Trimax

Ceftriaxone

COMPOSITION

Trimax 2 gm IV Injection: Each vial contains 2 gm Ceftriaxone as sterile Ceftriaxone Sodium USP.
Trimax 1 gm IV/IM Injection: Each vial contains 1 gm Ceftriaxone as sterile Ceftriaxone Sodium USP.
Trimax 500 mg IV/IM Injection: Each vial contains 500 mg Ceftriaxone as sterile Ceftriaxone Sodium USP.
Trimax 250 mg IV/IM Injection: Each vial contains 250 mg Ceftriaxone as sterile Ceftriaxone Sodium USP.
Lidocaine solution for IM use: Each ampoule contains 2 ml or 3.5 ml 1% Lidocaine Hydrochloride BP Injection for reconstitution.
Water for Injection for IV use: Each ampoule contains 5 ml or 10 ml sterile Water for Injection BP for reconstitution.

PHARMACOLOGY

Ceftriaxone (**Trimax**) is a semisynthetic third generation broad spectrum parenteral cephalosporin antibiotic. It has potent bactericidal activity against a wide range of Gram-positive and especially Gram-negative organisms. The spectrum of activity includes both aerobic and some anaerobic species. Ceftriaxone like other cephalosporins and penicillins, kills bacteria by interfering with the synthesis of the bacterial cell wall. Ceftriaxone has a high degree of stability in the presence of beta lactamases, both penicillinases and cephalosporinases, of gram-positive and gram-negative bacteria.

PHARMACOKINETICS

Ceftriaxone (**Trimax**) is not absorbed after oral administration and must be given parenterally. Following IM or IV administration, Ceftriaxone is widely distributed into body tissues and fluids including gallbladder, lungs, bone, bile, prostate adenoma tissue, uterine tissue, atrial appendage, sputum, tears, and pleural, peritoneal, synovial, ascitic, and blister fluids. It is eliminated mainly as drug unchanged, approximately 60% of the dose being excreted in the urine (almost exclusively by glomerular filtration) and the remainder via the biliary and intestinal tracts.

INDICATIONS

Renal and urinary tract infections; lower respiratory tract infections, particularly pneumonia; gonococcal infections; skin and soft tissue, bone and joint infections; bacterial meningitis; serious bacterial infections e.g. septicemia; ENT infections; typhoid fever; infections in cancer patients; prevention of post-operative infection; pre-operative prophylaxis of infections associated with surgery.

DOSAGE AND ADMINISTRATION

Trimax can be administered either intravenously or intramuscularly.
Adults: The usual adult daily dose is 1-2 g once daily, (or twice daily in equally divided doses) depending on the type and severity of infection. The daily dose may be increased, but should not exceed 4 g. For preoperative use (surgical prophylaxis), a single dose of 1 g administered intravenously 0.5-2 hours before surgery is recommended. In elderly patients, the dosage do not require modification provided that renal and hepatic functions are satisfactory. Uncomplicated Gonorrhea: For the treatment of gonorrhea (penicillinase producing and non-penicillinase producing strains), a single intramuscular dose of 250 mg is recommended.
Children (Over 6 weeks to under 12 years): 20-50 mg/kg daily as a single dose, maximum upto 80 mg/kg should be given through intravenous infusion only. For the treatment of skin and skin structure infections the recommended total daily dose is 50 to 75 mg/kg given once a day (or in the equally divided doses twice a day). For the treatment of serious miscellaneous infections other than meningitis, the recommended total daily dose is 50 to 75 mg/kg, given in divided dose every 12 hours, the total daily dose should not exceed 2 g. For the treatment of meningitis, it is recommended that, the initial therapeutic dose is 100 mg/kg/day (not to exceed 4g daily) is recommended. The daily dose may be administered once a day (or in the equally divided doses every 12 hours). The usual duration of therapy is 7 to 14 days.
Use in elderly: The recommended dosages for adults do not require modification in the cases of elderly patients provided that renal and hepatic functions are satisfactory.
Renal and hepatic impairment: In patients with impaired renal function, there is no need to reduce the dosage of Ceftriaxone provided liver function is intact. Only in cases of pre-terminal renal failure (Ceftriaxone clearance <10 ml per minute) the daily dosage should be limited to 2 g or less. In patients with liver damage there is no need for dosage adjustment provided renal function is intact.
Duration of therapy: The duration of therapy varies according to the course of the disease; usually duration of therapy is 4-14 days.

RECONSTITUTION & PREPARATION

Trimax can be administered either intravenously or intramuscularly. Solutions containing lidocaine should not be administered intravenously.
For IM Injection: Add 2 ml of Lidocaine Hydrochloride BP 1% injection to 250 mg or 500 mg vial where as 3.5 ml of Lidocaine Hydrochloride BP 1% injection to 1 gm vial and shake the vial well until the powder is dissolved properly.

For IV Injection: Add 5 ml of water for injection BP to 250 mg or 500 mg vial, 10 ml of water for injection BP to 1 gm vial where as 20 ml of water for injection BP to 2 gm vial and shake the vial well until the powder is dissolved properly.

The use of freshly reconstituted solution is recommended. Its efficacy is maintained for at least 6 hours at room temperature or 24 hours in the refrigerator at 2-8 °C.

DIRECTION FOR USE

IM Injection: 250 mg or 500 mg Trimax should be dissolved with 2 ml of 1% Lidocaine Hydrochloride BP injection or 1 gm with 3.5 ml of 1% Lidocaine Hydrochloride BP injection. The solution should be administered by deep intramuscular injection. Dosage greater than 1 gm should be divided and injected at more than one site. Solution of Lidocaine Hydrochloride should not be administered intravenously.
IV Injection : 250 mg or 500 mg Trimax should be dissolved with 5 ml of Water for Injection BP, 1 gm with 10 ml of Water for Injection BP & 2 gm with 20 ml Water for Injection BP. The solution should be administered over 2-4 minutes, directly into the vein or via the tubing of an intravenous infusion.

CONTRAINDICATIONS

Ceftriaxone should not be given to patients with a history of hypersensitivity to cephalosporin antibiotics. It is contraindicated in premature infants during the first 6 weeks of life.

PRECAUTIONS

Its safety in human pregnancy has not been established. Therefore it should not be used in pregnancy unless absolutely indicated. Only minimal amount of ceftriaxone is excreted in breast milk, so mothers receiving ceftriaxone should not breast-feed. The stated dosage should not be exceeded. In severe renal impairment accompanied by hepatic insufficiency, dosage reduction is required.

SIDE EFFECTS

Ceftriaxone has been generally well tolerated, side-effects being relatively infrequent, usually mild and transient. The most common side-effects are gastro-intestinal, consisting mainly of loose stools, diarrhoea, nausea, vomiting, stomatitis and glossitis. Cutaneous reactions include maculopapular rash, pruritus, urticaria, oedema and erythema multiforme. Haematological reactions include anaemia, leucopenia, neutropenia, thrombocytopenia, eosinophilia, agranulocytosis. Headache and dizziness, drug fever and transient elevations in liver function tests have been reported in few cases.

USE IN PREGNANCY & LACTATION

Ceftriaxone has not been associated with adverse effects on fetal development in laboratory animals, but its safety in human pregnancy has not been established. **Pregnancy Category 'B'**. Therefore, it should not be used in pregnancy unless absolutely indicated. Because ceftriaxone is distributed into milk, the drug should be used with caution in nursing women.

DRUG INTERACTIONS

No impairment of renal function or increased nephrotoxicity has been observed in human after simultaneous administration of ceftriaxone with diuretics, or with aminoglycosides. A possible disulfiram-like reaction may occur with alcohol. Other significant interactions: Ceftriaxone doesn't interfere with the protein binding of bilirubin. Simultaneous administration of probenecid doesn't alter the elimination of ceftriaxone.

STORAGE AFTER RECONSTITUTION

Trimax sterile powder should be stored at Room Temperature of 77°F (25°C) or below and protected from light. After reconstitution, protection from normal light is not necessary. The color of solution ranges from light yellow to amber.
Trimax IM solution: It remains stable (loss of potency less that 10%) for 3 days and 10 days at Room Temperature (25°C) & Refrigerated condition (4°C) respectively in case of concentration 100 mg/ml; for 24 hours & 3 days at Room Temperature (25°C) & Refrigerated condition (4°C) respectively in case of concentration 250 or 350 mg/ml.
Trimax IV solution: At concentrations of 10, 20 & 40 mg/ml, it remains stable (loss of potency less then 10%) for 3 days at Room Temperature (25°C) & 10 days at Refrigerated condition (4°C).
After the indicated stability time periods, unused portions of solutions should be discarded.
As with other cephalosporins, the color of ceftriaxone powder, as well as its solutions, tend to darken depending on storage conditions; however, when stored as recommended, the product potency is not adversely affected.

HOW SUPPLIED

IM Injection:
Trimax 1 gm IM Injection: Each box contains 1 vial of Ceftriaxone 1 gm with 1 ampoule of 3.5 ml 1% Lidocaine Hydrochloride BP injection in a blister pack & a 5 ml sterile disposable syringe.
Trimax 500 mg IM Injection: Each box contains 1 vial of Ceftriaxone 500 mg with 1 ampoule of 2 ml 1% Lidocaine Hydrochloride BP injection in a blister pack, a 3 ml sterile disposable syringe & a baby needle.
Trimax 250 mg IM Injection: Each box contains 1 vial of Ceftriaxone 250 mg with 1 ampoule of 2 ml 1% Lidocaine Hydrochloride BP injection in a blister pack, a 3 ml sterile disposable syringe & a baby needle.

IV Injection:
Trimax 2 gm IV Injection: Each box contains 1 vial of Ceftriaxone 2 gm with 2 ampoules of 10 ml Water for Injection BP each, a 20 ml sterile disposable syringe, a butterfly needle & an alcohol pad.
Trimax 1 gm IV Injection: Each box contains 1 vial of Ceftriaxone 1 gm with 1 ampoule of 10 ml Water for Injection BP in a blister pack & a 10 ml sterile disposable syringe, a butterfly needle & an alcohol pad.
Trimax 500 mg IV Injection: Each box contains 1 vial of Ceftriaxone 500 mg with 1 ampoule of 5 ml Water for Injection BP in a blister pack & a 5 ml sterile disposable syringe.
Trimax 250 mg IV Injection: Each box contains 1 vial of Ceftriaxone 250 mg with 1 ampoule of 5 ml Water for Injection BP in a blister pack & a 5 ml sterile disposable syringe.

Manufactured for
Pharmasia Limited
Gojariapara, Bhawal Mirzapur,
Gazipur, Bangladesh
by The IBN SINA Pharmaceutical Industry Ltd.
Shafipur, Kaliakoir, Gazipur, Bangladesh.
P505004

Pharmasia