclosporine: ascorbic acid may reduce cyclosporine blood levels.
Warfarin: high doses of ascorbic acid may interfere with the effectiveness of warfarin.
Effect on the results of laboratory tests
Since ascorbic acid is a potent reducing agent, it can cause chemical changes in laboratory tests that include redox reactions such as glucose, creatinine, carbamazepine, uric acid, and inorganic phosphates in urine, serum, and fecal occult blood. When using the drug, it is recommended to consult the manufacturer's information to determine whether ascorbic acid affects the results of laboratory tests.

Interactions associated with zinc

Zinc forms complexes with certain substances (including tetracycline antibiotics, quinolone antibiotics, penicillamine) resulting in decreased absorption of both substances. As these interactions occur in the gastro-intestinal tract, the potential for interaction should be reduced by taking the product separately from other drugs. It is usually sufficient to separate the intake by at least 2 hours before or 4-6 hours after ingestion of the other drug, unless otherwise specified.
Copper: zinc may reduce copper absorption.

Special warnings and precautions for use.

Patients suffering from renal insufficiency should consult a physician or healthcare professional prior to intake of large doses of ascorbic acid (see section "Overdose").
Do not exceed the recommended doses. Acute or chronic overdose (> 2 g/day) increases risk of adverse effects including formation of calcium oxalate deposits, acute tubular necrosis, and/or renal failure (see section "Overdose").
Patients suffering from glucose-6-phosphatase deficiency should not take higher than the recommended dose. Overdose of ascorbic acid in this patient population has been associated with hemolytic anemia (see section "Overdose").
Patients receiving other single vitamins, multivitamin preparations or any other medication or those under medical care must consult a health care professional before taking this product (see sections "Interaction with other medicinal products and other forms of interactions" and "Overdose").
Ascozin® Max should be used separately from other medicines at intervals of 4 hours, unless otherwise specified (see section "Interaction with other medicinal products and other forms of interaction").
Vitamin C may interfere with laboratory tests resulting in false readings. Inform your physician when taking this product and diagnostic measures are planned or done.
Vitamin C may interfere with test kits and meters measuring glucose levels resulting in false results. Please check the package insert of the test kit or meter for guidance (see section "Interaction with other medicinal products and other forms of interaction").

Ascozin® Max contains sorbitol, so you should consult your doctor before taking it in case of intolerance to certain sugars.
Also, this drug contains aspartame, which is a derivative of phenylalanine, which is dangerous for patients with phenylketonuria.
1 tablet of Ascozin® Max contains 158.37 mg of sodium, therefore patients who follow a diet with a controlled sodium content should use this drug with caution.

Use during pregnancy and lactation.
Pregnancy and lactation
Since there is lack of controlled studies in humans evaluating the risk of use of the medicinal product during pregnancy or lactation, this medicinal product should not be used during pregnancy or lactation.
Fertility
To date, there is no evidence suggestive that ascorbic acid and/or zinc causes adverse effects on fertility in humans.

Effects on ability to drive and use machines.
The product has no or negligible influence on the ability to drive and use machines.

Posology and method of administration.
Ascozin® Max is used by adults for 1 tablet per day dissolved in a glass of water (200 ml).

Children.
Ascozin® Max is not intended for use by children (under 18 years of age).

Overdose.
There is no evidence that this product can lead to an overdose when used as recommended.
Allowance should be made for intake of vitamin C and zinc from all other sources.
Clinical signs and symptoms, laboratory findings, and consequences of overdose are highly diverse, dependent on an individual's susceptibility and surrounding circumstances.
General manifestations of overdose with vitamin C and/or zinc may include increase of gastrointestinal disturbances including diarrhea, nausea, and vomiting.
If such symptoms occur, the product should be discontinued and a healthcare professional consulted.
Specific clinical manifestations may include the following:
Associated with ascorbic acid
Acute or chronic overdose of vitamin C may significantly elevate serum and urinary oxalate levels. In some cases, this may lead to hyperoxaluria, calcium oxalate crystalluria, calcium oxalate deposition, kidney stone formation, tubulointerstitial nephropathy, and acute renal failure. Individuals with mild to moderate renal insufficiency may be susceptible to these effects of vitamin C toxicity at lower doses and should consult a health care professional before use of the product.
Overdose of ascorbic acid may result in oxidative hemolysis or disseminated intravascular coagulation in patients with glucose-6-phosphate dehydrogenase deficiency.
Associated with zinc
Zinc overdose can cause irritation and corrosion of the gastrointestinal tract, acute renal tubular necrosis, interstitial nephritis, copper deficiency, sideroblastic anemia, and myeloneuropathies.
If overdose with the product is suspected, intake should be discontinued and a health care professional consulted for treatment of clinical manifestations. Vitamin C is removed by hemodialysis.

Adverse effects.
Gastrointestinal disorders: diarrhoea, nausea, vomiting, gastrointestinal and abdominal pain.
Skin disorders: itching, skin rash, edema.

Immune system disorders: hypersensitivity reactions, allergic reactions, anaphylactic reactions, anaphylactic shock, asthma, angioneurotic edema, urticaria, cardiorespiratory distress.
Reporting of suspected adverse reactions
Reporting of suspected adverse reactions after drug registration is an important procedure. This allows you to continue to monitor the benefit/risk ratio for this medicine. Medical staff are asked to report all suspected adverse reactions to the State Expert Centre of the Ministry of Health of Ukraine and the applicant via the feedback form website: https://kusum.ua/pharmacovigilance/.

Shelf life.
2 years.

Storage conditions.
Keep in a tightly closed tube.
Store in the original package at the temperature not more than 25°C.
Keep out of reach of children.

Package.
10 tablets in a tube, 1 tube in a carton box.

Condition of supply.
Without prescription.

Manufacturer.
KUSUM HEALTHCARE PVT LTD.

Manufacturer's location and address of the place of business.
Plot No. M-3, Indore Special Economic Zone, Phase-II, Pithampur, Distt. Dhar, Madhya Pradesh, Pin 454774, India.

Date of last revision.