LINZ

For Medical Professional only

CIPLINZ

(Ciprofloxacin)

250mg, 500mg Tablets

(Product Specs.: U.S.P.)

سپلنز ٹیبلٹ

Ciplinz (Ciprofloxacin hydrochloride) Tablets are synthetic broad spectrum antimicrobial agents for oral administration. Ciprofloxacin hydrochloride, USP, a fluoroquinolone, is the monohydrochloride monohydrate salt of 1-cyclopropyl-6-fluoro-1, 4-dihydro-4-oxo-7-(1-piperazinyl)-3-quinolinecarboxylic acid. It is a faintly yellowish to light yellow crystalline substance.

INDICATIONS

Ciplinz is indicated for the treatment of infections caused by susceptible strains of the designated microorganisms in the conditions and patient populations listed below.

Urinary Tract Infections caused by Escherichia coli, Klebsiella pneumoniae, Enterobacter cloacae, Serratia marcesens, Proteus mirabilis, Providencia rettgeri, Morganella morganii, Citrobacter diversus, Citrobacter freundii, Pseudomonas aeruginosa, methicillin-susceptible Staphylococcus epidermidis, Staphylococcus saprophytics or Enterococcus faecalis.

Acute Uncomplicated Cystitis in females caused by Escherichia coli or Staphylococcus saprophyticus.

Chronic Bacterial Prostatitis caused by Escherichia coli or Proteus mirabilis.

Lower Respiratory Tract Infections caused by Escherichia coli, Klebsiella pneumoniae, Enterobacter cloacae, Proteus mirabilis, Pseudomonas aeruginosa, Haemophilus influenzae, Haemophilus parainfluenzae or penicillin-susceptible Streptococcus pneumoniae. Also, Moraxella catarrhalis for the treatment of acute exacerbations of chronic bronchitis.

Skin and Skin Structure Infections caused by Escherichia coli, Klebsiella pneumoniae, Enterobacter cloacae, Proteus mirabilis, Proteus vulgaris, Providencia stuartii, Morganella morganii, Citrobacter freundii, Pseudomonas aeruginosa, methicillin-susceptible Staphylococcus aureus, methicillin-susceptible Staphylococcus epidermidis or Streptococcus pyogenes.

Bone and Joint Infections caused by Enterobacter cloacae, Serratia marcescens or Pseudomonas aeruginosa.

Complicated Intra-Abdominal Infections (used in combination with metronidazole) caused by Escherichia coli, Pseudomonas aeruginosa, Proteus mirabilis, Klebsiella pneumoniae or Bacteroides fragilis.

Infectious Diarrhea caused by Escherichia coli (enterotoxigenic strains), Campylobacter jejuni, Shigella boydii,† Shigella dysenteriae, Shigella flexneri or Shigella sonnei† when antibacterial therapy is indicated.

Typhoid Fever (Enteric Fever) caused by Salmonella typhi.

NOTE: The efficacy of Ciprofloxacin in the eradication of the chronic typhoid carrier state has not been demonstrated.

Uncomplicated Cervical and Urethral Gonorrhea due to Neisseria gonorrhoeae.

DOSAGE AND ADMINISTRATION

Ciplinz Tablets should be administered orally to adults as described in the Dosage Guidelines table.

The determination of dosage for any particular patient must take into consideration the severity and nature of the infection, the susceptibility of the causative organism, the integrity of the patient's host-defense mechanisms, and the status of renal function and hepatic function.

The duration of treatment depends upon the severity of infection. The usual duration is 7 to 14 days; however, for severe and complicated infections more prolonged therapy may be required.

Ciplinz should be administered at least 2 hours before or 6 hours after magnesium/aluminum antacids, or sucralfate, chewable/buffered tablets or pediatric powder for oral solution, other highly buffered drugs or other products containing calcium, iron or zinc.

ADULT DOSAGE GUIDELINES

Infection	Severity	Dose	Frequency	Usual Duration†
Urinary Tract	Acute Uncomplicated	250mg	q 12 h	3 days
	Mild/Moderate	250mg	q 12 h	7 to 14 days
	Severe/Complicated	500mg	q 12 h	7 to 14 days
Chronic Bacterial Prostatitis	Mild/Moderate	500mg	q 12 h	28 days
Lower Respiratory Tract	Mild/Moderate	500mg	q 12 h	7 to 14 days
Acute Sinusitis	Mild/Moderate	500mg	q 12 h	10 days
Skin and Skin Structure	Mild/Moderate	500mg	q 12 h	7 to 14 days
Bone and Joint	Mild/Moderate	500mg	q 12 h	≥4 to 6 weeks
Intra-Abdominal*	Complicated	500mg	q 12 h	7 to 14 days
Infectious Diarrhea	Mild/Moderate/Severe	500mg	q 12 h	5 to 7 days
Typhoid Fever	Mild/Moderate	500mg	q 12 h	10 days
Urethral and Cervical Gonococcal Infections	Uncomplicated	250mg	single dose	single dose
Inhalational anthrax (post-exposure)**		500mg	q 12 h	60 days

* used in conjunction with metronidazole

† Generally, ciprofloxacin should be continued for at least 2 days after the signs and symptoms of infection have disappeared, except for inhalational anthrax (post-exposure).

** Drug administration should begin as soon as possible after suspected or confirmed exposure. This indication is based on a surrogate endpoint, ciprofloxacin serum concentrations achieved in humans, reasonably likely to predict clinical benefit[4]

Adults with Impaired Renal Function:

Some modification of dosage is recommended, particularly for patients with severe renal dysfunction. The following table provides dosage guidelines for use in patients with renal impairment:

RECOMMENDED STARTING AND MAINTENANCE DOSES

FOR PATIENTS WITH IMPAIRED RENAL FUNCTION

Creatinine Clearance (mL/min)	Dose
> 50	See **Usual Dosage**.
30 – 50	250 – 500 mg q 12 h
5 – 29	250 – 500 mg q 18 h
Patients on hemodialysis or Peritoneal dialysis	250 – 500 mg q 24 h (after dialysis)

When only the serum creatinine concentration is known, the following formula may be used to estimate creatinine clearance.

Men: Creatinine clearance (mL/min) = $\frac{\text{Weight (kg)} \times (140\text{-age})}{72 \times \text{serum creatinine (mg/dL)}}$

Women: 0.85 x the value calculated for men.

The serum creatinine should represent a steady state of renal function.

In patients with severe infections and severe renal impairment, a unit dose of 750 mg may be administered at the intervals noted above. Patients should be carefully monitored.

SIDE EFFECTS

Adverse Reactions in Adult Patients: During clinical investigations with oral and parenteral Ciprofloxacin, 49,038 patients received courses of the drug. Most of the adverse events reported were described as only mild or moderate in severity, abated soon after the drug was discontinued, and required no treatment. Ciprofloxacin was discontinued because of an adverse event in 1.0% of orally treated patients.

The most frequently reported drug related events, from clinical trials of all formulations, all dosages, all drug-therapy durations, and for all indications of Ciprofloxacin therapy were nausea (2.5%), diarrhea (1.6%), liver function tests abnormal (1.3%), vomiting (1.0%), and rash (1.0%).

Additional medically important events that occurred in less than 1% of Ciprofloxacin patients are listed below.

BODY AS A WHOLE: headache, abdominal pain/discomfort, foot pain and pain in extremities

CARDIOVASCULAR: palpitation, atrial flutter, ventricular ectopy, syncope, hypertension, angina pectoris, myocardial infarction, cardiopulmonary arrest, cerebral thrombosis, phlebitis, tachycardia, migraine and hypotension

CENTRAL NERVOUS SYSTEM: restlessness, dizziness, lightheadedness, insomnia, nightmares, hallucinations, manic reaction, irritability, tremor, ataxia, convulsive seizures, lethargy, drowsiness, weakness, malaise, anorexia, phobia, depersonalization, depression, paresthesia, abnormal gait and grand mal convulsion

GASTROINTESTINAL: painful oral mucosa, oral candidiasis, dysphagia, intestinal perforation, gastrointestinal bleeding, cholestatic jaundice and hepatitis

HEMIC/LYMPHATIC: lymphadenopathy, petechia

METABOLIC/NUTRITIONAL: amylase increase and lipase increase

MUSCULOSKELETAL: arthralgia or back pain, joint stiffness, achiness, neck or chest pain and flare up of gout

RENAL/UROGENITAL: interstitial nephritis, nephritis, renal failure, polyuria, urinary retention, urethral bleeding, vaginitis, acidosis and breast pain

RESPIRATORY: dyspnea, epistaxis, laryngeal or pulmonary edema, hiccough, hemoptysis, bronchospasm and pulmonary embolism

SKIN/HYPERSENSITIVITY: allergic reaction, pruritus, urticaria, photosensitivity/ phototoxicity reaction, flushing, fever, chills, angioedema, edema of the face, neck, lips, conjunctivae or hands, cutaneous candidiasis, hyperpigmentation, erythema nodosum and sweating

SPECIAL SENSES: blurred vision, disturbed vision (change in color perception, overbrightness of lights), decreased visual acuity, diplopia, eye pain, tinnitus, hearing loss, bad taste and chromatopsia In several instances nausea, vomiting, tremor, irritability, or palpitation were judged by investigators to be related to elevated serum levels of theophylline possibly as a result of drug interaction with Ciprofloxacin.

Adverse Laboratory Changes: Changes in laboratory parameters listed as adverse events without regard to drug relationship are listed below:

Hepatic - Elevations of ALT (SGPT) (1.9%), AST (SGOT) (1.7%), alkaline phosphatase (0.8%), LDH (0.4%), serum bilirubin (0.3%).

Hematologic - Eosinophilia (0.6%), leukopenia (0.4%), decreased blood platelets (0.1%), elevated blood platelets (0.1%), pancytopenia (0.1%).

Renal - Elevations of serum creatinine (1.1%), BUN (0.9%), CRYSTALLURIA, CYLINDRURIA, AND HEMATURIA HAVE BEEN REPORTED.

Other changes occurring in less than 0.1% of courses were: elevation of serum gammaglutamyl transferase, elevation of serum amylase, reduction in blood glucose, elevated uric acid, decrease in hemoglobin, anemia, bleeding diathesis, increase in blood monocytes, leukocytosis.

DRUG INTERACTIONS

The serum concentrations of Ciprofloxacin and metronidazole were not altered when these two drugs were given concomitantly.

In a pharmacokinetic study, systemic exposure of tizanidine (4 mg single dose) was significantly increased (Cmax 7-fold, AUC 10-fold) when the drug was given concomitantly with Ciprofloxacin (500 mg bid for 3 days). The hypotensive and sedative effects of tizanidine were also potentiated. Concomitant administration of tizanidine and Ciprofloxacin is contraindicated.

As with some other quinolones, concurrent administration of Ciprofloxacin with theophylline may lead to elevated serum concentrations of theophylline and prolongation of its elimination half-life. This may result in increased risk of theophylline-related adverse reactions. If concomitant use cannot be avoided, serum levels of theophylline should be monitored and dosage adjustments made as appropriate.

Some quinolones, including Ciprofloxacin, have also been shown to interfere with the metabolism of **caffeine**. This may lead to reduced clearance of caffeine and a prolongation of its serum half-life.

Concurrent administration of a quinolone, including Ciprofloxacin, with multivalent cation-containing products such as magnesium/aluminum antacids, sucralfate, chewable/buffered tablets or pediatric powder, other highly buffered drugs, or products containing calcium, iron, or zinc may substantially decrease its absorption, resulting in serum and urine levels considerably lower than desired.

Histamine **H_2-receptor antagonists** appear to have no significant effect on the bioavailability of Ciprofloxacin.

Altered serum levels of **phenytoin** (increased and decreased) have been reported in patients receiving concomitant Ciprofloxacin.

The concomitant administration of Ciprofloxacin with the **sulfonylurea** glyburide has, on rare occasions, resulted in severe hypoglycemia.

Some quinolones, including Ciprofloxacin, have been associated with transient elevations in serum creatinine in patients receiving **cyclosporine** concomitantly.

Quinolones, including Ciprofloxacin, have been reported to enhance the effects of the oral **anticoagulant warfarin** or its derivatives. When these products are administered concomitantly, prothrombin time or other suitable coagulation tests should be closely monitored.

Probenecid interferes with renal tubular secretion of Ciprofloxacin and produces an increase in the level of Ciprofloxacin in the serum. This should be considered if patients are receiving both drugs concomitantly.

Renal tubular transport of **methotrexate** may be inhibited by concomitant administration of Ciprofloxacin potentially leading to increased plasma levels of methotrexate. This might increase the risk of methotrexate associated toxic reactions. Therefore, patients under methotrexate therapy should be carefully monitored when concomitant Ciprofloxacin therapy is indicated.

Metoclopramide significantly accelerates the absorption of Ciprofloxacin resulting in shorter time to reach maximum plasma concentrations. No significant effect was observed on the bioavailability of Ciprofloxacin.

Non-steroidal anti-inflammatory drugs (but not acetyl salicylic acid) in combination of very high doses of quinolones have been shown to provoke convulsions in pre-clinical studies.

WARNINGS

Tendinopathy and Tendon Rupture: Fluoroquinolones, including Ciplinz, are associated with an increased risk of tendinitis and tendon rupture in all ages. This adverse reaction most frequently involves the Achilles tendon, and rupture of the Achilles tendon may require surgical repair. Tendinitis and tendon rupture in the rotator cuff (the shoulder), the hand, the biceps, the thumb, and other tendon sites have also been reported. The risk of developing fluoroquinolone-associated

tendinitis and tendon rupture is further increased in older patients usually over 60 years of age, in patients taking corticosteroid drugs, and in patients with kidney, heart or lung transplants.
Factors, in addition to age and corticosteroid use, that may independently increase the risk of tendon rupture include strenuous physical activity, renal failure, and previous tendon disorders such as rheumatoid arthritis.
Tendinitis and tendon rupture have also occurred in patients taking fluoroquinolones who do not have the above risk factors. Tendon rupture can occur during or after completion of therapy; cases occurring up to several months after completion of therapy have been reported. Ciprofloxacin should be discontinued if the patient experiences pain, swelling, inflammation or rupture of a tendon. Patients should be advised at the first signs of tendinitis or tendon rupture, and to contact their healthcare provider regarding changing to a non-quinolone antimicrobial drug.
Pregnant Women: The safety and effectiveness of ciprofloxacin in pregnant and lactating women have not been established.
Cytochrome P450 (CYP450): Ciprofloxacin is an inhibitor of the hepatic CYP1A2 enzyme pathway. Coadministration of Ciprofloxacin and other drugs primarily metabolized by CYP1A2 (e.g. theophylline, methylxanthines, tizanidine) results in increased plasma concentrations of the coadministered drug and could lead to clinically significant pharmacodynamic side effects of the coadministered drug.
Theophylline: Serious and fatal reactions have been reported in patients receiving concurrent administration of ciprofloxacin and theophylline. These reactions have included cardiac arrest, seizure, status epilepticus, and respiratory failure. Although similar serious adverse effects have been reported in patients receiving theophylline alone, the possibility that these reactions may be potentiated by Ciprofloxacin cannot be eliminated. If concomitant use cannot be avoided, serum levels of theophylline should be monitored and dosage adjustments made as appropriate.
Hypersensitivity Reactions: Serious and occasionally fatal hypersensitivity (anaphylactic) reactions, some following the first dose, have been reported in patients receiving quinolone therapy. Some reactions were accompanied by cardiovascular collapse, loss of consciousness, tingling, pharyngeal or facial edema, dyspnea, urticaria, and itching. Only a few patients had a history of hypersensitivity reactions. Serious anaphylactic reactions require immediate emergency treatment with epinephrine. Oxygen, intravenous steroids, and airway management, including intubation, should be administered as indicated.
Other serious and sometimes fatal events, some due to hypersensitivity, and some due to uncertain etiology, have been reported rarely in patients receiving therapy with quinolones, including Ciprofloxacin. These events may be severe and generally occur following the administration of multiple doses. Clinical manifestations may include one or more of the following:
* fever, rash, or severe dermatologic reactions (e.g., toxic epidermal necrolysis, Stevens-Johnson syndrome)
* vasculitis; arthralgia; myalgia; serum sickness
* allergic pneumonitis
* interstitial nephritis; acute renal insufficiency or failure
* hepatitis; jaundice; acute hepatic necrosis or failure
* anemia, including hemolytic and aplastic; thrombocytopenia, including thrombotic thrombocytopenic purpura; leukopenia; agranulocytosis; pancytopenia; and/or other hematologic abnormalities.

The drug should be discontinued immediately at the first appearance of a skin rash, jaundice, or any other sign of hypersensitivity and supportive measures instituted
Pseudomembranous Colitis: Clostridium difficile associated diarrhea (CDAD) has been reported with use of nearly all antibacterial agents, including Ciprofloxacin, and may range in severity from mild diarrhea to fatal colitis. C. difficile produces toxins A and B which contribute to the development of CDAD. Hypertoxin producing strains of C. difficile cause increased morbidity and mortality, as these infections can be refractory to antimicrobial therapy and may require colectomy. CDAD must be considered in all patients who present with diarrhea following antibiotic use. Careful medical history is necessary since CDAD has been reported to occur over two months after the administration of antibacterial agents.
If CDAD is suspected or confirmed, ongoing antibiotic use not directed against C. difficile may need to be discontinued. Appropriate fluid and electrolyte management, protein supplementation, antibiotic treatment of C. difficile, and surgical evaluation should be instituted as clinically indicated.
Peripheral neuropathy: Rare cases of sensory or sensorimotor axonal polyneuropathy affecting small and/or large axons resulting in paresthesias, hypoesthesias, dysesthesias and weakness have been reported in patients receiving quinolones, including Ciprofloxacin. Ciprofloxacin should be discontinued if the patient experiences symptoms of neuropathy including pain, burning, tingling, numbness, and/or weakness, or is found to have deficits in light touch, pain, temperature, position sense, vibratory sensation, and/or motor strength in order to prevent the development of an irreversible condition.
Syphilis: Ciprofloxacin has not been shown to be effective in the treatment of syphilis. Patients treated with Ciprofloxacin should have a follow-up serologic test for syphilis after three months.
PRECAUTIONS
General: Crystals of Ciprofloxacin have been observed rarely in the urine of human subjects but more frequently in the urine of laboratory animals, which is usually alkaline. Crystalluria related to Ciprofloxacin has been reported only rarely in humans because human urine is usually acidic. Alkalinity of the urine should be avoided in patients receiving Ciprofloxacin. Patients should be well hydrated to prevent the formation of highly concentrated urine.
Photosensitivity/Phototoxicity: Moderate to severe photosensitivity/phototoxicity (manifest as exaggerated sunburn reactions e.g., burning, erythema, exudation, vesicles, blistering, edema) can be associated with the use of quinolones after sun or UV light exposure. Therefore, excessive exposure to these sources of light should be avoided. Drug therapy should be discontinued if phototoxicity occurs.
Carcinogenesis & Impairment of Fertility: Long-term carcinogenicity studies in rats and mice resulted in no carcinogenic or tumorigenic effects due to Ciprofloxacin at daily oral dose levels up to 250 and 750 mg/kg to rats and mice, respectively. Fertility studies performed in rats at oral doses of Ciprofloxacin up to 100 mg/kg revealed no evidence of impairment.
Pregnancy: Category C
Teratogenic Effects: There are no adequate and well-controlled studies in pregnant women but the data are insufficient to state that there is no risk. Ciprofloxacin should not be used during pregnancy unless the potential benefit justifies the potential risk to both fetus and mother.
Reproduction studies have been performed in rats and mice using oral doses up to 100 mg/kg (0.6 and 0.3 times the maximum daily human dose based upon body surface area, respectively) and have revealed no evidence of harm to the fetus due to Ciprofloxacin.
After intravenous administration of doses up to 20 mg/kg (approximately 0.3-times the highest recommended therapeutic dose based upon mg/m2) no maternal toxicity was produced and no embryotoxicity or teratogenicity was observed.
Nursing Mothers: Ciprofloxacin is excreted in human milk. Because of the potential for serious adverse reactions a decision should be made whether to discontinue nursing or to discontinue the drug, taking into account the importance of the drug to the mother.
Complicated Urinary Tract Infection and Pyelonephritis: Ciprofloxacin is indicated for the treatment of complicated urinary tract infections and pyelonephritis due to Escherichia coli. Although effective in clinical trials, Ciprofloxacin is not a drug of first choice in the pediatric population due to an increased incidence of adverse events.
Cystic Fibrosis: Short-term safety data from a single trial in pediatric cystic fibrosis patients are available. In this clinical trial the relationship of adverse event to the patient's course of Ciprofloxacin can not be definitively determined.
Geriatric Use: Geriatric patients are at increased risk for developing severe tendon disorders including tendon rupture when being treated with a fluoroquinolone such as Ciplinz. This risk is further increased in patients receiving concomitant corticosteroid therapy.
No alteration of dosage is necessary for patients greater than 65 years of age with normal renal function. However, an older individuals dose should be taken in dose selection, and renal function monitoring may be useful in these patients.
In general, elderly patients may be more susceptible to drug-associated effects on the QT interval. Therefore, precaution should be taken when using Ciprofloxacin with concomitant drugs that can result in prolongation of the QT interval (e.g., class IA or class III antiarrhythmics) or in patients with risk factors for torsade de pointes (e.g., known QT prolongation, uncorrected hypokalemia).
OVERDOSE
In the event of acute overdosage, reversible renal toxicity has been reported in some cases. The stomach should be emptied by inducing vomiting or by gastric lavage. The patient should be carefully observed and given supportive treatment, including monitoring of renal function and administration of magnesium, aluminum, or calcium containing antacids which can reduce the absorption of Ciprofloxacin. Adequate hydration must be maintained. Only a small amount of Ciprofloxacin (< 10%) is removed from the body after hemodialysis or peritoneal dialysis.
CONTRAINDICATIONS
Ciprofloxacin is contraindicated in persons with a history of hypersensitivity to Ciprofloxacin, any member of the quinolone class of antimicrobial agents, or any of the product components.
CLINICAL PHARMACOLOGY
Absorption: Ciprofloxacin given as an oral tablet is rapidly and well absorbed from the gastrointestinal tract after oral administration. The absolute bioavailability is approximately 70% with no substantial loss by first pass metabolism.
Maximum serum concentrations are attained 1 to 2 hours after oral dosing. Mean concentrations 12 hours after dosing with 250 & 500 are 0.1, 0.2µg/mL, respectively. The serum elimination half-life in subjects with normal renal function is approximately 4 hours. Serum concentrations increase proportionately with doses up to 1000 mg.
When Ciplinz Tablet is given concomitantly with food, there is a delay in the absorption of the drug, resulting in peak concentrations that occur closer to 2 hours after dosing rather than 1 hrs. The overall absorption of Ciplinz Tablet however, is not substantially affected.
Distribution: The binding of Ciplinz to serum proteins is 20 to 40% which is not likely to be high enough to cause significant protein binding interactions with other drugs.
After oral administration, Ciplinz is widely distributed throughout the body. Tissue concentrations often exceed serum concentrations in both men and women, particularly in genital tissue including the prostate.
Ciplinz is present in active form in the saliva, nasal and bronchial secretions, mucosa of the sinuses, sputum, skin blister fluid, lymph, peritoneal fluid, bile, and prostatic secretions. Ciplinz has also been detected in lung, skin, fat, muscle, cartilage, and bone. The drug diffuses into the cerebrospinal fluid (CSF); however, CSF concentrations are generally less than 10% of peak serum concentrations. Low levels of the drug have been detected in the aqueous and vitreous humors of the eye.
Metabolism: Four metabolites have been identified in human urine which together account for approximately 15% of an oral dose. The metabolites have antimicrobial activity, but are less active than unchanged Ciprofloxacin.
Excretion: The serum elimination half-life in subjects with normal renal function is approximately 4 hours. Approximately 40 to 50% of an orally administered dose is excreted in the urine as unchanged drug.
The urinary excretion of Ciplinz is virtually complete within 24 hours after dosing. The renal clearance of Ciplinz, which is approximately 300 mL/minute, exceeds the normal glomerular filtration rate of 120 mL/minute. Thus, active tubular secretion would seem to play a significant role in its elimination. Co-administration of probenecid with Ciplinz results in about a 50% reduction in the Ciplinz renal clearance and a 50% increase in its concentration in the systemic circulation.
Although bile concentrations of Ciplinz are several fold higher than serum concentrations after oral dosing, only a small amount of the dose administered is recovered from the bile as unchanged drug. An additional 1 to 2% of the dose is recovered from the bile in the form of metabolites.
Special Populations: Pharmacokinetic studies of the oral (single dose) indicate that plasma concentrations of Ciplinz are higher in elderly subjects (> 65 years) as compared to young adults. Although the Cmax is increased 16-40%, the mean AUC is approximately 30% less, and can be at least partially attributed to decreased renal clearance in the elderly. Elimination half-life is only slightly (~20%) prolonged in the elderly. These differences are not considered clinically significant.
In preliminary studies in patients with stable chronic liver cirrhosis, no significant changes in Ciplinz pharmacokinetics have been observed. The kinetics of Ciprofloxacin in patients with acute hepatic insufficiency, however, has not been fully elucidated.
Microbiology: Ciplinz has in vitro activity against a wide range of gram-negative and gram-positive microorganisms. The bactericidal action of Ciplinz results from inhibition of the enzymes topoisomerase II (DNA gyrase) and topoisomerase IV required for bacterial DNA replication, transcription, repair, and recombination.
The mechanism of action of fluoroquinolones, including Ciplinz, is different from that of penicillins, cephalosporins, aminoglycosides, macrolides, and tetracyclines; therefore, microorganisms resistant to these classes of drugs may be susceptible to Ciplinz and other quinolones. There is no known cross-resistance between Ciprofloxacin and other classes of antimicrobials. In vitro resistance to Ciprofloxacin develops slowly by multiple step mutations.
Ciplinz is slightly less active when tested at acidic pH. The inoculums size has little effect when tested in vitro. The minimal bactericidal concentration (MBC) generally does not exceed the minimal inhibitory concentration (MIC) by more than a factor of 2.
Ciplinz has been shown to be active against most strains of the following microorganisms, both in vitro and in clinical infections
Gram-positive microorganisms
Enterococcus faecalis (Many strains are only moderately susceptible.)
Staphylococcus aureus (methicillin-susceptible strains only)
Staphylococcus epidermidis (methicillin-susceptible strains only)
Staphylococcus saprophyticus
Streptococcus pneumoniae (penicillin-susceptible strains only)
Streptococcus pyogenes
Gram-negative microorganisms
Bacteroides fragilis
Campylobacter jejuni
Citrobacter diversus
Citrobacter freundli
Enterobacter cloacae
Escherichia coli
Haemophilus influenzae
Haemophilus parainfluenzae
Klebsiella pneumoniae
Moraxella catarrhalis
Morganella morganii
Neisseria gonorrhoeae
Proteus mirabilis
Proteus vulgaris
Providencia rettgeri
Providencia stuartii
Pseudomonas aeruginosa
Salmonella typhi
Serratia marcescens
Shigella boydii
Shigella dysenteriae
Shigella flexneri
Shigella sonnei
Ciprofloxacin has been shown to be active against Bacillus anthracis both in vitro and by use of serum levels as a surrogate marker.
PACKS:
Tablets 250 & 500mg in ALU ALU packing
STORAGE:
Protect from sunlight and moisture, store at cool and dry place.
Keep all medicines away from children and pets.

Warning: to be sold on prescription of a registered medical practitioner only.

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سورج کی روشنی اور نمی سے محفوظ ٹھنڈی اور خشک جگہ پر رکھیں۔
بچوں کی پہنچ سے دور رکھیں۔
ڈاکٹر کی ہدایت کے مطابق استعمال کریں۔
اشتباہ : صرف رجسٹرڈ میڈیکل پریکٹیشنر کے نسخے پر فروخت کے لئے۔

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