Ascorbic Acid Injection, USP

**Clinical Pharmacology**

**Mechanism of Action**: Ascorbic Acid Injection, USP, is usually administered intramuscularly or intravenously. The injection contains 500 mg of ascorbic acid per milliliter. It is a water-soluble, highly reducing vitamin that is readily absorbed following parenteral injection. Ascorbic acid is excreted in breast milk. Caution should be exercised when administering to women while nursing.

**Pharmacokinetics**:

- **Absorption**: Ascorbic acid is well absorbed following parenteral administration. It is rapidly distributed throughout the body and is excreted mainly in the urine.
- **Half-life**: The half-life of ascorbic acid is approximately 40 minutes in healthy individuals.
- **Excretion**: Most of the administered dose is excreted in the urine within 24 hours.

**Indications and Uses**:

- For the treatment of ascorbic acid deficiency.
- For the prevention and treatment of deficiencies of vitamin C.
- In the treatment of conditions characterized by inadequate intake of vitamin C.
- In the treatment of conditions characterized by inadequate intake of vitamin C, especially in surgical patients and other who cannot take oral vitamins.
- Acute ascorbic acid deficiency may be associated with extensive injuries and other states of ascorbic acid deficiency.
- The solution also may be injected intramuscularly or subcutaneously. The solution has a pH of 5.5 to 7.0 and is approximately 1.4 mg/100 mL. When the body is saturated with ascorbic acid, the plasma concentration reaches a threshold level of about 8 mg/100 mL. Further increases in dosage do not further elevate the plasma concentration above this level. The threshold for vitamin C; the vitamin is excreted by the kidney in large amounts only when the plasma concentration exceeds this threshold, which is approximately 8 mg/100 mL.

**Contraindications**:

- Ascorbic acid has on occasion been used as a specific antidote for symptoms and signs of vitamin C deficiency.

**Adverse Reactions**:

- Pain and swelling at the site of injection have been reported in some patients.

**Overdose**:

- Excessively rapid intravenous injection may result in temporary faintness or dizziness. Excessively rapid intravenous injection may result in temporary faintness or dizziness. Excessively rapid intravenous injection may result in temporary faintness or dizziness. Excessively rapid intravenous injection may result in temporary faintness or dizziness. Excessively rapid intravenous injection may result in temporary faintness or dizziness. Excessively rapid intravenous injection may result in temporary faintness or dizziness. Excessively rapid intravenous injection may result in temporary faintness or dizziness. Excessively rapid intravenous injection may result in temporary faintness or dizziness. Excessively rapid intravenous injection may result in temporary faintness or dizziness.

- Since high internal pressure may develop on long storage, precautions should be taken. It must be discarded within 6 hours.

- The mental state of a person who has a known hypersensitivity to any component of this preparation.

- Contraindicated in those persons who have a known hypersensitivity to any component of this preparation.

**Interactions**:

- Ascorbic acid is a strong reducing agent, it interferes with numerous laboratory tests based on oxidation-reduction reactions. Diabetics taking more than 500 mg of ascorbic acid daily may obtain false readings of their urinary glucose test. No exogenous ascorbic acid is necessary to maintain normal concentrations of plasma vitamin C. It is, therefore, unnecessary to give large amounts of the vitamin to patients with normal renal function. Ascorbic acid does not require a therapeutic dosage that is substantially different from that required for nutritional purposes. The amount and frequency of administration of ascorbic acid should be guided by the patient's condition and the state of ascorbic acid deficiency.

**Usage in pregnancy**: Vitamin C deficiency may result in poor wound healing and increased susceptibility to infection. The solution also may be injected intramuscularly or subcutaneously. The solution has a pH of 5.5 to 7.0 and is approximately 1.4 mg/100 mL. When the body is saturated with ascorbic acid, the plasma concentration reaches a threshold level of about 8 mg/100 mL. Further increases in dosage do not further elevate the plasma concentration above this level. The threshold for vitamin C; the vitamin is excreted by the kidney in large amounts only when the plasma concentration exceeds this threshold, which is approximately 8 mg/100 mL.

**Pregnancy Category**: The solution contains no preservatives. It does not require a preservative. It is not necessary to add a preservative to the solution before injection.

**Instructions for Dispensing**:

- Ascorbic Acid Injection, USP, is intended for intramuscular or intravenous injection. It is not intended for administration by the oral route.

**Dosage and Administration**:

- Adult Dosage: For ascorbic acid deficiency, the usual adult dosage is 1 to 2 g daily for 4 to 7 days. For extensive burns may require 200 to 500 mg (0.4 to 1.0 mL) daily to maintain adequate levels of vitamin C. In the presence of previous malnutrition, the vitamin should be administered in a dosing regimen.