Nucleic acid synthesis inhibitors

Fluoroquinolones (cidal), E inhibitor

1st generation

Nalidixic acid

2nd generation

Ciprofloxacin

Norfloxacin

Ofloxacin

3rd generation

Levofloxacin

4th generation

Moxifloxacin

MOA:

The drug inter cell passively through porins, Inhibit topoisomerase II (DNA gyrase) so inhibit DNA replication & topoisomerase IV required for cell division (interfer with separation of replicated DNA)

Spectrum:

G-, Pseudomonas, mycobacterium, legionella,H influenzae, morexella, chlamydia,

Ciprofloxacin

-i/v, oral

-specific for enterococci +Pneumococci+G-bacilli+Pa

-Used in traveler diarrhea (E coli) , acut diarrheal infecti

-prophylaxis & Rx anthrax,

-alternative for aminoglycoside

-In resistant TB

-respiratory infection resist to Ampicillin

-Complicated and non complicated UTI

-gonorrhea

Norfloxacin

-G+, P a,

-oral

-used in Complicated and non complicated UTI, & prostatitis

Levofloxacin

-i/v, oral

- Prostatitis (E coli), sexually transmitted diseases (not syphilis), gonorrhea, skin infection, acute sinusitis, pneumonia, respiratory infection (St pneumoniae)

Moxifloxacin

-G+, anaerobs,

-oral

SE of quinolones:

-GI: N, V, diarrhea

-CNS :headache

-Phototoxicity

-damage growing cartilage

CI : children under 18 year

pregnancy

nursing mother

DIA:

-Antacid (Mg, Al), iron preparation, zinc & dairy product (Ca) decrease quinolon absorption

-Ciprofloxacin Inhibit metabolism of Theophyllin

3,4th generation inhibit warfarin & caffeine metabolism