# GENTHRO®
(Azithromycin)
U.S.P.

250mg
500mg
Tables

100mg/5mL
200mg/5mL
For Oral Suspension

# جینتھرو
(ایزیتھرومائسن) یو۔ایس۔پی۔

۲۵۰ ملی گرام
۵۰۰ ملی گرام
ٹیبلٹس

۱۰۰ ملی گرام/۵ ملی لیٹر
۲۰۰ ملی گرام/۵ ملی لیٹر
اورل سسپنشن

## QUALITATIVE AND QUANTITATIVE COMPOSITION

**GENTHRO® Tablets U.S.P. 250mg:**
Each film-coated tablet contains:
Azithromycin dihydrate eq. to Azithromycin U.S.P. …..250mg
**GENTHRO® Tablets U.S.P. 500mg:**
Each film-coated tablet contains:
Azithromycin dihydrate eq. to Azithromycin U.S.P. …..500mg
**GENTHRO® For Oral Suspension U.S.P. 200mg/5mL:**
After reconstitution:
Each 5mL contains:
Azithromycin dihydrate eq. to Azithromycin U.S.P. …..200mg
**GENTHRO® For Oral Suspension U.S.P. 100mg/5mL:**
After reconstitution:
Each 5mL contains:
Azithromycin dihydrate eq. to Azithromycin U.S.P. …..100mg

## DESCRIPTION

GENTHRO® (Azithromycin tablets and Azithromycin for oral suspension) contain the active ingredient azithromycin, a macrolide antibacterial drug, for oral administration. Azithromycin is derived from erythromycin; however, it differs chemically from erythromycin in that a methyl-substituted nitrogen atom is incorporated into the lactone ring.

## CLINICAL PHARMACOLOGY

**Mechanism of Action:** Azithromycin is a macrolide antibacterial drug. Azithromycin acts by binding to the 23S rRNA of the 50S ribosomal subunit of susceptible microorganisms inhibiting bacterial protein synthesis and impeding the assembly of the 50S ribosomal subunit. **Pharmacokinetics: Absorption:** Rapidly absorbed (40%) after oral administration. **Distribution:** Widely distributed to body tissues and fluids. Intracellular and tissue levels exceed those in serum; low CSF levels. Protein-Binding:7–51%. **Metabolism and Excretion:** Mostly excreted unchanged in bile; 4.5% excreted unchanged in urine. Half-life:11–14 hr after single dose; 2–4 days after several doses; 59 hr after extended release suspension.

| TIME/ACTION PROFILE (serum) | | | |
|---|---|---|---|
| **ROUTE** | **ONSET** | **PEAK** | **DURATION** |
| PO | rapid | 2.5–3.2 hr | 24 hr |

**Microbiology:** Azithromycin has been shown to be active against most isolates of the following micro-organisms, both in vitro and in clinical infections.
Aerobic and facultative gram-positive organisms: Streptococcus pneumoniae, penicillin-resistant, penicillin-intermediate, Streptococcus pyogenes, Staphylococcus aureus, Streptococcus agalactiae, Streptococci (Groups C, F, G) Viridans group streptococci, Corynebacterium diptheriae. Azithromycin demonstrates cross-resistance with erythromycin-resistant Gram-positive strains, including Streptococcus faecalis (entrococcus) and most strains of methicillin-resistant staphylococci. **Aerobic and facultative gram-negative organisms:** Haemophilus ducreyi, Haemophilus influenzae, Moraxella ca-tarrhalis, Neisseria gonorrhoeae, Bordetella pertussis, Legionella pneumophila, Haemophilus parainfluenzae, Acinetobacter species, Yersinia species, Shigella species, Pasteurella species, Vibrio cholera and parahaemolyti-cus, Plesiomonas shigelloides. **Anaerobic micro-organisms:** Peptostreptococcus species, Prevotella bivia, Bacteroides fragilis and Bacteroides species, Clostridium perfringens, Peptococcus species, Fusobacterium necrophorum and Propioni bacterium acnes. **Others:** Chlamydia pneumoniae, Chlamydia trachomatis, Mycoplasma pneumoniae ,Urea plasma urealyticum, Escherichia coli, Salmonella, Shigella spp.,Mycobacterium avium, Mycobacterium intracellulare, Toxoplasma gondii, Plasmodium falciparum.

## INDICATIONS AND USAGE

GENTHRO® (Azithromycin) is a macrolide antibacterial drug indicated for the treatment of patients

with mild to moderate infections caused by susceptible strains of the designated microorganisms in the specific conditions listed below. **Adult Patients:** •Acute bacterial exacerbations of chronic bronchitis due to Haemophilus influenzae, Moraxella catarrhalis, or Streptococcus pneumoniae. • Acute bacterial sinusitis due to Haemophilus influenzae, Moraxella catarrhalis. or Streptococcus pneumoniae. • Community-acquired pneumonia due to Chlamydophila pneumoniae, Haemophilus influenzae, Mycoplasma pneumoniae, or Streptococcus pneumoniae in patients appropriate for oral therapy. • Pharyngitis/tonsillitis caused by Streptococcus pyogenes as an alternative to first-line therapy in individuals who cannot use first-line therapy. • Uncomplicated skin and skin structure infections due to Staphylococcus aureus, Streptococcus pyogenes, or Streptococcus agalactiae. • Urethritis and cervicitis due to Chlamydia trachomatis or Neisseria gonorrhoeae. • Genital ulcer disease in men due to Haemophilus ducreyi (chancroid). Due to the small number of women included in clinical trials, the efficacy of azithromycin in the treatment of chancroid in women has not been established. **Pediatric Patients:** • Acute otitis media (>6 months of age) caused by Haemophilus influenzae, Moraxella catarrhalis, or Streptococcus
pneumoniae • Community-acquired pneumonia (>6 months of age) due to Chlamydophila pneumoniae, Haemophilus influenzae, Mycoplasma pneumonia, or Streptococcus pneumoniae in patients appropriate for oral therapy. • Pharyngitis/tonsillitis ( > 2 years of age ) caused by Streptococcus pyogenes as an alternative to first-line therapy in individuals who cannot use first-line therapy. **Limitations of Use:** Azithromycin should not be used in patients with pneumonia who are judged to be inappropriate for oral therapy because of moderate to severe illness or risk factors such as any of the following: • patients with cystic fibrosis, • patients with nosocomial infections, • patients with known or suspected bacteremia, • patients requiring hospitalization, • elderly or debilitated patients, or • patients with significant underlying health problems that may compromise their ability to respond to their illness (including immunodeficiency or functional asplenia).

## CONTRAINDICATIONS

**Hypersensitivity:** GENTHRO® is contraindicated in patients with known hypersensitivity to azithromycin, erythromycin, any macrolide or ketolide drug. Hepatic Dysfunction: GENTHRO® is contraindicated in patients with a history of cholestatic jaundice/hepatic dysfunction associated with prior use of azithromycin.

## INTERACTIONS

**Nelfinavir, Warfarin, Digoxin(P-gp substrates), Zidovudine:** Co-administration of azithromycin with the following drugs is not recommended as potentiation of effect, increased serum concentration has been observed.

**Astemizole and alfentanil:** Caution should be exercised with concomitant use of these agents and azithromycin in view of the described potentiation of its effect during concomitant use of the macrolide antibiotic erythromycin.

**Potential Drug-Drug Interactions with Macrolides:** Drug interactions have been observed with other macrolide products.

**Cisapride:** Concomitant administration of cisapride may cause the increase of QT interval prolongation, ventricular arrhythmias and torsades de pointes. **Antacids:** Azithromycin should be taken at least 1 hour before or 2 hours after the antacid.

**Ergot:** The concurrent use of azithromycin with ergot derivatives is not recommended.

**Cyclosporine:** Caution should be exercised before considering concurrent administration of these drugs.

**Coumarin-Type Oral Anticoagulants:** Consideration should be given to the frequency of monitoring prothrombin time when azithromycin is used in patients receiving coumarin-type oral anticoagulants.

## USE IN SPECIFIC POPULATION

**Pregnancy:** Teratogenic Effects(Category B): Azithromycin should be used during pregnancy only if clearly needed. **Nursing Mothers:** Caution should be exercised as azithromycin is excreted in human breast milk in small amounts. **Pediatric use:** Safety and effectiveness in the treatment of pediatric patients with acute otitis media, acute bacterial sinusitis and community-acquired pneumonia under 6 months of age have not been established. **Geriatric Use:** Use with caution as can develop torsades de pointes arrhythmias than younger patients. **Renal impairment:** No dose adjustment is necessary in patients with mild to moderate renal impairment (GFR 10 - 80 ml/min). Caution should be exercised when azithromycin is administered to patients with severe renal im-pairment (GFR < 10 ml/min) both in adults and children. **Hepatic impairment:** The drug should not be given to patients suffering from severe liver disease.

## PRECAUTIONS

**Hypersensitivity:** Angioedema, anaphylaxis, and dermatologic reactions including Acute Generalized Exanthematous Pustulosis (AGEP), Stevens-Johnson syndrome, and toxic epidermal necrolysis may occur.

**Hepatotoxicity:** Abnormal liver function, hepatitis, cholestatic jaundice, hepatic necrosis, and hepatic failure have been reported, some of which have resulted in death. Discontinue azithromycin immediately if signs of hepatitis occur.

**Infantile Hypertrophic Pyloric Stenosis (IHPS):** Following the use of azithromycin in neonates (treatment up to 42 days of life), IHPS has been reported. QT Prolongation: Prolonged cardiac repolarization and QT interval, imparting a risk of developing cardiac arrhythmia and torsades de pointes, have been seen with treatment with macrolides, including azithromycin. Clostridium difficile-Associated Diarrhea (CDAD): Clostridium difficile-associated diarrhea has been reported. **Exacerbation of Myasthenia Gravis:** Exacerbation of symptoms of myasthenia gravis may occur. **Use in Sexually Transmitted Infections:** GENTHRO®, at the recommended dose, should not be relied upon to treat syphilis. Antibacterial agents used to treat non-gonococcal urethritis may mask or delay the symptoms of incubating syphilis.

**Development of Drug-Resistant Bacteria:** Prescribing GENTHRO® in the absence of a proven or strongly suspected bacterial infection is unlikely to provide benefit to the patient and increases the risk of the development of drug-resistant bacteria.

## ADVERSE REACTIONS

Anorexia, arthralgia, disturbances in taste, disturbances in vision, dizziness,dyspepsia, flatulence, headache, malaise, paraesthesia, reversible hearing loss (sometimes with tinnitus) after long-term therapy. Anxiety, chest pain, constipation, gastritis, hypoaesthesia, leucopenia, oedema, photosensitivity, sleep disturbances, agitation, Acute renal failure, convulsions, haemolytic anemia, interstitial nephritis, smell disturbances,syncope, thrombocytopenia, tongue discoloration

## DOSAGE AND ADMINISTRATION

GENTHRO® tablets and oral suspension can be taken with or without food. Patients should also be cautioned not to take aluminum- and magnesium-containing antacids and azithromycin simultaneously. The patient should be directed to discontinue azithromycin immediately and contact a physician if any signs of an allergic reaction occur.

**Adult patients:**

| Infection | Recommended Dose/Duration of Therapy |
|---|---|
| Pharyngitis/tonsillitis (second-line therapy)<br>Skin/skin structure (uncomplicated) | 500 mg as a single dose on Day 1, followed by 250 mg once daily for 4 days. (5-days regimen) |
| Community -acquired pneumonia<br>(low to moderate severity)<br>Respiratory -tract infections, otitis media, skin and Soft tissue infections<br>Acute bacterial exacerbations of chronic obstructive pulmonary disease | 500 mg once daily for 3 days, alternatively initially 500 mg once daily for 1 day, then 250 mg once daily for 4 days. |
| Community -acquired pneumonia<br>(high severity) | INITIALLY BY INTRAVENOUS INFUSION<br>Initially 500 mg once daily for at least 2 days,<br>then (by mouth) 500 mg once daily for a total duration of 7–10 days |
| Acute bacterial sinusitis | 500mg once daily for 3 days |
| Genital ulcer disease (chancroid)<br>Non-gonococcal urethritis & cervicitis due to Chlamydia trachomatis | One single 1 gram dose |
| Gonococcal urethritis and cervicitis | One single 2 gram dose |
| Lyme disease | 500 mg daily for 7 –10 days |
| Mild to moderate typhoid due to multiple-antibacterial resistant organisms | 500 mg daily for 7 days |
| Antibacterial prophylaxis for insertion of intra uterine device penicillin | 1 g for 1 dose |
| Mycobacterial Infections | |
| Prevention of Disseminated MAC (Mycobacterium avium complex)Infections: | 1200 mg taken once weekly. This dose of GENTHRO® may be combined with the approved dosage regimen of rifabutin. |
| Treatment of Disseminated MAC (Mycobacterium avium complex)Infections: | GENTHRO® should be taken at a daily dose of 600 mg, in combination with ethambutol at the recommended daily dose of 15 mg/kg.<br>Other antimycobacterial drugs that have shown in vitro activity against MAC may be added to the regimen of azithromycin plus ethambutol at the discretion of the physician or health care provider. |

## Pediatric Patients:\

| Infection | Recommended Dose/Duration of Therapy |
|---|---|
| **Acute bacterial sinusitis** (>6 months of age) | 10 mg/kg once daily for 3 days. |
| **Community -acquired pneumonia** (>6 months of age) | 10 mg/kg as a single dose on Day 1 followed by 5mg/kg once daily on Days 2 through 5. |
| **Pharyngitis/tonsillitis** ( ≥2 years of age) | 12 mg/kg once daily for 5 days. |
| **Prevention of secondary case of invasive group A streptococcal infection in patients who are allergic to penicillin** | **Child 6 months –11 years:** 12 mg/kg once daily (max. per dose 500 mg) for 5 days<br>**Child 12 –17 years:** 500 mg once daily for 5 days |
| **Respiratory -tract infections, otitis media, skin & soft tissue infections** | **For Acute otitis media** (>6 months of age) **:** Total dose is for 3 days, either take 30mg as a single dose or take in divided doses as 10 mg/kg once daily for 3 days or 10 mg/kg as a single dose on Day 1 followed by 5 mg/kg/day on Days 2 through 5.<br>**Child 6 months –17 years:** 10 mg/kg once daily (max. per dose 500 mg) for 3 days<br>**Child 6 months –17 years (body -weight 15 –25 kg): 200 mg** once daily for 3 days<br>**Child 6 months –17 years (body -weight 26 –35 kg): 300 mg** once daily for 3 days<br>**Child 6 months –17 years (body -weight 36 –45 kg): 400 mg** once daily for 3 days 500 mg once daily for 3 days<br>**Child 6 months –17 years (body -weight 46 kg and above):** 500mg once daily for 3 days |

**Direction for reconstitution: GENTHRO® for Oral Suspension U.S.P. 200mg/5mL & 100mg/5mL:** Tap the bottle before reconstitution. To make suspension add some water invert bottle and shake well until all granules are dispersed. Then slowly add more water up to the mark on the bottle. Use only cool boiled water. Reconstituted suspension should be kept in cool place, avoid freezing & heat, use within 10 days. **SHAKE WELL BEFORE USE.** Keep the bottle tightly closed.
**Overdosage:** Adverse reactions experienced at higher than recommended doses were similar to those seen at normal doses particularly nausea, diarrhea, and vomiting. In the event of overdosage, general symptomatic and supportive measures are indicated as required.

## DOSAGE:
As directed by the physician.
## INSTRUCTIONS:
Store at 20°C - 25°C, excursions permitted to 15°C - 30°C. Protect from sunlight and moisture. Keep all medicines out of the reach of Children.To be sold on the prescription of a registered medical practitioner only. **After Reconstitution:** After mixing, store suspension at 5°C - 30°C and use within 10 days. Discard after full dosing is completed.

## PRESENTATION
GENTHRO® (Azithromycin)Tablets U.S.P. 250mg are available in Alu-Alu blister pack of 6's.
GENTHRO® (Azithromycin) Tablets U.S.P. 500mg are available in Alu-Alu blister pack of 6's.
GENTHRO® (Azithromycin)For Oral Suspension U.S.P. 200mg/5mL is available in HDPE Bottle with Cylindrical Spoon in a pack of 15mL.
GENTHRO® (Azithromycin) For Oral Suspension U.S.P. 100mg/5mL is available in HDPE Bottle with Cylindrical Spoon in a pack of 30mL.

**علامات/طریقہ استعمال:** جینتھر وگلے، جلد، پیشاب کی نالی کے انفیکشنز اور کمیونٹی اکوائرڈ نمونیہ کے علاج کے لئے تجویز کردہ ہے۔
بچوں میں جینتھر وکا استعمال کان، گلے اور کمیونٹی اکوائرڈ نمونیہ میں تجویز کردہ ہے۔مختلف امراض کے لحاظ سے خوراک ڈاکٹر کی ہدایت کے مطابق استعمال کریں۔
**مضر اثرات:** بھوک میں کمی، جوڑوں میں درد، سر میں درد، بے چینی، سینے میں درد، قبض، نیند میں کمی، جگر کی خرابی، اختلاج قلب۔
**احتیاطی تدابیر:** حاملہ خواتین اور دودھ پلانے والی ماؤں میں جینتھر وکا استعمال صرف مستند ڈاکٹر کی ہدایت پر ہی کریں۔
بچوں، بوڑھوں اور گردے کے مریضوں میں دوا کا استعمال احتیاط سے کریں۔جگر کے مریضوں میں دوا کا استعمال ممنوع ہے۔
**سسپنشن تیار کرنے کے لئے:** سسپنشن تیار کرنے سے پہلے بوتل کو اچھی طرح ہلائیں۔
ابلا ہوا ٹھنڈا پانی بوتل میں شامل کریں اور بوتل کو اچھی طرح ہلائیں تا کہ تمام سسپنشن اچھی طرح حل ہو جائے پھر مزید پانی بوتل پر دیئے ہوئے نشان تک شامل کر دیں اور بوتل کو دوبارہ آہستگی سے ہلائیں۔تیار شدہ سسپنشن ٹھنڈی جگہ پر رکھیں گرمی سے اور منجمد ہونے سے بچائیں اور ۱۰ دن کے اندر استعمال کریں۔غیر استعمال شدہ دوا کو ضائع کر دیں۔
استعمال سے پہلے بوتل کو اچھی طرح ہلائیں۔
**خوراک:** ڈاکٹر کی ہدایت کے مطابق استعمال کریں۔
**ہدایات:** ۲۰ سے ۲۵ ڈگری سینٹی گریڈ پر رکھیں، محفوظ رکھنے کی حد ۱۵ سے ۳۰ ڈگری سینٹی گریڈ ہے۔
سورج کی روشنی اور نمی سے محفوظ رکھیں۔تمام دوائیں بچوں کی پہنچ سے دور رکھیں۔
سسپنشن کی سیل خراب یا کھلی ہونے کی صورت میں استعمال نہ کریں۔

For detailed information:
**Genix Pharma (Pvt.) Ltd.**
44,45-B, Korangi Creek Road, Karachi-75190, Pakistan.
**UAN:** +92-21-111-10-10-11, **Email:** info@genixpharma.com
www.genixpharma.com
ISO 9001:2015 ISO 14001:2015 ISO 45001:2018