norfloxacin (nor-flux-a-sin)

**Name**

**Classification**

Therapeutic: anti-infective

Pharmacologic: fluoroquinolones

**Pregnancy Category**

C

**Indications**

Treatment of the following bacterial infections: Urinary tract and gynecologic infections including cystitis, gonorrhea, and prostatitis.

**Contraindications/Precautions**

Hypersensitivity (cross-sensitivity within class may exist); Contraindicated in:

- History of myasthenia gravis (may worsen symptoms including muscle weakness and breathing problems);
- Pedi: Children;
- OB: Pregnancy;
- Geri: History of CNS disorder;
- Renal impairment (dose adjustment required if CCr < 30 mL/min);
- Cirrhosis;
- QTc interval prolongation;
- Underlying condition abnormalities (may rarely cause QTc prolongation);
- Concurrent use of concomitants (7% risk of tendonitis/tendon rupture); Akinesia, brady, or hypokalemic transplant patients (7% risk of tendinitis/bandage rupture); Babies patients (7% risk of adverse reactions);

**Adverse Reactions/Side Effects**

**CNS:** confusion, depression, dizziness, hallucinations, insomnia, nightmares, paranoia, tremor, headache.

**CV:** QTc prolongation.

**GI:** diarrhea, nausea, vomiting.

**GU:** dysuria, urinary frequency, hematuria.

**Hematologic:** megaloblastic anemia.

**Misc:** photosensitivity, rash.

**Drug Interactions**

Drug-Rx:

- Concurrent use of clindamycin, doxycycline, trimethoprim.

- Concurrent use of oral antidiabetic agents (may interfere with elimination)

- Concurrent use of Class IA antiarrhythmics (amiodarone, disopyramide, procainamide) or Class III antiarrhythmics (amiodarone, sotalol) (risk of QTc interval prolongation and torsade de pointes);

- Concurrent use of theophylline (risk of QTc interval prolongation and torsade de pointes);

- Concurrent use of quinidine, procainamide, sotalol (risk of QTc interval prolongation and torsade de pointes);

- Concurrent use of antacids, iron salts, bismuth subsalicylate, sucralfate, and zinc salts (absorption);

- Concurrent use of metal chelation agents (risk of tendonitis/tendon rupture)

**Drug-Food:**

- Concurrent use of dairy products (because of metal chelation effect).

**Route/Dosage**

PO (Adults): Urinary tract infections—400 mg q 12 hr (for 3–21 days, depending on severity of infection).

Gonorrhea—800 mg single dose. Prostatitis—400 mg q 12 hr (for 28 days).

**Usual Dose**

- Indications: Urinary tract infections including cystitis, gonorrhea, and prostatitis
- PO (Adults): 400 mg q 12 hr (for 3–21 days, depending on severity of infection). Gonorhea—800 mg single dose. Prostatitis—400 mg q 12 hr (for 28 days)

**Special Populations**

- Pedi: Children ≥12 yr: PO 10 mg/kg q 12 hr (max 400 mg q 12 hr);

- OB: Dose adjustment may be required.

- Geri: Appropriate dosage adjustment may be required.

**Overdosage**

**AAP**

- In urine: Discontinue.

Use Cautiously in:

- Known or suspected CNS disorder;
- Renal impairment (dose adjustment required if CCr < 30 mL/min).

**Pharmacologic:** anti-infectives

**Therapeutic:** anti-infectives

**Pharmacokinetics**

**Absorption:** Well absorbed (80%–90%) following oral administration.

**Distribution:** Widely distributed. High concentrations are achieved in the urine and tissues of the urinary tract. Appears to cross the placenta.

**Metabolism and Excretion:** Changed by the kidneys, 30% excreted unchanged in feces.

**Half-life:** 6.5 hr.

**TIME/ACTION PROFILE (blood levels)**

- PO (Adults): 15 min (peak); 80% absorbed (30–40%) following oral administration.

**Contraindications/Precautions**

- Known or suspected CNS disorder;
- Renal impairment (dose adjustment required if CCr < 30 mL/min);
- Cirrhosis;
- QTc interval prolongation;
- Underlying condition abnormalities (may rarely cause QTc prolongation);
- Concurrent use of concomitants (7% risk of tendonitis/tendon rupture); Akinesia, brady, or hypokalemic transplant patients (7% risk of tendinitis/bandage rupture); Babies patients (7% risk of adverse reactions);

**Adverse Reactions/Side Effects**

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**Overdosage**

**AAP**

- In urine: Discontinue.
Renal Impairment

PO (Adults): CCr <30 mL/min — 400 mg once daily.

NURSING IMPLICATIONS

Assessment
- Assess for infection (red urine, appearance of vesicle, ureteric, and stool; VBG; urination frequency and urgency of urination, cloudy or foul-smelling urine) at beginning of and during therapy.

Obtain specimens for culture and sensitivity prior to initiating therapy. First dose may be given before receiving results.
- Observe patient for signs and symptoms of anaphylaxis (rash, pruritus, laryngeal edema, wheezing). Discontinue drug and notify health care professional immediately if these problems occur. Keep epinephrine, an antihistamine, and resuscitation equipment close by in case of an anaphylactic reaction.
- Monitor bowel function. Diarrhea, abdominal cramping, fever, and bloody stools should be reported to health care professional promptly as a sign of pseudomembranous colitis. May begin up to several weeks following completion of therapy.
- Assess for rash periodically during therapy. May cause Stevens-Johnson syndrome. Discontinue therapy if severe or if accompanied with fever, generalized malaise, fatigue, muscle or joint aches, blisters, oral lesions, conjunctivitis, and eosinophilia.
- Avoid skin and symptoms of peripheral neuropathy (pain, burning, tingling, numbness, and/or weakness) or other alterations of sensation (light touch, pain, temperature, position sense, and vibratory sensation) periodically during therapy. Symptoms may be irreversible; discontinue norfloxacin if symptoms occur.
- Lab Test Considerations: May cause/serum AST, ALT, LDH, bilirubin, and alkaline phosphatase.
- May also cause/serum glucose.
- May enhance the anticoagulant effects of warfarin.

Potential Nursing Diagnoses

- Risk for infection (Indications)

Implementation

- Do not confuse Noroxin with Neurontin (gabapentin).
- PO: Administer on an empty stomach 1 hr before or 2 hr after meals, with a full glass of water. Products or foods containing calcium, magnesium, aluminum, iron, or zinc should not be ingested for 2 hr before and 2 hr after administration.

Patient/Family Teaching

- Instruct patient to intake medications as directed at evenly spaced times, and to finish drug completely, even feeling better. Take missed doses as soon as possible, unless almost time for next dose. Do not double doses. Advise patient to take all doses and not to skip doses. Advise patient to notify health care professional immediately if these problems occur. Keep epinephrine, an antihistamine, and resuscitation equipment close by in case of an anaphylactic reaction.
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- Encourage patient to maintain a fluid intake of at least 1500–2000 mL/day to prevent crystalluria.
- Advise patient that antacids or medications containing calcium, magnesium, aluminum, iron, or zinc will decrease absorption and should not be taken within 2 hr before or 2 hr after taking this medication.
- Monitor bowel function. Diarrhea, abdominal cramping, fever, and bloody stools should be reported to health care professional promptly as a sign of pseudomembranous colitis. May begin up to several weeks following completion of therapy.
- Advise patient to notify health care professional of any personal or family history of QTc prolongation or proarrhythmic conditions such as recent hypokalemia, significant bradycardia, or recent myocardial ischemia or if fainting spells or palpitations occur. Patients with this history should not receive norfloxacin.
- Advise patient to notify health care professional immediately if these problems occur. Keep epinephrine, an antihistamine, and resuscitation equipment close by in case of an anaphylactic reaction.
- Cautions patient to use sunscreen and protective clothing to prevent photosensitivity reactions during and for 5 days after therapy. Notify health care professional if signs of photosensitivity occur.
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- Instruct patient to notify health care professional if fever and diarrhea develop, especially if stool contains blood, pus, or mucus. Advise patient not to treat diarrhea without consulting health care professional.
- Instruct patient to notify health care professional immediately if rash, jaundice, signs of hypersensitivity, or tendon (shoulder, hand, Achilles, and other) pain, swelling, or inflammation occur. If tendon symptoms occur, avoid exercise and use of the affected area. Increased risk in 65 yrs old, kidney, heart and lung transplant recipients, and patients taking corticosteroids concurrently. Therapy should be discontinued.

Evaluation/Desired Outcomes

- Resolution of the signs and symptoms of bacterial infection. Time for complete resolution depends on organism and site of infection.

Why was this drug prescribed for your patient?