Oxaquin®

(Moxifloxacin)

Highnoon

COMPOSITION
Oxaquin 400 mg Tablet: Each film-coated tablet contains: Moxifloxacin (as HCl) 400mg

DESCRIPTION
Oxaquin (Moxifloxacin hydrochloride) is a synthetic broad spectrum antibacterial agent for oral administration.

MECHANISM OF ACTION
Moxifloxacin is a broad spectrum antibiotic that is active against both Gram- Positive and Gram-negative bacteria. The bactericidal action of moxifloxacin results from inhibition of the topoisomerase II (DNA gyrase) and topoisomerase IV required for bacterial DNA replication, transcription, repair, and recombination.

PHARMACOKINETICS
Moxifloxacin is readily absorbed from the gastrointestinal tract after oral doses with an absolute bioavailability of about 90%. Co-administration with a high fat meal (that is, 500 calories from fat) does not affect the absorption of moxifloxacin. It is widely distributed through out the body tissue and is about 30 to 50% bound to plasma proteins. Moxifloxacin has an elimination half life of about 12 hours, allowing once daily dosing. It is metabolized mainly via sulfate and glucuronide conjugation and is excreted in the urine and the faeces as unchanged drug and as metabolites, the sulfate conjugates mainly in the faeces and the glucuronide exclusively in the urine. Distribution into milk has been found in animals.

INDICATIONS AND USAGE
It is indicated for the treatment of adults (≥ 18 years of age) with infections caused by susceptible isolates of the designated microorganisms in the conditions listed below

- It is indicated for the treatment of Acute Bacterial Sinusitis caused by susceptible isolates of Streptococcus pneumoniae, Haemophilus influenzae, or Moraxella catarrhalis.
- It is indicated for the treatment of Acute Bacterial Exacerbation of Chronic Bronchitis caused by susceptible isolates of Streptococcus pneumoniae, Haemophilus influenzae, Haemophilus parainfluenzae, Klebsiella pneumoniae, methicillin-susceptible Staphylococcus aureus, or Moraxella catarrhalis.
- It is indicated for the treatment of Community Acquired Pneumonia caused by susceptible isolates of Streptococcus pneumoniae, Haemophilus influenzae, Moraxella catarrhalis, methicillin-susceptible Staphylococcus aureus, Klebsiella pneumoniae, Mycoplasma pneumoniae, or Chlamydophila pneumoniae.
- It is indicated in adult patients for the treatment of Uncomplicated Skin and Skin Structure Infections caused by susceptible isolates of methicillin-susceptible Staphylococcus aureus or Streptococcus pyogene.
- It is indicated in adult patients for the treatment of Complicated Skin and Skin Structure Infections caused by susceptible isolates of methicillin-susceptible Staphylococcus aureus, Escherichia coli, Klebsiella pneumoniae, or Enterobacter cloacae.
- It is indicated in adult patients for the treatment of Complicated Intra-Abdominal Infections including polymicrobial infections such as abscess caused by susceptible isolates of Escherichia coli, Bacteroides fragilis, Streptococcus anginosus, Streptococcus constellatus, Enterococcus faecalis, Proteus mirabilis, Clostridium perfringens, Bacteroides thetaiotaomicron, or Peptostreptococcus species.
- It is indicated in adult patients for the treatment of plague, including pneumonic and septicemic plague, due to susceptible isolates of Yersinia pestis and prophylaxis of plague in adult patients.

DOSAGE AND ADMINISTRATION
The dosage is 400 mg, orally once every 24 hours. The duration of therapy depends on the type of infection as described below;

- In Acute Bacterial Sinusitis infection, the dose is 400 mg once daily for 10 days.
- In Acute Bacterial Exacerbation of Chronic Bronchitis infection, the dose is 400 mg once daily for 05 days.
- In Community Acquired Pneumonia infection, the dose is 400 mg once daily for 7-14 days.
- In Uncomplicated Skin and Skin Structure Infections, the dose is 400 mg once daily for 7 days.
- In Complicated Skin and Skin Structure Infections, the dose is 400 mg once daily for 7-21 days.
- In Complicated Intra-Abdominal Infections, the dose is 400 mg once daily for 5-14 days.
- In Plague, the dose is 400 mg once daily for 10-14 days.

Oral doses of Moxifloxacin should be administered at least 4 hours before or 8 hours after products containing magnesium, aluminum, iron or zinc, including antacids, sucralfate, multivitamins and didanosine chewable/buffered tablets for oral suspension or the pediatric powder for oral solution

CONTRAINDICATIONS
It is contraindicated in persons with a history of hypersensitivity to moxifloxacin or any member of the quinolone class of antimicrobial agents.

DRUG INTERACTIONS
- Fluoroquinolones, including Moxifloxacin, are known to inhibit the cytochrome P450 isoenzyme CYP1A2 and may increase plasma concentrations of drugs, such as clozapine, ropinirol, theophylline and tizanidine, that are metabolized by this isoenzyme. Use of Fluoroquinolones with tizanidine is contraindicated, although theophylline may be used providing its dose is reduced and concentrations monitored. Clozapine or ropinirol may also be used, providing appropriate clinical surveillance occurs with subsequent dose adjustment where necessary.
- The absorption of the fluoroquinolone is reduced by the antacids containing aluminum or magnesium and also by calcium, iron and zinc salt. Sucralfate releases aluminium ions in the stomach and thereby reducing the absorption of fluoroquinolones. In addition antacid, or oral iron preparations might antagonize the antibacterial activity of fluoroquinolone with in the gut lumen. Enteral feeds, which contains cations, have also been found to reduce the absorption of fluoroquinolones. Exposure to Moxifloxacin was also reduced by lanthanum carbonate, and was thought to be due to lanthanum ion forming a non-absorbable complex with Moxifloxacin. A reduction in Moxifloxacin bioavailability has also been reported after chewable tablets of didanosine which contains aluminium and magnesium ion buffering agents. Therefore, it should be taken at least 4 hours before or 8 hours after these agents
- Quinolones, including Moxifloxacin, have been reported to enhance the anticoagulant effects of warfarin or its derivatives in the patient population. In addition, infectious disease and its accompanying inflammatory process, age, and general status of the patient are risk factors for increased anticoagulant activity. Therefore the prothrombin time, International Normalized Ratio (INR), or other suitable anticoagulation tests should be closely monitored if a quinolone is administered concomitantly with warfarin or its derivatives.
- Disturbances of blood glucose, including hyperglycemia and hypoglycemia, have been reported in patients treated concomitantly with fluoroquinolones and an antidiabetic agent. Therefore, careful monitoring of blood glucose is recommended when these agents are co-administered. If a hypoglycemic reaction occurs, Moxifloxacin should be discontinued and appropriate therapy should be initiated immediately.
- Concomitant administration of a nonsteroidal anti-inflammatory drug with a quinolone may increase the risks of CNS stimulation and convulsions. Fluoroquinolones also interacts with opioid analgesic.
- Some fluoroquinolones have the potential to prolong the QT interval and should be avoided in patients also receiving class Ia antiarrhythmic drugs (such as quinidine and procainamide) or class III antiarrhythmic, drugs (such as Amiodarone & Sotalol). In addition, caution should be exercised when they are used with other drugs known to have this effect (such as the antihistamines astemizole and terfenadine, cisapride, erythromycin, pentamidine, phenothiazines, or tricyclic antidepressants).
- The excretion of fluoroquinolones is reduced and plasma concentrations may be increased by probenecid.
- Transients increase in serum creatinine has occurred when fluoroquinolones is given with cidosporin; monitoring of serum creatinine concentrations is recommended.
- The simultaneous use of parenteral fluoroquinolones and azlocillin has resulted in higher and more prolonged serum concentrations of fluoroquinolones. Steady state plasma concentrations of Moxifloxacin are significantly reduced when given with rifampicin and isoniazid for the treatment of tuberculosis.
- Antifungal (such as fluconazole) can also prolong the QT interval. The simultaneous use of fluoroquinolones and fluconazole resulted in an episode of torsade de pointes in a patient on haemodialysis.

WARNINGS AND PRECAUTIONS
The following precaution & warning should be measured during Moxifloxacin treatment;

- Fluoroquinolones, including moxifloxacin, have been associated with disabling and potentially irreversible serious adverse reactions from different body systems that can occur together in the same patient. Commonly seen adverse reactions include tendinitis, tendon rupture, arthralgia, myalgia, peripheral neuropathy, and central nervous system effects (hallucinations, anxiety, depression, insomnia, severe headaches, and confusion). Discontinue moxifloxacin immediately at the first signs or symptoms of any serious adverse reaction.
- Fluoroquinolones, including Moxifloxacin, are associated with an increased risk of tendinitis and tendon rupture in all ages. It may cause pain and inflammation of your tendons, particularly if you are elderly or if you are also taking corticosteroids. At the first sign of any pain or inflammation you should stop taking moxifloxacin tablets. Avoid any unnecessary exercise, as this might increase the risk of a tendon rupture. Inflammation and ruptures of tendons may occur even up to several months after discontinuing therapy with Moxifloxacin.
- Fluoroquinolones, including Moxifloxacin, have been associated with an increased risk of peripheral neuropathy. 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 fluoroquinolones including moxifloxacin. Symptoms may occur soon after initiation of moxifloxacin and may be irreversible in some patients. Discontinue moxifloxacin immediately if the patient experiences symptoms of peripheral neuropathy including pain, burning, tingling, numbness, and/or weakness or other alterations of sensation including light touch, pain, temperature, position sense, and vibratory sensation. Avoid fluoroquinolones, including moxifloxacin, in patients who have previously experienced peripheral neuropathy.
- Fluoroquinolones, including moxifloxacin, have been associated with an increased risk of central nervous system (CNS) reactions, including: convulsions and increased intracranial pressure (including pseudotumor cerebri) and toxic psychosis, Fluoroquinolones may also cause CNS reactions of nervousness, agitation, insomnia, anxiety, nightmares, paranoia, dizziness, confusion, tremors, hallucinations, depression, and, suicidal thoughts or acts. These adverse reactions may occur following the first dose. If these reactions occur in patients receiving moxifloxacin, discontinue moxifloxacin immediately and institute appropriate measures. As with all fluoroquinolones, use moxifloxacin when the benefits of treatment exceed the risks in patients with known or suspected CNS disorders (for example, severe cerebral arteriosclerosis, epilepsy) or in the presence of other risk factors that may predispose to seizures or lower the seizure threshold.
- Fluoroquinolones, including Moxifloxacin, have neuromuscular blocking activity and may exacerbate muscle weakness in patients with myasthenia gravis. Avoid moxifloxacin in patients with known history of myasthenia gravis.
- Moxifloxacin has been shown to prolong the QT interval of the electrocardiogram in some patients. Avoid moxifloxacin in patients with the following risk factors;
  - Known prolongation of the QT interval.
  - Ventricular arrhythmias including torsade de pointes because QT prolongation may lead to an increased risk for these conditions.
  - Ongoing proarrhythmic conditions, such as clinically significant bradycardia and acute myocardial ischemia.
  - Uncorrected hypokalemia or hypomagnesemia.
  - Class IA (for example, quinidine, procainamide) or Class III (for example, amiodarone, sotalol) antiarrhythmic agents.
  - Other drugs that prolong the QT interval such as cisapride, erythromycin, antipsychotics, and tricyclic antidepressants.
  - In patients with mild, moderate, or severe liver cirrhosis, metabolic disturbances associated with hepatic insufficiency may lead to QT prolongation. Monitor ECG in patients with liver cirrhosis treated with moxifloxacin.

- 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 fluoroquinolones, including Levofloxacin. 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 skin rash, jaundice, or any other sign of hypersensitivity and supportive measures instituted.

- Serious anaphylactic reactions, have been reported in patients receiving fluoroquinolone therapy, including Moxifloxacin. Some reactions were accompanied by cardiovascular collapse, loss of consciousness, tingling, pharyngeal or facial edema, dyspnea, urticaria, and itching. Discontinue moxifloxacin at the first appearance of a skin rash or any other sign of hypersensitivity.
- If you have Clostridium Difficile – Associated Diarrhea, the Voxiquin treatment should be stopped and appropriate fluid and electrolyte management, protein supplementation, antibiotic treatment of C. difficile, and surgical evaluation should be instituted as clinically indicated,
- In immature dogs, oral administration of Moxifloxacin caused lameness. Histopathological examination of the weight-bearing joints of these dogs revealed permanent lesions of the cartilage. Related quinolone-class drugs also produce erosions of cartilage of weight-bearing joints and other signs of arthropathy in immature animals of various species.
- As with all fluoroquinolones, disturbances in blood glucose, including both hypoglycemia and hyperglycemia have been reported with Moxifloxacin.
- In diabetic patients, careful monitoring of blood glucose is recommended. If a hypoglycemic reaction occurs, moxifloxacin should be discontinued and appropriate therapy should be initiated immediately.
- Quinolone antibiotics may make your skin become more sensitive to sunlight or UV light. You should avoid prolonged exposure to sunlight or strong sunlight and should not use a sunbed or any other UV lamp while taking Moxifloxacin. Drug therapy should be discontinued if photosensitivity/phototoxicity occurs.
- Prescribing moxifloxacin in the absence of a proven or strongly suspected bacterial infection or a prophylactic indication is unlikely to provide benefit to the patient and increases the risk of the development of drug-resistant bacteria.
- In children, Moxifloxacin may cause damage to the cartilage. Therefore, children should only take Moxifloxacin when his/her doctor or health care provider considers the benefit to outweigh the risks.
- Care should be taken; If you are taking any medicine that decreases your blood potassium levels.
- Care should be taken; If you suffer from epilepsy or a condition which makes you likely to have convulsions.
- Care should be taken; If you have or have ever had any mental health problems.
- Care should be taken; If you develop a skin reaction or blistering / peeling of the skin and/or mucosal reactions.

ADVERSE REACTIONS
The serious and important adverse reactions of Moxifloxacin are tendinopathy and tendon rupture, QT prolongation, hypersensitivity reactions, serious and fatal reactions, central nervous system effects, clostridium difficile-associated diarrhea, peripheral neuropathy, blood glucose disturbances, photosensitivity/ phototoxicity, development of drug resistant bacteria and disabling and potentially irreversible serious reactions included tendinitis, tendon rupture, arthralgia, myalgia, peripheral neuropathy, and central nervous system effects (hallucinations, anxiety, depression, insomnia, severe headaches, and confusion), hypokalemia, nausea, diarrhea, vomiting, constipation, abdominal pain, dyspepsia, pseudomembraneous colitis, pancreatitis, dry mouth, tinnitus, flatulence, abdominal distention, dysphagia, headache, dizziness, restlessness, insomnia, tremors, drowsiness, nightmares, lethargy, abnormal gait, visual & other sensory disturbances, hallucination, psychotic reactions, depressions, convulsions, intracranial hypertension, paraesthesia, rash, pruritus, skin reactions included vasculitis, erythema multiforme, Stevens-Johsons syndrome & toxic epidermal necrolysis, reversible arthralgia, myalgia, muscle weakness, back pain, facial pain, pain in extremity, musculoskeletal pain, crystalluria, rarely acute renal failure secondary to interstitial nephritis, elevated liver enzyme values jaundice, hepatitis, hematological disturbances including eosinophilia, thrombocytopenia, leucopenia, pancytopenia, haemolytic anemia, agranulocytosis, neutropenia, hypotension, edema, syncope, hot flushes, sweating, atrial fibrillation, palpitations, tachycardia, cardiac failure, cardiac arrest, bradycardia, pyrexia, chest discomfort, asthenia, malaise, anemia, vertigo, chills, acute renal failure, dysuria, interstitial nephritis, acute tubular necrosis, crystalluria, dyspnea, candidiasis, vaginal infection, fungal infection, gastroenteritis, asthma, wheezing, bronchospasm, anorexia, dehydration, hypoglycemia, hyperglycemia, decrease appetite, hearing impairment, deafness, hyperlipidemia, dysgeusia, somnolence, hypoesthesia, agitation, nervousness, restlessness, disorientation, vulvovaginal pruritus, rash, hyperhidrosis, erythema, urticaria, dermatitis allergic, night sweats, phlebitis, angioedema, deranged laboratory investigations (aspartate aminotransferase increased, gamma-glutamyl transferase increased, blood alkaline phosphatase increased, electrocardiogram QT prolonged, blood lactate dehydrogenase increased, blood amylase increased, lipase increased, blood creatinine increased, blood urea increased, hematocrit decreased, prothrombin time prolonged, eosinophil count increased, activated partial thromboplastin time prolonged, blood triglycerides increased ,blood uric acid increased) have also been reported.

USE IN SPECIFIC POPULATIONS
Pregnancy
Because no adequate or well-controlled studies have been conducted in pregnant women, Moxifloxacin should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers
Moxifloxacin is excreted in the breast milk of rats. Moxifloxacin may also be excreted in human milk. Because of the potential for serious adverse reactions in infants who are nursing from mothers taking moxifloxacin, 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.

Pediatric Use
Safety and effectiveness in pediatric patients and adolescents less than 18 years of age have not been established.

Geriatric Use
Geriatric patients are at increased risk for developing severe tendon disorders including tendon rupture when being treated with a fluoroquinolone such as Moxifloxacin. This risk is further increased in patients receiving concomitant corticosteroid therapy. Tendinitis or tendon rupture can involve the Achilles, hand, shoulder, or other tendon sites and can occur during or after completion of therapy; cases occurring up to several months after fluoroquinolone treatment have been reported. Caution should be used when prescribing moxifloxacin to elderly patients especially those on corticosteroids. Patients should be informed of this potential side effect and advised to discontinue moxifloxacin and contact their healthcare provider if any symptoms of tendinitis or tendon rupture occur.

Renal Impairment
The pharmacokinetic parameters of moxifloxacin are not significantly altered in mild, moderate, severe, or end-stage renal disease. No dosage adjustment is necessary in patients with renal impairment, including those patients requiring hemodialysis (HD) or continuous ambulatory peritoneal dialysis (CAPD).

Hepatic Impairment
No dosage adjustment is recommended for mild, moderate, or severe hepatic insufficiency (Child-Pugh Classes A, B, or C). However, due to metabolic disturbances associated with hepatic insufficiency, which may lead to QT prolongation, moxifloxacin should be used with caution in these patients.

OVERDOSAGE
In the event of acute overdose, the stomach should be emptied and adequate hydration maintained. ECG monitoring is recommended due to the possibility of QT interval prolongation. The patient should be carefully observed and given supportive treatment. The administration of activated charcoal as soon as possible after oral overdose may prevent excessive increase of systemic moxifloxacin exposure.
About 3% and 9% of the dose of moxifloxacin, as well as about 2% and 4.5% of its glucuronide metabolite are removed by continuous ambulatory peritoneal dialysis and hemodialysis, respectively.

DOSAGE AND INSTRUCTIONS
To be sold and used on the prescription of a registered medical practitioner only. Keep out of reach of children. Do not store above 30°C. Keep in dry place. Protect from light.

PRESENTATION
Oxaquin 400mg Tablets:
Alu. PVC Blister pack of 1 x 5's.

اوکساکوئن®

(موکسی فلوکساسین)

خوراک و ہدایات:

صرف مستند ڈاکٹر کے نسخہ کے مطابق ہی دوا فروخت اور استعمال کی جائے۔
بچوں کی پہنچ سے دور رکھیں۔ 30°C سے زیادہ درجہ حرارت پر نہ رکھیں۔
خشک جگہ پر رکھیں۔ روشنی سے بچائیں۔

Manufactured by
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Raiwind Road, Lahore, Pakistan.
Mfg. Lic. No. 000799

Manufactured for
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Item Code No. 14002990