

Streptomycin:

Class: Antibiotic.

Indications:

Part of combination therapy of active tuberculosis; used in combination with other agents for treatment of bacteremia caused by susceptible gram-negative bacilli, brucellosis, chancroid granuloma inguinale, *H. influenzae* (respiratory, endocardial, meningeal infections), *K. pneumoniae*, plague, streptococcal or enterococcal endocarditis, tularemia, urinary tract infections (caused by *A. aerogenes*, *E. coli*, *E. faecalis*, *K. pneumoniae*, *Proteus* spp).

Available dosage form in the hospital: STREPTOMYCIN INJ.

Dosage:

-Usual dosage range: I.M.: 15-30 mg/kg/day or 1-2 g daily

-Indication-specific dosing:

-Brucellosis: I.M.: 1 g daily in 2-4 divided doses for 14-21 days (with doxycycline) (Skalsky, 2008)

-Endocarditis:

-Enterococcal: I.M.: 1 g every 12 hours for 2 weeks, 500 mg every 12 hours for 4 weeks in combination with penicillin

-Streptococcal: I.M.: 1 g every 12 hours for 1 week, 500 mg every 12 hours for 1 week in combination with penicillin. **Note:** For patients >60 years, 500 mg every 12 hours for 2 weeks is recommended.

-Mycobacterium avium complex: I.M.: Adjunct therapy (with macrolide, rifamycin, and ethambutol): 8-25 mg/kg 2-3 times weekly for first 2-3 months for severe disease (maximum single dose for age >50 years: 500 mg) (Griffith, 2007)

-Mycobacterium kansasii disease (rifampin-resistant): I.M.: 750 mg to 1 g daily (as part of a three-drug regimen based on susceptibilities) (Campbell, 2000; Griffith, 2007)

-Mycobacterium ulcerans (Buruli ulcers): I.M.: 15 mg/kg once daily for 8 weeks (WHO, 2004)

-Plague: I.M.: 30 mg/kg/day (or 2 g) divided every 12 hours until the patient is afebrile for at least 3 days. **Note:** Full course is considered 10 days (WHO, 2010).

-Tuberculosis: I.M.:

- *Daily therapy:* 15 mg/kg/day (maximum: 1 g)
- *Directly observed therapy (DOT), twice weekly:* 25-30 mg/kg (maximum: 1.5 g)
- *Directly observed therapy (DOT), 3 times weekly:* 25-30 mg/kg (maximum: 1.5 g)

-Tularemia: I.M.:

- *Manufacturer's labeling:* 1-2 g daily in divided doses every 12 hours (maximum: 2 g daily) for 7-14 days until the patients is afebrile for 5-7 days
- *Alternative regimen:* 2 g daily in 2 divided doses (maximum: 2 g daily) for 10 days (WHO, 2007)

Renal Impairment

The following adjustments have been recommended (Aronoff, 2007):

- Cl_{cr} 10-50 mL/minute: Administer every 24-72 hours.
- Cl_{cr} <10 mL/minute: Administer every 72-96 hours.
- Intermittent hemodialysis (IHD): One-half the dose administered after hemodialysis on dialysis days. **Note:** Dosing dependent on the assumption of 3 times weekly complete IHD sessions.
- Peritoneal dialysis (PD): Administration via PD fluid: 20-40 mg/L (20-40 mcg/mL) of PD fluid
- Continuous renal replacement therapy (CRRT): Administer every 24-72 hours; monitor levels (Aronoff, 2007). **Note:** Drug clearance is highly dependent on the method of renal replacement, filter type, and flow rate. Appropriate dosing requires close monitoring of pharmacologic response, signs of adverse reactions due to drug accumulation, as well as drug concentrations in relation to target trough (if appropriate).

Common side effect:

Cardiovascular: Hypotension

Central nervous system: Drug fever, headache, neurotoxicity, paresthesia of face

Dermatologic: Angioedema, exfoliative dermatitis, skin rash, urticaria

Gastrointestinal: Nausea, vomiting

Hematologic: Eosinophilia, hemolytic anemia, leukopenia, pancytopenia, thrombocytopenia

Neuromuscular & skeletal: Arthralgia, tremor, weakness

Otic: Ototoxicity (auditory), ototoxicity (vestibular)

Pregnancy Risk Factor: D