

Ciprofloxacin:

Class: Antibiotic.

Indications: Treatment of the following infections when caused by susceptible bacteria: Urinary tract infections; acute uncomplicated cystitis in females; chronic bacterial prostatitis; lower respiratory tract infections (including acute exacerbations of chronic bronchitis); acute sinusitis; skin and skin structure infections; bone and joint infections; complicated intra-abdominal infections (in combination with metronidazole); infectious diarrhea; typhoid fever due to *Salmonella typhi* (eradication of chronic typhoid carrier state has not been proven); uncomplicated cervical and urethra gonorrhea (due to *N. gonorrhoeae*); nosocomial pneumonia; empirical therapy for febrile neutropenic patients (in combination with piperacillin).

Available dosage form in the hospital: 0.3% EYE DROPS, 1000MG TAB, 200MG VIAL, 250MG TAB, 500MG TAB.

Trade Names:

Dosage:

-Anthrax:

-*Inhalational (postexposure prophylaxis):*

-Oral: 500 mg every 12 hours for 60 days

-I.V.: 400 mg every 12 hours for 60 days

-*Cutaneous (treatment, CDC guidelines):* Oral: Immediate release formulation: 500 mg every 12 hours for 60 days. **Note:** In the presence of systemic involvement, extensive edema, lesions on head/neck, refer to I.V. dosing for treatment of inhalational/gastrointestinal/oropharyngeal anthrax.

-*Inhalational/gastrointestinal/oropharyngeal (treatment, CDC guidelines):* I.V.: 400 mg every 12 hours. **Note:** Initial treatment should include two or more agents predicted to be effective (per CDC recommendations). Continue combined therapy for 60 days.

-Bone/joint infections:

-Oral: 500-750 mg twice daily for $\geq 4-6$ weeks

-I.V.:

-*Mild/moderate:* 400 mg every 12 hours for $\geq 4-6$ weeks

- Severe/complicated*: 400 mg every 8 hours for ≥ 4 -6 weeks
- Chancroid (unlabeled use): Oral: 500 mg twice daily for 3 days (CDC, 2010)
- Endocarditis due to HACEK organisms (AHA guidelines, unlabeled use): **Note**: Not first-line option; use only if intolerant of beta-lactam therapy:
 - Oral: 500 mg every 12 hours for 4 weeks
 - I.V.: 400 mg every 12 hours for 4 weeks
- Epididymitis, chlamydial (unlabeled use): Oral: 500 mg single dose (Canadian STI Guidelines, 2008)
- Febrile neutropenia: I.V.: 400 mg every 8 hours for 7-14 days (combination therapy with piperacillin generally recommended)
- Gonococcal infections:
 - Urethral/cervical gonococcal infections*: Oral: 250-500 mg as a single dose (CDC recommends concomitant doxycycline or azithromycin due to possible coinfection with *Chlamydia*); **Note**: As of April 2007, the CDC no longer recommends the use of fluoroquinolones for the treatment of uncomplicated gonococcal disease.
 - Disseminated gonococcal infection (CDC guidelines)*: Oral: 500 mg twice daily to complete 7 days of therapy (initial treatment with ceftriaxone 1 g I.M./I.V. daily for 24-48 hours after improvement begins); **Note**: As of April 2007, the CDC no longer recommends the use of fluoroquinolones for the treatment of more serious gonococcal disease, unless no other options exist and susceptibility can be confirmed via culture.
- Granuloma inguinale (donovanosis) (unlabeled use): Oral: 750 mg twice daily for at least 3 weeks (and until lesions have healed) (CDC, 2010)
- Infectious diarrhea: Oral:
 - Salmonella*: 500 mg twice daily for 5-7 days
 - Shigella (including Shigella dysentery type 1) (unlabeled regimen)*: 500 mg twice daily for 3 days (IDSA, 2001)
 - Traveler's diarrhea (unlabeled regimen)*: Mild: 750 mg as a single dose (CDC, 2012; de la Cabada Bauch, 2011); Severe: 500 mg twice daily for 3 days (IDSA, 2001)
 - Vibrio cholerae (unlabeled regimen)*: 1 g as a single (CDC, 2011)
- Intra-abdominal, complicated, community-acquired (in combination with metronidazole): **Note**: Avoid using in settings where *E. coli* susceptibility to fluoroquinolones is $< 90\%$:
 - Oral: 500 mg every 12 hours for 7-14 days
 - I.V.: 400 mg every 12 hours for 7-14 days; **Note**: 2010 IDSA guidelines recommend treatment duration of 4-7 days (provided source controlled)
- Lower respiratory tract:
 - Oral: 500-750 mg twice daily for 7-14 days
 - I.V.:
 - Mild/moderate*: 400 mg every 12 hours for 7-14 days

- Severe/complicated*: 400 mg every 8 hours for 7-14 days
- Meningococcal meningitis prophylaxis (unlabeled use): Oral: 500 mg as a single dose (CDC, 2005)
- Nosocomial pneumonia: I.V.: 400 mg every 8 hours for 10-14 days
- Periodontitis (unlabeled use): Oral: 500 mg every 12 hours for 8-10 days (Rams, 1992)
- Prostatitis (chronic, bacterial):
 - Oral: 500 mg every 12 hours for 28 days
 - I.V.: 400 mg every 12 hours for 28 days
- Sinusitis (acute):
 - Oral: 500 mg every 12 hours for 10 days
 - I.V.: 400 mg every 12 hours for 10 days
- Skin/skin structure infections:
 - Oral: 500-750 mg twice daily for 7-14 days
 - I.V.: Mild-to-moderate: 400 mg every 12 hours for 7-14 days; Severe/complicated: 400 mg every 8 hours for 7-14 days
- Typhoid fever: Oral: 500 mg every 12 hours for 10 days
- Urinary tract infection:
 - Acute uncomplicated, cystitis*:
 - Oral:
 - Immediate release formulation: 250 mg every 12 hours for 3 days
 - Extended release formulation (Cipro® XR): 500 mg every 24 hours for 3 days
 - I.V.: 200 mg every 12 hours for 7-14 days
 - Complicated (including pyelonephritis)*:
 - Oral:
 - Immediate release formulation: 500 mg every 12 hours for 7-14 days
 - Extended release formulation (Cipro® XR): 1000 mg every 24 hours for 7-14 days
 - I.V.: 400 mg every 12 hours for 7-14 days

Renal Impairment :

Manufacturer's recommendations:

-Oral, immediate release:

- Cl_{cr} >50 mL/minute: No dosage adjustment necessary.
- Cl_{cr} 30-50 mL/minute: 250-500 mg every 12 hours
- Cl_{cr} 5-29 mL/minute: 250-500 mg every 18 hours
- ESRD on intermittent hemodialysis (IHD)/peritoneal dialysis (PD) (administer after dialysis on dialysis days): 250-500 mg every 24 hours

-Oral, extended release:

- Cl_{cr} ≥30 mL/minute: No dosage adjustment necessary.
- Cl_{cr} <30 mL/minute: 500 mg every 24 hours
- ESRD on intermittent hemodialysis (IHD)/peritoneal dialysis (PD) (administer after dialysis on dialysis days): 500 mg every 24 hours

-I.V.:

- Cl_{cr} ≥30 mL/minute: No dosage adjustment necessary.
- Cl_{cr} 5-29 mL/minute: 200-400 mg every 18-24 hours

-Alternate recommendations: Oral (immediate release), I.V.:

- Cl_{cr} >50 mL/minute: No dosage adjustment necessary (Aronoff, 2007).
- Cl_{cr} 10-50 mL/minute: Administer 50% to 75% of usual dose every 12 hours (Aronoff, 2007).
- Cl_{cr} <10 mL/minute: Administer 50% of usual dose every 12 hours (Aronoff, 2007).
- Intermittent hemodialysis (IHD) (administer after hemodialysis on dialysis days):
Minimally dialyzable (<10%): Oral: 250-500 mg every 24 hours **or** I.V.: 200-400 mg every 24 hours (Heintz, 2009). **Note:** Dosing dependent on the assumption of 3 times weekly, complete IHD sessions.
- Continuous renal replacement therapy (CRRT) (Heintz, 2009; Trotman, 2005): 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). The following are general recommendations only (based on dialysate flow/ultrafiltration rates of 1-2 L/hour and minimal residual renal function) and should not supersede clinical judgment:
 - CVVH/CVVHD/CVVHDF: I.V.: 200-400 mg every 12-24 hours

Common side effect: dizziness, insomnia, nervousness, somnolence, fever, headache
Rash ,Nausea , diarrhea , vomiting , abdominal , dyspepsia.

Pregnancy Risk Factor: C