Prulifloxacin-Moxifloxacin

THERAPEUTIC INDICATIONS

Prulifloxacin:

1) Acute uncomplicated lower urinary tract infections (simple cystitis);
2) Complicated lower urinary tract infections;
3) Acute exacerbation of chronic bronchitis,
4) Acute bacterial rhinosinusitis

Moxifloxacin

1) Acute bacterial sinusitis,
2) Acute exacerbations of chronic bronchitis,
3) Community acquired pneumonia, except severe cases
4) Mild to moderate pelvic inflammatory disease (i.e. infections of female upper genital tract, including salpingitis and endometritis), without an associated tubo-ovarian or pelvic abscess.

Moxifloxacin film-coated tablets may also be used to complete a course of therapy in patients who have shown improvement during initial treatment with intravenous moxifloxacin for the following indications:
Severe community-acquired pneumonia,
Complicated skin and skin structure infections

DISCUSSION:

Prulifloxacin lacks indications about pelvic inflammatory disease, community acquired pneumonia, complicated skin and skin structure infections.
BUT: Pelvic inflammatory disease is a niche indication.

Moxifloxacin lacks any indication in urinary tract infections! It is the only fluoroquinolone lacking indications in this therapeutic area. The infections of urinary tract are a big and widespread issue.

About skin, skin structure infection, severe community acquired pneumonia, Moxifloxacin tablets should not be used to initiate therapy for any of these diseases, but only to complete an intravenous moxifloxacin therapy started in hospital, so again we are talking about niche indications.

The true Prulifloxacin lack is :
Mild Community acquired pneumonia.

The true Moxifloxacin lack is :
the world of Urinary tract infections

DRUG FORMULATIONS

Prulifloxacin:
film coated tablets

Moxifloxacin:
film coated tablets
concentrate for infusion solution preparation

RENAL IMPAIRMENT

Prulifloxacin:
Because of the lack of specific studies, it is not possible to determine the dosage in patients with renal insufficiency (patients with creatinine clearance < 60 ml/min). Thus, in these patients, monitoring of the plasma levels of the drug is the most reliable method for adjustment of the dosage.

Moxifloxacin:
No adjustment of dosage is required in patients with mild to severely impaired renal function or in patients on chronic dialysis i.e. haemodialysis and continuous ambulatory peritoneal dialysis

LIVER IMPAIRMENT

Prulifloxacin:

Because of the lack of specific studies, it is not possible to determine the dosage in patients with hepatic insufficiency. Thus, in these patients, monitoring of the plasma levels of the drug is the most reliable method for adjustment of the dosage.

Moxifloxacin:

Cases of fulminant hepatitis potentially leading to liver failure (including fatal cases) have been reported with moxifloxacin. Due to limited clinical data, moxifloxacin is also **contraindicated** in patients with impaired liver function (Child Pugh C) and in patients with transaminases increase > 5fold ULN.

QT ISSUES

Prulifloxacin:

Prulifloxacin has a ***very low*** potential risk of induction of QT interval prolongation

Moxifloxacin:

Moxifloxacin ***has been shown to prolong the QTc interval*** for this reason moxifloxacin is therefore ***contraindicated*** in patients with:

1) Congenital or documented acquired QT prolongation
2) Electrolyte disturbances, particularly in uncorrected hypokalaemia
3) Clinically relevant bradycardia
4) Clinically relevant heart failure with reduced left-ventricular ejection fraction
5) Previous history of symptomatic arrhythmias

CNS ISSUES

Prulifloxacin:

The weak prulifloxacin concentration found in the cerebro spinal fluid after i.v. administration in dog and repeated p.o. administration in humans, shows that prulifloxacin **hardly crosses the blood brain barrier.**

For this reason Prulifloxacin has not specific warnings about CNS issues

Moxifloxacin:

Peripheral neuropathy

Cases of sensory or sensorimotor polyneuropathy resulting in paraesthesias, hypoaesthesias, dysaesthesias, or weakness **have been reported in patients receiving quinolones including moxifloxacin.** Patients under treatment with moxifloxacin should be advised to inform their doctor prior to continuing treatment if symptoms of neuropathy such as pain, burning, tingling, numbness, or weakness develop.

Psychiatric reactions

Psychiatric reactions may occur **even after the first administration of quinolones, including moxifloxacin**

DRUG INTERACTIONS

Prulifloxacin:

Food and Milk

Concomitant ingestion of prulifloxacin and milk results in decreased area under the concentration-time curve (AUC) and decreased urinary recovery of prulifloxacin, while ingestion of food delays and reduces peak levels.

Prulifloxacin has to be administred away from meals and milk

Moxifloxacin:

Drugs working on potassiun level or associated with bradycardia:

Moxifloxacin **should be used with caution** in patients who are taking medication that can reduce potassium levels (e.g. loop and thiazide type diuretics, laxatives and enemas [high doses], corticosteroids, amphotericin B) or medication that is associated with clinically significant bradycardia.

DRUG INTERACTIONS

Prulifloxacin:

Probenecid

Prulifloxacin urinary excretion decreases when concomitantly administered with probenecid.

Prulifloxacine could be less effective

Fenbufen

The concomitant administration of fenbufen with certain quinolones can cause an increased risk of convulsions, **the administration of Prulifloxacin and fenbufen must therefore be carefully evaluated.**

Moxifloxacin:

Due to the additive effect on QT interval prolongation, co-administration of moxifloxacin with any of the following medicinal products is contraindicated:

1) anti-arrhythmics class IA (e.g. quinidine, hydroquinidine, disopyramide)

2) anti-arrhythmics class III (e.g. amiodarone, sotalol, dofetilide, ibutilide)

3) antipsychotics (e.g. phenothiazines, pimozide, sertindole, haloperidol, sultopride)

4) tricyclic antidepressive agents

5) certain antimicrobial agents (saquinavir, sparfloxacin, erythromycin IV, pentamidine, antimalarials particularly halofantrine)

6) certain antihistaminics (terfenadine, astemizole, mizolastine)

7) others (cisapride, vincamine IV, bepridil, diphemanil).

Charcoal

Concomitant administration of charcoal with an oral dose of 400 mg moxifloxacin led to a pronounced prevention of drug absorption and a reduced systemic availability of the drug by more than 80%. Therefore, the concomitant use of these two drugs is not recommended.

ANTIBACTERIAL SPECTRUM

Prulifloxacin:

Prulifloxacin antibacterial spectrum is well balanced between Gram+ and Gram-

Prulifloxacin works very well on Pseudomonas Aeruginosa

Moxifloxacin:

Moxifloxacin works better on Gram+

Moxifloxacin **doesn't work on Pseudomonas Aeruginosa** which is inherently resistant to Moxifloxacin.

This topic could be an issue because Pseudomonas Aeruginosa is one of the most common bacteria in the last stadies of the acute exacerbation of chronic bronchitis

Prulifloxacin-Levofloxacin

THERAPEUTIC INDICATIONS

Prulifloxacin:

1) Acute uncomplicated lower urinary tract infections (simple cystitis);
2) Complicated lower urinary tract infections;
3) Acute exacerbation of chronic bronchitis,
4) Acute bacterial rhinosinusitis

Levofloxacin:

1) Acute bacterial sinusitis,
2) Acute exacerbations of chronic bronchitis,
3) Community acquired pneumonia
4) Complicated skin and soft tissue infections
5) Pyelonephritis and complicated urinary tract infections
6) Chronic bacterial prostatitis
7) Uncomplicated cystitis
8) Inhalation Anthrax: post exposure prophylaxis and curative treatment

POSOLOGY

Prulifloxacin:

In **simple cystitis only one 600mg tablet** (one shot therapy)
In every other indication: **one 600 mg tablet once a day** up to 10-days of maximum treatment.

t 1/2 = 10 hours

a 600mg tablet is able to overcome the MIC of susceptible bacteria all day long

Levofloxacin:

Levofloxacin tablets are administered **once or twice daily,** according to severity of infection

t 1/2 = 6-8 hours

a 500mg tablet could not be able to overcome the MIC of susceptible bacteria all day long

so a once a day administration could be lead to therapy failure or resistence growing

DRUG FORMULATIONS

Prulifloxacin:
film coated tablets

Levofloxacin:
film coated tablets
solution for infusion

RENAL IMPAIRMENT

Prulifloxacin:
Because of the lack of specific studies, it is not possible to determine the dosage in patients with renal insufficiency (patients with creatinine clearance < 60 ml/min). Thus, in these patients, monitoring of the plasma levels of the drug is
the most reliable method for adjustment of the dosage.

Levofloxacin:
in the SPC there is clear scheme of levofloxacin posology for patients with renal impairment

LIVER IMPAIRMENT

Prulifloxacin:
Because of the lack of specific studies, it is not possible to determine the dosage in patients with hepatic insufficiency. Thus, in these patients, monitoring of the plasma levels of the drug is the most reliable method for adjustment of the dosage.

Levofloxacin:
No adjustment of dose is required since levofloxacin is not metabolised to any relevant extent by the liver and is mainly excreted by the kidneys.

QT ISSUES

Prulifloxacin:

Prulifloxacin has a ***very low*** potential risk of induction of QT interval prolongation

Levofloxacin:

Levofloxacin has a ***low*** potential risk of induction of QT interval prolongation, but it's enough to lead to

special warnings and precautions to use:

Caution should be taken when using levofloxacin in patients with known risk factors for prolongation of the QT interval such as, for example:

1) Congenital long QT syndrome

2) Concomitant use of drugs that are known to prolong the QT interval (e.g. Class IA and III antiarrhythmics, tricyclic antidepressants, macrolides, antipsychotics).

3) Uncorrected electrolyte imbalance (e.g. hypokalaemia, hypomagnesaemia)

4) Cardiac disease (e.g. heart failure, myocardial infarction, bradycardia)

5) Elderly patients and women may be more sensitive to QTc-prolonging medications. Therefore, caution should be taken when using levofloxacin, in these populations.

CNS ISSUES

Prulifloxacin:

The weak prulifloxacin concentration found in the cerebro spinal fluid after i.v. administration in dog and repeated p.o. administration in humans, shows that prulifloxacin **hardly crosses the blood brain barrier.**

For this reason Prulifloxacin has not specific warnings about CNS issues

Epilepsy

Unidrox should be **taken with caution** in patients with CNS disorders that may predispose to convulsion or lower the convulsion threshold.

Levofloxacin:

CNS side effects

Insomnia is a common side effect of Levofloxacin administration

Peripheral neuropathy

Peripheral sensory neuropathy and peripheral sensory motor neuropathy **have been reported in patients receiving levofloxacin, which can be rapid in its onset .**

Psychiatric reactions

Psychotic reactions have been reported in patients receiving levofloxacin. In very rare cases these have progressed to suicidal thoughts and self-endangering behaviour- sometimes after only a single dose of levofloxacin.

Epilepsy

Levofloxacin tablets **must not be used** in patient with **epilepsy**

DRUG INTERACTIONS

Prulifloxacin:

Food and Milk

Concomitant ingestion of prulifloxacin and milk results in decreased area under the concentration-time curve (AUC) and decreased urinary recovery of prulifloxacin, while ingestion of food delays and reduces peak levels.

Prulifloxacin has to be administred away from meals and milk

Levofloxacin:

Ciclosporin

The half-life of ciclosporin was increased by 33% when coadministered with levofloxacin.

ANTIBACTERIAL SPECTRUM

Prulifloxacin:

Prulifloxacin antibacterial spectrum is well balanced between Gram+ and Gram-

Prulifloxacin works very well on Pseudomonas Aeruginosa

Levofloxacin:

Levofloxacin works **very well** on atypical bacteria: Chlamydia, Legionella, Mycoplasma, Ureaplasma

Levofloxacin works very well on Bacillus Anthracis

Levofloxacin antibacterium spectrum is well balanced between Gram+ and Gram-

BUT.. Pseudomonas Aeruginosa could be a specie for which acquired resistance may be a problem

Prulifloxacin-Ciprofloxacin

THERAPEUTIC INDICATIONS

Prulifloxacin:

1) Acute uncomplicated lower urinary tract infections (simple cystitis);
2) Complicated lower urinary tract infections;
3) Acute exacerbation of chronic bronchitis,
4) Acute bacterial rhinosinusitis

Ciprofloxacin immediately release:

1) Lower respiratory tract infections due to **Gram-negative** bacteria
2) Chronic suppurative otitis media
3) Acute exacerbation of chronic sinusitis especially if these are caused by **Gram-negative** bacteria
4) Urinary tract infections
5) Genital tract infections (if pathology is due to susceptible Neisseria gonorrhoeae)
6) Infections of the gastro-intestinal tract (e.g. travellers'diarrhoea)
7) Intra-abdominal infections
8) Infections of the skin and soft tissue caused by **Gram-negative** bacteria
9) Malignant external otitis
10) Infections of the bones and joints
11) Inhalation Anthrax: post exposure prophylaxis and curative treatment

Ciprofloxacin immediately release has also pediatric indications:

1)Broncho-pulmonary infections in cystic fibrosis caused by Pseudomonas aeruginosa
2)Complicated urinary tract infections and pyelonephritis
3) Inhalation Anthrax: post exposure prophylaxis and curative treatment

THERAPEUTIC INDICATIONS

Prulifloxacin:

1) Acute uncomplicated lower urinary tract infections (simple cystitis);
2) Complicated lower urinary tract infections;
3) Acute exacerbation of chronic bronchitis,
4) Acute bacterial rhinosinusitis

Ciprofloxacin extended release:

1) Uncomplicated urinary tract infections
2) Complicated urinary tract infections and acute uncomplicated pyelonephritis

Ciprofloxacin extended release **HAS NOT** pediatric indications

POSOLOGY

Prulifloxacin:

In **simple cystitis only one 600mg tablet** (one shot therapy)
In every other indication: **one 600 mg tablet once a day** up to 10-days of maximum treatment.

Ciprofloxacin immediately release:

The dosage is determined by the indication, the severity and the site of the infection, the susceptibility to ciprofloxacin of the causative organism(s), the renal function of the patient and, in children and adolescents the body weight.
BUT everytime and in every pathology Ciprofloxacin immediately release has to be administred **twice a day**

Ciprofloxacin extended release:

Uncomplicated urinary tract infection:
one 500mg tablet once a day **for 3 days**
Complicated urinary tract infection and acute uncomplicated pyelonephritis:
one 1000mg tablet once a day for 7 to 14 days

DRUG FORMULATIONS

Prulifloxacin:
film coated tablets

Ciprofloxacin:
film coated tablets, immediately release
film coated tablets, extended release
solution for infusion

RENAL IMPAIRMENT

Prulifloxacin:
Because of the lack of specific studies, it is not possible to determine the dosage in patients with renal insufficiency (patients with creatinine clearance < 60 ml/min). Thus, in these patients, monitoring of the plasma levels of the drug is
the most reliable method for adjustment of the dosage.

Ciprofloxacin:
in the SPC there is clear scheme of ciprofloxacin posology for patients with renal impairment

LIVER IMPAIRMENT

Prulifloxacin:
Because of the lack of specific studies, it is not possible to determine the dosage in patients with hepatic insufficiency. Thus, in these patients, monitoring of the plasma levels of the drug is the most reliable method for adjustment of the dosage.

Ciprofloxacin:
In patients with impaired liver function no dose adjustment is required.

QT ISSUES

Prulifloxacin:

Prulifloxacin has a ***very low*** potential risk of induction of QT interval prolongation

Ciprofloxacin:

Ciprofloxacin has a ***low*** potential risk of induction of QT interval prolongation, but it's enough to lead to **special warnings and precautions to use:**

Ciprofloxacin immediately release and extended-release **have been associated** with prolongation of the QT interval on the electrocardiogram and cases of arrhythmia.

Cases of **torsade de pointes have been reported** during postmarketing surveillance in patients receiving **ciprofloxacin extended-release.**

Caution should be taken when using ciprofloxacin immediately release and avoid ciprofloxacin extended-release in patients with :

1) Known prolongation of the QT interval
2) Risk factors for QT prolongation or torsade de pointes (for example, congenital long QT syndrome, uncorrected electrolyte imbalance, such as hypokalemia or hypomagnesemia and cardiac disease, such as heart failure, myocardial infarction, or bradycardia)

Caution should be also taken when using ciprofloxacin in patients receiving :

3) Class IA antiarrhythmic agents (quinidine, procainamide)
4) Class III antiarrhythmic agents (amiodarone, sotalol)
5) tricyclic antidepressants
6) macrolides
7) antipsychotics.

Elderly patients and women may be more sensitive to QTc-prolonging medications. **Therefore, caution should be taken when using ciprofloxacin, in these populations.**

CNS ISSUES

Prulifloxacin:

The weak prulifloxacin concentration found in the cerebro spinal fluid after i.v. administration in dog and repeated p.o. administration in humans, shows that prulifloxacin **hardly crosses the blood brain barrier.**

For this reason Prulifloxacin has not specific warnings about CNS issues

Ciprofloxacin:

Polyneuropathy

Cases of polyneuropathy (based on neurological symptoms such as pain, burning, sensory disturbances or muscle weakness, alone or in combination) **have been reported in patients receiving ciprofloxacin.**

Psychiatric reactions

Psychiatric reactions **may occur** even after **first administration of ciprofloxacin**. In rare cases, depression or psychosis can progress to suicidal ideations/thoughts culminating in attempted suicide or completed suicide.

DRUG INTERACTIONS

Prulifloxacin:

Food

Concomitant ingestion of prulifloxacin and food delays and reduces blood peak levels.

Prulifloxacin has to be administred away from meals

Ciprofloxacin:

Tizanidine

Tizanidine must not be administered together with ciprofloxacin

There is an increase in serum tizanidine concentration when given concomitantly with ciprofloxacin. Increased serum tizanidine concentration is associated with a potentiated hypotensive and sedative effect.

DRUG INTERACTIONS

Prulifloxacin:

Fenbufen

The concomitant administration of fenbufen with certain quinolones can cause an increased risk of convulsions, **the administration of Prulifloxacin and fenbufen must therefore be carefully evaluated.**

Ciprofloxacin:

Methotrexate

Renal tubular transport of methotrexate may be inhibited by concomitant administration of ciprofloxacin, potentially leading to increased plasma levels of methotrexate and increased risk of methotrexate-associated toxic reactions.

The concomitant use is not recommended

Phenytoin

Simultaneous administration of ciprofloxacin and phenytoin may result in increased or reduced serum levels of phenytoin such that **monitoring of drug levels is recommended.**

Cyclosporin

A transient rise in the concentration of serum creatinine was observed when ciprofloxacin and cyclosporin containing medicinal products were administered simultaneously. Therefore, it is frequently **(twice a week) necessary to control the serum creatinine concentrations in these patients.**

Clozapine

Following concomitant administration of ciprofloxacin with clozapine, serum concentrations of clozapine were increased. **Clinical surveillance and appropriate adjustment of clozapine dosage during and shortly after co-administration with ciprofloxacin are advised .**

DRUG INTERACTIONS

Prulifloxacin:

Ciprofloxacin:

Sildenafil

C_{max} and AUC of sildenafil were increased approximately twofold in healthy subjects after an oral dose of 50 mg given concomitantly with 500 mg ciprofloxacin. Therefore, **caution should be used prescribing ciprofloxacin concomitantly with sildenafil** taking into consideration the risks and the benefits.

ANTIBACTERIAL SPECTRUM

Prulifloxacin:

Prulifloxacin antibacterial spectrum is well balanced between Gram+ and Gram-

Prulifloxacin works very well on Pseudomonas Aeruginosa

Ciprofloxacin:

Ciprofloxacin doesn't work well on Gram+:

Ciprofloxacin monotherapy is not suited for treatment of severe infections and infections that **might be due to Gram-positive** or **anaerobic pathogens**. In such infections ciprofloxacin must be co-administered with other appropriate antibacterial agents.

Ciprofloxacin is not recommended for the treatment of streptococcal infections due to inadequate efficacy. (including Streptococcus pneumoniae)

Pseudomonas Aeruginosa could be a specie for which acquired resistance may be a problem

Prulifloxacin-Norfloxacin

THERAPEUTIC INDICATIONS

Prulifloxacin:

1) Acute uncomplicated lower urinary tract infections (simple cystitis);
2) Complicated lower urinary tract infections;
3) Acute exacerbation of chronic bronchitis,
4) Acute bacterial rhinosinusitis

Norfloxacin:

1) Upper and lower, complicated and uncomplicated, acute and chronic urinary tract infections, including cystitis, pyelitis. (chronic prostatitis only in some contries)

only urinary infections

POSOLOGY

Prulifloxacin:

In **simple cystitis** **only one 600mg tablet** (one shot therapy)
In every other indication: **one 600 mg tablet once a day** up to 10-days of maximum treatment.

Norfloxacin:

one 400 mg tablet twice daily

up to 7/10 days in acute infections

up to 4 weeks in chronic infections

DRUG FORMULATIONS

Prulifloxacin:

film coated tablets

Norfloxacin:

film coated tablets
(in some countries also capsules)

RENAL IMPAIRMENT

Prulifloxacin:

Because of the lack of specific studies, it is not possible to determine the dosage in patients with renal insufficiency (patients with creatinine clearance < 60 ml/min). Thus, in these patients, monitoring of the plasma levels of the drug is
the most reliable method for adjustment of the dosage.

Norfloxacin:

in patients with renal impairment the recommended dose is : one 400mg film coated tablet once daily

LIVER IMPAIRMENT

Prulifloxacin:

Because of the lack of specific studies, it is not possible to determine the dosage in patients with hepatic insufficiency. Thus, in these patients, monitoring of the plasma levels of the drug is the most reliable method for adjustment of the dosage.

Norfloxacin:

there are not available data on drug spc....

....despite a common side effects of Norfloxacin administration is:

elevation of liver transaminases (AST or SGOT and ALT or SGPT)

In a Norfloxacin generic spc published in Great Britain the elevation of liver transaminases is uncommon....

But cholestatic hepatitis and hepatitis are common

QT ISSUES

Prulifloxacin:

Prulifloxacin has a ***very low*** potential risk of induction of QT interval prolongation

Norfloxacin:

Norfloxacin has a ***low*** potential risk of induction of QT interval prolongation, but it's enough to lead to **special warnings and precautions to use:**

Caution should be taken when using norfloxacin, in patients with **known risk factors** for **prolongation of the QT** interval such as, for example:

1) **congenital long QT syndrome**
2) **concomitant use of drugs that are known to prolong the QT interval (e.g. Class IA and III anti-arrhythmics, tricyclic antidepressants, macrolides, antipsychotics)**
3) **uncorrected electrolyte imbalance (e.g. hypokalaemia, hypomagnesaemia)**
4) **cardiac disease (e.g. heart failure, myocardial infarction, bradycardia)**
5) **Elderly patients and women may be more sensitive to QTc-prolonging medications. Therefore, caution should be taken when using norfloxacin, in these populations.**

CNS ISSUES

Prulifloxacin:

The weak prulifloxacin concentration found in the cerebro spinal fluid after i.v. administration in dog and repeated p.o. administration in humans, shows that prulifloxacin **hardly crosses the blood brain barrier.**

For this reason Prulifloxacin has not specific warnings about CNS issues

Norfloxacin:

CNS side effects

Insomnia is a common side effect of Norfloxacin administration

Peripheral neuropathy

Peripheral sensory neuropathy and peripheral sensory motor neuropathy **have been reported in patients receiving norfloxacin, which can be rapid in its onset .**

Psychiatric reactions

Norfloxacin **may lead to exacerbation and aggravation** of the symptoms in patients with **known or suspected psychiatric disorders**, hallucinations and/or confusion.

DRUG INTERACTIONS

Prulifloxacin:

Food

Concomitant ingestion of prulifloxacin and food delays and reduces blood peak levels.

Prulifloxacin has to be administred away from meals

Norfloxacin

Nitrofurantoin

Due to a in-vitro antagonism of nitrofurantoin. **Concomitant administration** of nitrofurantoin and norfloxacin **should therefore be avoided**

DRUG INTERACTIONS

Prulifloxacin:

Norfloxacin:

Theophylline

Isolated cases of theophylline-related side-effects have also been reported in patients on concomitant therapy with norfloxacin and theophylline. **Plasma levels of theophylline should therefore be monitored and the dosage adjusted as required**

Caffeine

The Metabolism of caffeine has been shown to be inhibited by norfloxacin. This can result in delayed elimination and prolonged plasma half-life of caffeine. **During treatment with norfloxacin**, the **ingestion of caffeine-containing medications should therefore be avoided where possible**

Cyclosporin

Elevated serum levels of cyclosporin have been reported with concomitant use of norfloxacin. **Cyclosporin serum concentrations should therefore be monitored and the dosage adjusted as appropriate.**

NSAIDs

Concomitant administration of NSAIDs and norfloxacin could enhance the risk of epileptic seizures. **Therefore Caution should be taken when using norfloxacin, in patients with concomitant use of NSAIDs**

ANTIBACTERIAL SPECTRUM

Prulifloxacin:

Prulifloxacin antibacterial spectrum is well balanced between Gram+ and Gram-

Prulifloxacin works very well on Pseudomonas Aeruginosa

Norfloxacin:

Norfloxacin works well only su some Gram- :

Proteus Vulgaris
Salmonella spp.
Shigella spp.

which are not the bacteria common responsible of urinary infections

Escherichia Coli, Proteus Mirabilis, Klebsiella Pnemonia (the bacteria usually responsible of urinary infections) **could be species for which acquired resistence may be a problem**

Prulifloxacin-Ofloxacin

THERAPEUTIC INDICATIONS

Prulifloxacin:

1) Acute uncomplicated lower urinary tract infections (simple cystitis);
2) Complicated lower urinary tract infections;
3) Acute exacerbation of chronic bronchitis,
4) Acute bacterial rhinosinusitis

Ofloxacin:

1) Upper and lower urinary tract infections;
2) Lower respiratory tract infections;
3) Uncomplicated urethral and cervical gonorrhoea;
4) Non-gonococcal urethritis and cervicitis,
5) Skin and soft tissue infections.

POSOLOGY

Prulifloxacin:

In **simple cystitis only one 600mg tablet** (one shot therapy)
In every other indication: **one 600 mg tablet once a day** up to 10-days of maximum treatment.

t 1/2 = 10 hours

a 600mg tablet is able to overcome the MIC of susceptible bacteria all day long

Ofloxacin:

The dose of ofloxacin is determined by the type and severity of the infection. The dosage range is 200mg to 800mg daily.

Up to 400mg may be given as a single dose, preferably in the morning, larger doses should be given as two divided doses.

t 1/2 = 4-6 hours

a 400mg dose, given as a single dose, could not be able to overcome the MIC of susceptible bacteria all day long

so a once a day administration could be lead to therapy failure or resistence growing

DRUG FORMULATIONS

Prulifloxacin:
film coated tablets

Ofloxacin:
film coated tablets
solution for infusion

RENAL IMPAIRMENT

Prulifloxacin:
Because of the lack of specific studies, it is not possible to determine the dosage in patients with renal insufficiency (patients with creatinine clearance < 60 ml/min). Thus, in these patients, monitoring of the plasma levels of the drug is
the most reliable method for adjustment of the dosage.

Ofloxacin:
in the SPC there is clear scheme of ofloxacin posology for patients with renal impairment

LIVER IMPAIRMENT

Prulifloxacin:
Because of the lack of specific studies, it is not possible to determine the dosage in patients with hepatic insufficiency. Thus, in these patients, monitoring of the plasma levels of the drug is the most reliable method for adjustment of the dosage.

Ofloxacin:
The excretion of ofloxacin may be reduced in patients with severe hepatic dysfunction.

Ofloxacin **should be used with caution** in patients with impaired liver function, as liver damage may occur.

QT ISSUES

Prulifloxacin has a ***very low*** potential risk of induction of QT interval prolongation

Ofloxacin has a ***low*** potential risk of induction of QT interval prolongation, but it's enough to lead to **special warnings and precautions to use:**

Caution should be taken when using ofloxacin, in patients with **known risk factors** for **prolongation of the QT** interval such as, for example:

1) **congenital long QT syndrome**
2) **concomitant use of drugs that are known to prolong the QT interval (e.g. Class IA and III anti-arrhythmics, tricyclic antidepressants, macrolides, antipsychotics)**
3) **uncorrected electrolyte imbalance (e.g. hypokalaemia, hypomagnesaemia)**
4) **cardiac disease (e.g. heart failure, myocardial infarction, bradycardia)**
5) **Elderly patients and women may be more sensitive to QTc-prolonging medications. Therefore, caution should be taken when using norfloxacin, in these populations.**

SKIN (photosensitivity) ISSUES

Prulifloxacin:

Ofloxacin:

Patients being treated with **ofloxacin should not expose** themselves unnecessarily **to strong sunlight** and should **avoid UV rays** (sun lamps, solaria).

CNS ISSUES

Prulifloxacin:

The weak prulifloxacin concentration found in the cerebro spinal fluid after i.v. administration in dog and repeated p.o. administration in humans, shows that prulifloxacin **hardly crosses the blood brain barrier.**

For this reason Prulifloxacin has not specific warnings about CNS issues

Ofloxacin:

CNS side effects

Ofloxacin is **contra-indicated** in patients with a history of **epilepsy or with a lowered seizure threshold**

Peripheral neuropathy

Peripheral sensory neuropathy and peripheral sensory motor neuropathy **have been reported in patients receiving ofloxacin, which can be rapid in its onset .**

Psychotic disorders

Ofloxacin **should be used with caution** in patients with a history of **psychotic disorder** or in patients with **psychiatric disease.**

DRUG INTERACTIONS

Prulifloxacin:

Food and Milk

Concomitant ingestion of prulifloxacin and milk results in decreased area under the concentration-time curve (AUC) and decreased urinary recovery of prulifloxacin, while ingestion of food delays and reduces peak levels.

Prulifloxacin has to be administred away from meals and milk

Ofloxacin:

Glibenclamide

Ofloxacin may cause a slight increase in serum concentrations of glibenclamide administered concurrently; patients treated with this combination **should be closely monitored.**

ANTIBACTERIAL SPECTRUM

Prulifloxacin:

Prulifloxacin antibacterial spectrum is well balanced between Gram+ and Gram-

Prulifloxacin works very well on Pseudomonas Aeruginosa

Ofloxacin:

Ofloxacin antibacterial spectrum is well balanced between Gram+ and Gram-

but…

Ofloxacin doesn't work well on Pseudomonas Aeruginosa