Norfloxacin

Antibiotic Class:
Quinolone

Antimicrobial Spectrum:
Gram positive bacteria: methicillin-susceptible *Staphylococcus epidermidis, Staphylococcus saprophyticus*
Gram negative bacteria: *Enterobacteriaceae, H. influenzae, other Haemophilus spp., N. gonorrhoeae, N. meningitides, M. catarrhalis, P. aeruginosa,*

Mechanism of Action:
Inhibition of topoisomerase (DNA gyrase) enzymes, which inhibits relaxation of supercoiled DNA and promotes breakage of double stranded DNA.

Pharmacodynamics:
Fluoroquinolones produce both concentration dependent (peak:MIC), and a combination of concentration and time-dependent killing (AUC:MIC).

Pharmacokinetics:
400mg dose; Cmax: 1.5mg/ml; Volume of distribution: 1.7 L/kg; Table 2

Adverse Effects:
CNS: headache, insomnia, dizziness; hallucinations, depression, psychotic reactions (rare)
Connective tissue: tendon injury
Renal: interstitial nephritis
Cardiovascular: QTC prolongation, torsades de pointes, arrhythmias

Dosage:
Oral: 400mg tablet

Adults:
Gonorrhea: 800 mg PO as a single dose
Prostatitis: 400 mg PO every 12 hr x 28 days
Complicated UTI: 400 mg PO every 12 hr x 10-21 days
Uncomplicated UTI: (*E. coli, K pneumoniae, P. mirabilis*)400 mg PO every 12 hr x 3 days
Uncomplicated UTI: (other organisms) 400 mg ORALLY every 12 hr x 7-10 days

Pediatric:
Efficacy and safety not established in patients less than 18 years of age

Table 4

Disease state based dosing:
Renal failure of CrCl < 30ml/min: 400mg PO q24h
Hepatic failure: No dosing changes recommended at this time.

Contraindications/Warnings/Precautions:
Precautions:

- Prolongation of QT interval; avoid concurrent use with other drugs that prolong QT interval and in patients with risk factors for torsades de pointes (hypokalemia, significant bradycardia, cardiomyopathy)
- Patients with glucose 6-phosphate dehydrogenase deficiency
- Diabetes mellitus; disturbances of blood glucose have been reported, usually in diabetic patients receiving concomitant treatment with an oral hypoglycemic agent or with insulin

Drug Interactions:
Divalent cations: aluminum, magnesium zinc, iron, calcium, antacids, sucralfate – reduced bioavailability of quinolones (can cause therapeutic failure)
Theophylline, caffeine, xanthines: clearance of these is inhibited with fluoroquinolones

Pregnancy:
Category C: Risk unknown. Human studies inadequate.

Monitoring Requirements:
Therapeutic: Culture and sensitivities, signs and symptoms of infection
Toxic: Urinalysis, BUN, Creatinine, AST and ALT, Physicial examination: encephalopathic changes

Brand names/Manufacturer:
CHIBROXIN (Merck Sharp & Dohme – BRAZIL, SINGAPORE, CHILE, MALAYSIA, USA – Opthalmic solution)
FLOXEN (Pharmaniaga – MALAYSIA, HONG KONG)
JANACIN (Biolab – THAILAND, HONG KONG, MALAYSIA)
LEXINOR (AstraZeneca – SWEDEN, HONG KONG, THAILAND, FINLAND, MALAYSIA)
NOROXIN (Merck Sharp & Dohme - SOUTH AFRICA, SWITZERLAND, PORTUGAL, MEXICO, NEW ZEALAND, AUSTRALIA, CHILE, CANADA)
ZOROXIN (Merck Sharp & Dohme – BELGIUM, AUSTRIA, DENMARK)