• 12 to 18 years: 500 to 1000 mg daily in 1 or 2 divided doses Ascorbic acid may also be given with desferrioxamine to increase the excretion of iron; children from 1 month of age may be given the same dose as adults.Vitamin C may also be given in the treatment of some inherited metabolic disorders such as tyrosinaemia type III,transient tyrosinaemia of the newborn, glutathionesynthase deficiency, and Hawkinsinuria. The BNFC suggeststhe following oral doses for specialist use:

• neonate: 50 to 200 mg daily, adjusted as necessary

• 1 month to 18 years: 200 to 400 mg daily in 1 or 2 divideddoses, adjusted as necessary; up to 1 g daily may berequired

Intramuscular injection (preferred route if parenteral administration is necessary)

Preparation and administration

1. Withdraw the required dose.
2. Inject slowly high into the gluteal muscle, 5 cm below the iliac crest. Rotate injection sites for subsequent injections.

Intermittent intravenous infusion

Preparation and administration

1. Withdraw the required dose and add to 100mL NaCl 0.9% or Gluc 5%.
2. The solution should be clear. Inspect visually for particulate matter prior to administration and discard if present.
3. Give by IV infusion over 15-30 minutes.

Incompatible with

Aminophylline, benzylpenicillin, chloramphenicol sodium succinate, doxapram, erythromycin lactobionate, hydrocortisone sodium succinate, propofol, sodium bicarbonate.

Compatible with

Flush: NaCl 0.9% Solutions: NaCl 0.9%, Gluc 5%, Gluc-NaCl, Hartmann's, Ringer's

Interactions

For the effect of ascorbic acid on various drugs see under desferrioxamine, hormonal contraceptives, HRT, fluphenazine (under Chlorpromazine, and warfarin.)

Ascorbic acid may increase the absorption of iron i n irondeficiencystates. Omeprazole may affect the bio availability of dietary vitamin C

BREAST FEEDING

Vitamin C is excreted into breast milk and thus supplied to breast-fed infants. Women in developing countries have significantly lower concentrations of ascorbic acid in their breast milk compared with those in developed countries, 1 and seasonal variation in consumption of foods rich in vitamin C leads to variable amounts of ascorbic acid in breast milk. Supplementation with high-dose ascorbic acid (1 g daily for 10 days) led to significant increases in breast-milk concentrations in both European and African women; 1 however, the overall effect was modest in European women compared with a threefoldincrease seen in African women. Lower doses of 100 mg daily for 10 days approximately doubled the ascorbic acid breast milk content in the latter, as did supplementation with orange juice 3 or 5 times a week; a significant day to-day effect was also noted, indicating that the ascorbic acid content of breast milk is regulated. In a small study involving different doses of ascorbic acid supplements, women in West Africa showed that increased intake caused an increase in the ascorbate concentration of breast milk, but concentrations approached a plateau at higher intakes; it was concluded that about 100 to 120 mg of vitamin C daily was needed to achieve acceptable plasma and breast-milk ascorbate concentrations in this population.

ADVERSE EFFECTS:

Ascorbic acid is usually well tolerated. Large doses are reported to cause diarrhoea and other gastrointestinal disturbances. It has also been stated that large doses may result in hyperoxaluria and the formation of renal calcium oxalate calculi and ascorbic acid should therefore be given with care to patients with hyperoxaluria(see Effects on the Kidneys, below) . Tolerance may be induced with prolonged use of large doses, resulting in symptoms of deficiency when intake is reduced to normal. Prolonged or excessive use of chewable vitamio C preparations may cause erosion of tooth enamel.

Large doses of ascorbic acid have resulted in haemolysis in patients with G6PD deficiency (see Effects on the Blood, below) .

Human Requirements

A daily dietary intake of about 30 to 100 mg of vitamin C has been recommended for adults. There is, however, wide variation in individual requirements. Humans are unable to form their own ascorbic acid and so a dietary source is necessary. Most dietary ascorbic acid is obtained from fruit and vegetable sources; only small amounts are present in milk and animal tissues. Relatively rich sources include rose hips (rose fruit), black currant, citrus fruits, leafy vegetables, tomatoes, potatoes, and green and red peppers. Ascorbic acid is readily destroyed during cooking processes. Considerable losses may also occur during storage.

Usage in Pregnancy: Pregnancy Category C

Animal reproduction studies have not been conducted with Ascorbic Acid Injection. It is also not known whether Ascorbic Acid Injection can cause fetal harm when administered to a pregnant woman or can affect reproduction capacity. Ascorbic Acid Injection should be given to a pregnant woman only if clearly needed.

Nursing Mothers: Caution should be exercised when Ascorbic Acid Injection is administered to a nursing woman.

OVERDOSAGE:

Stop treatment and give supportive therapy as appropriate.

Storage: -Store in cool, dry & dark place. Protect from light & moisture.

Improper Storage may deteriorate the product

Medicine: - Keep out of reach of children.

Presentation:- 500 mg /2ml Ascorbic Acid in a glass vial.

Marketed by:
AMERICAN REMEDIES
Cure & Care with Research
American Remedies Healthcare Pvt. Ltd.
(An ISO 9001-2015 Certified Company)
Sale No. 101 to 111, 1st Flr., Bldg. No. E-164, Hardhar Complex, Bhiwandi, Mumbai- 421302. E-mail: info@american-remedies.in
ICD: American Remedies LLC, DE, USA
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Scan for Batch Certificate

For the use only of a Registered Medical Practitioner of a Hospital or a Laboratory

Ascorbic Acid Injection IP

AMERICAN

For Intravenous Infusion Use only
Any Unused Portion must be Discarded within 4 hrs.

Ascorcan 1.5g

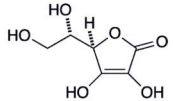
Composition:-

Each 2 ml Contains:-

Sodium Ascorbate	IP	
Eq. to Ascorbic Acid		500 mg
Water for Injections	IP	q.s.

DESCRIPTION:-

Ascorbic Acid (vitamin C) is a water-soluble vitamin. It occurs as a white or slightly yellow crystal or powder with a light acidic taste. It is an antiscorbutic product. On exposure to air and light it gradually darkens. In the dry state it is reasonably stable in air, but in solution it rapidly oxidizes. Ascorbic Acid is freely soluble in water; The chemical name of Ascorbic Acid is L-ascorbic acid. The molecular formula is $C_6H_8O_6$ and the molecular weight is 176.13.



Ascorbic Acid

PHARMACOLOGY

Pharmacokinetics

Ascorbic acid is readily absorbed from the gastrointestinal tract and is widely distributed in the body tissues. Plasma concentrations of ascorbic acid rise as the dose ingested isincreased until a plateau is reached with doses of about 90 to 150 mg daily. Body stores of ascorbic acid in health are about 1.5 g although more may be stored at intakes above 200 mg daily. The concentration is higher in leucocytes and platelets than in erythrocytes and plasma. In deficiency states the concentration in leucocytes declines later and at a slower rate, and has been considered to be a better criterion for the evaluation of deficiency than the concentration in plasma.

Ascorbic acid is reversibly oxidised to dehydroascorbicacid; some is metabolised to ascorbate-2-sulfate, which is inactive, and oxalic acid which are excreted in the urine. Ascorbic acid in excess of the body's needs is also rapidly eliminated unchanged in the urine; this generally occurs with intakes exceeding 100mg daily. Ascorbic acid crosses the placenta and is distributed into breast milk. It is removed by haemodialysis.

DOSAGE AND ADMINISTRATION

Vitamin C, a water-soluble vitamin, is essential for the synthesis of collagen and intercellular material. Vitamin C deficiency develops when the dietary intake is inadequate. It is rare in adults, but may occur in infants, alcoholics, or the elderly. Deficiency leads to the development of a well. defined syndrome koown as scurvy. This is characterised by capillary fragility, bleeding (especially from small blood vessels and the gums), normocytic or macrocytic anaemia, cartilage and bone lesions, and slow healing of wounds.

Vitamin C is used in the treatment and prevention of deficiency. It completely reverses symptoms of deficiency. It is usually given orally, the preferred route, as ascorbic acid. Ascorbic acid or sodium ascorbate may be given parenterally, preferably by the intramuscular route, but also by the intravenous or subcutaneous routes. Doses of 25 to 75 mg daily in the prevention of deficiency, and 250 mg or more daily in divided doses for the treatment of deficiency, have been recommended.

Oral ascorbic acid 100 to 200 mg daily may be given with desferrioxamine in the treatment of patients with chronic iron overload, to improve the chelating action of desferri-oxamine, thereby increasing the excretion of iron to reduce toxicity ascorbic acid should not be started until 1 month after starting desferrioxamine. Ascorbic acid should be given separately from food since it can enhance iron absorption. In iron. Deficiency states ascorbic add is used to increase gastrointestinal iron absorption and ascorbic acid or ascorbate salts are there foreinclded in some oral iron preparations. Ascorbic acid or sodium ascorbate have been used in treating methaemoglobinaemia.

Ascorbic acid has been used to acidify urine. It has also been tried in the treatment of many other disorders (see below) but there is little evidence of beneficial effect. For doses in children, see Administration in Children, below. Eye drops containing potassium ascorbate (ascorbic acid 10 %) have been used for the treatment of chemical eye bums; they may be used with sodium citrate eye drops (see Uses and Administration of Bicarbonate.

Ascorbic acid and calcium and sodium ascorbates are used as antoxidants in pharmaceutical manufacturing and in the food industry.

Administration in children.

Vitamin C is used in children to prevent and treat deficiency which can lead to scurvy. It is usually given orally as ascorbic acid (although traditional sources for supplementation have included citrus juices, black currant, and rose hip syrup) ; when the oral route is not feasible or malabsorption is suspected the vitamin may be given parenterally, preferably by the intramuscular route, but also by the intravenous or subcutaneous routes. Doses used for prevention of deficiency are similar to those used in adults, see Uses and Administration, above. In the treatment of scurvy, oral or parenteral doses range from 100 to 300 mg daily, although higher oral doses have also been suggested; the BNFC suggests oral doses according to age:

• 1 month to 4 years: 125 to 250 mg daily in 1 or 2 divideddoses

• 4 to 12 years: 250 to 500 mg daily in 1 or 2 divided doses