CefTRIAXone Sodium

Brand names

Rocephin

Medication error potential

ISMP recommends tall man letters (not FDA approved) to decrease confusion between cefTRIAXone and ceFAZolin, cefoTEtan, cefOXitin, and cefTAZidime.[1]

Contraindications and warnings

Contraindications: Should not be used in those with a known allergy to ceftriaxone or another cephalosporin antibiotics.[3]

Ceftriaxone can displace bilirubin from its binding sites on serum albumin and may cause kernicterus and encephalopathy in hyperbilirubinemic neonates, especially premature neonates.[3]

Ceftriaxone must not be coadministered with calcium-containing IV solutions (e.g., Ringer's solution, Hartmann's solution, and PN formulations that contain calcium) in neonates because of the risk of precipitation of ceftriaxone–calcium salt.[3] Cases of fatal reactions with ceftriaxone–calcium precipitates in lungs and kidneys in neonates have been described.[3,4] In some cases the infusion lines and the times of administration of ceftriaxone and calcium-containing solutions differed.[3,4] Ceftriaxone and products that contain calcium may be administered sequentially to patients outside the neonatal period, as long as the infusion lines are thoroughly flushed between infusions with a compatible fluid.[3] Ceftriaxone should not be administered simultaneously with any calcium-containing solution via Y-site in any patient.[3]

Warnings: Individuals who have a type I reaction to penicillin may have cross-sensitivity to cephalosporins. Ceftriaxone should be given cautiously to these patients.[3] (See Appendix C for specific information.)

Prolonged use may cause superinfection and/or *Clostridium difficile*-associated diarrhea (CDAD), which has been reported and may range in severity from mild diarrhea to fatal colitis.[3]

Infusion-related cautions

If a decision is made to give this medication to a patient with known penicillin hypersensitivity, the patient should be closely observed for allergenicity. Although rare, anaphylactoid reactions may require immediate emergency treatment with epinephrine and other emergency management.

Dosage

Neonates: See the Contraindications and Warnings section.[5]

PNA	≤2000 g	>2000 g
≤7 days	50 mg/kg q 24 hr	50 mg/kg q 24 hr
>7 days	50 mg/kg q 24 hr	50 mg/kg q 24 hr

*Until 4 weeks of age

Infants and children

Non-CNS infection: 50–75 mg/kg/day given as a single dose or divided q 12 hr, up to 2 g/day[3,5,9,33]

CNS infection: 80–100 mg/kg/day given as a single dose or divided q 12 hr, up to 4 g/day[3,5,7-13]

Gonococcal infection

Complicated: 50 mg/kg/day (up to 1 g/day) as a single dose for 7 days.[5,14] If meningitis or endocarditis, give 50 mg/kg/day (up to 2 g/day) divided q 12–24 hr for 10–14 days and 28 days, respectively, plus erythromycin.[5]

Neonatal ophthalmia: 25–50 mg/kg (up to 125 mg) as a single dose IV/IM[5]

Dosage *(cont.)*	**Prophylaxis:** Neonates born to mothers with untreated gonococcal infections should be given 25–50 mg/kg (up to 125 mg) as a one-time dose.[5,14] If providing prophylaxis after sexual victimization, add appropriate therapies for chlamydia trachomatis, hepatitis B, and trichomoniasis.[5,14] **Uncomplicated:** If ≤45 kg give 25–50 mg/kg/day up to 125 mg, if >45 kg give 250 mg as a single dose IM plus a macrolide antibiotic.[5,14] **Otitis media:** 50 mg/kg (up to 1 g) as a single dose. Generally administered IM.[15-17]
Dosage adjustment in organ dysfunction	Most *adult* patients with renal dysfunction who receive ≤2 g/day do not require dosage adjustment.[3,19] However, some patients with end-stage renal disease receiving hemodialysis may accumulate ceftriaxone.[19] It is recommended that patients with a GFR <10 receive their dose every 24 hours only.[18] No adjustment in hepatic dysfunction; however, if both hepatic and renal dysfunction the dosage should not exceed 2 g/day.[3]
Maximum dosage	100 mg/kg/day[3,5] not to exceed 4 g/day[3,5]
Additives	Contains 3.6 mEq sodium/g of ceftriaxone.[3,20]
Suitable diluents	D5NS, D5½NS, D5W, D10W, NS, or SW. Compatibility varies for dextrose-saline combinations. See more specific reference.[3]
Maximum concentration	40 mg/mL for IV administration and 350 mg/mL for IM use[3]
Preparation and delivery	**Stability:** Do not force thaw by immersion in water baths or by microwave irradiation.[3] 250 and 350 mg/mL reconstituted solutions are stable for 24 hours at room temperature and for 72 hours if refrigerated.[20] 100 mg/mL in SW, NS, or D5W for 48 hours at room temperature and for 10 days if refrigerated.[20] Concentrations of 10, 20, and 40 mg/mL remain stable for 2 days at room temperature with suitable diluents. (See the Suitable Diluents section.)[3] **Compatibility:** See Appendix D for PN compatibility information.[21] **Photosensitivity:** Protect from light before reconstitution.[20]
IV push	10–40 mg/mL.[3,20] Although infusion over 30 minutes is now recommended,[3] doses have been given over 2–15 minutes in children.[10,22] Ten minutes after ceftriaxone. was infused over 5 minutes, an *adult* being treated for presumed meningitis became diaphoretic, hypertensive, and tachycardic and developed palpitations.[24] Subsequent infusions over 30 minutes were uneventful.[24]
Intermittent infusion	10–40 mg/mL[3,20] infused over 30 minutes[3]
Continuous infusion	No specific information is available to support administration by this route.
Other routes of administration	100–350 mg/mL in SW, NS, D5W, BW, or 1% lidocaine (without epinephrine) by deep IM injection[3,20]