

# MAGNACILLIN

## Capsules & Suspension

### Composition

#### Magnacillin Forte Capsules

Each capsule contains:

Ampicillin (as trihydrate)	500 mg
Flucloxacillin (as sodium)	250 mg

#### Magnacillin Forte Suspension

Each 5 ml contains:

Ampicillin (as trihydrate)	250 mg
Flucloxacillin (as sodium)	125 mg

### Action

Ampicillin is broad-spectrum semisynthetic penicillin. It is bactericidal against sensitive organisms during the stage of active multiplication and acts by inhibiting the biosynthesis of bacterial cell wall mucopeptide.

Ampicillin is stable in the presence of gastric acid and is rapidly absorbed from the gastrointestinal tract following oral administration. The presence of food, however, interferes with absorption. Peak blood levels reached within 1-2 hours and they decrease slowly over a period of 6 hours. Ampicillin diffuses readily into most body tissues and fluids but not into the brain and spinal fluid, except when the meninges are inflamed. Ampicillin is excreted in the urine largely unchanged.

Flucloxacillin has an antibacterial spectrum similar to that of methicillin and is active against most Gram-positive organisms and *Neisseria* spp. Based on minimum inhibitory concentrations, its activity against both penicillin resistant and penicillin sensitive staphylococci is 4-8 times that of methicillin sodium.

Flucloxacillin is better absorbed from the gastrointestinal tract than cloxacillin, but absorption reduced by food in the stomach or small intestines.

Both Flucloxacillin and Ampicillin produce a synergistic antibacterial effect. Flucloxacillin increases the combined activity of antibiotics by inhibiting enzymatic degradation of Ampicillin, so Flucloxacillin will resist penicillinase by itself. This advantage is needed in the treatment of infections caused by Gram-negative bacilli such as *E. coli* and *Proteus mirabilis* where these organisms are beta-lactamase producers. Flucloxacillin is so well absorbed orally that blood levels following an oral dose are equivalent to those achieved by intramuscular injections.

### Indications

Magnacillin indicated for the treatment of infections due to staphylococci resistant to benzylpenicillin.

Used for mixed streptococcal and staphylococcal infections. It should be given one hour before meals since the presence of food reduces its absorption.

Magnacillin indicated in the treatment of the following conditions:

- *Lower Respiratory Infections*-caused by  $\beta$ -lactamase producing strains of *Haemophilus influenzae* and *Branhamella catarrhalis*.
- *Skin and Skin Structure Infections*- caused by  $\beta$ -lactamase producing strains of *Staphylococcus aureus*, *Escherichia coli* and *Klebsiella* spp.

Bacteriological studies, to determine the causative organisms and their susceptibility to Magnacillin should be performed together with any indicated surgical procedures. Therapy may be instituted prior to obtaining the results from bacteriological and susceptibility studies to determine the causative organisms and their susceptibility to Magnacillin when there is reason to believe the infection may involve  $\beta$ -lactamase producing organisms. Once the results are known, therapy should be adjusted, if appropriate.

## **Contraindications**

- Known hypersensitivity to a penicillin-type drug.
- This drug should not be administered to babies born to mothers with a history of hypersensitivity to a penicillin type drug.

## **Warnings**

Serious and occasionally even fatal hypersensitivity actions due to penicillin therapy have been reported. Although anaphylaxis is more frequent following parenteral therapy, it has occurred in patients receiving oral penicillins. Such reactions are more likely to occur in individuals with a history of hypersensitivity to penicillins and/or a history of sensitivity to multiple allergens. There have also been reports of individuals with history of penicillin hypersensitivity experiencing severe reactions when treated with cephalosporins.

Therefore, before initiating therapy with this drug, careful inquiry should be made concerning previous hypersensitivity reactions to penicillins, cephalosporins, or other allergens, because of the risk of anaphylactoid reactions.

If an allergic reaction occurs, the drug should be discontinued and appropriate therapy instituted. Serious anaphylactoid reactions require immediate emergency treatment with adrenaline. Oxygen, intravenous steroids and airway management including intubation, should also be administered as indicated.

This drug should not be used in patients suffering from mononucleosis, since these patients run a high risk of developing a skin rash.

## **Pregnancy**

### *Category C*

Animal reproduction studies have shown an adverse effect on the fetus and there are no adequate and well-controlled studies in humans, but potential benefits may warrant use of the drug in pregnant women despite potential risks.

## **Nursing Mothers**

Since penicillins excreted in breast milk, administration of this drug to nursing mothers may lead to sensitization, diarrhoea, and candidiasis and skin rash in the infant. Therefore, having taken into account the importance of the drug to the mother, either discontinue nursing or discontinue the drug.

## **Use in Infants**

Penicillins excreted largely unchanged by the kidney. Because renal function is incompletely developed in infants, the rate of elimination of the drug tends to be slow. Penicillin-type drugs should therefore be administered with caution, particularly in neonates, and organ system function should be evaluated frequently.

## **Adverse Reactions**

As with other penicillins, it may be expected that untoward reactions will be essentially limited to sensitivity phenomena. These reactions are more likely to occur in individuals who have previously demonstrated hypersensitivity to penicillins and in those with a history of allergy, asthma, hay fever, or urticaria,

In common with other  $\beta$ -lactam antibiotics, angioedema and anaphylaxis may occur.

The following adverse reactions have been reported as being associated with the use of penicillins.

## **Hypersensitivity**

Anaphylaxis is the most serious potential adverse reaction to a penicillin drug. It is usually associated with the administration of parenteral rather than oral dosage forms. Serious anaphylactoid reactions require immediate emergency treatment with adrenaline. Oxygen, intravenous steroids and airway management including intubation, should also be administered as indicated.

Erythematous maculopapular rashes, urticaria, and occasional cases of exfoliative dermatitis, erythema multiforme and Stevens-Johnson syndrome have been reported. Laryngeal edema and serum sickness-like reactions including chills, fever, edema and arthralgia have also been reported. Such reactions may be controlled with antihistamines and, if necessary, systemic corticosteroids.

Whenever such reactions occur, the drug should be discontinued unless in the opinion of the physician, the condition being treated is life threatening and amenable only to penicillin therapy.

#### **Gastrointestinal**

Glossitis, stomatitis, black "hairy" tongue, nausea, vomiting, enterocolitis, pseudomembranous colitis and diarrhea have been observed.

#### **Hepatic**

A moderate rise in serum glutamic oxaloacetic transaminase (SGOT) and/or serum glutamic pyruvic transaminase (SGPT) has been noted, particularly in infants, but the significance of this finding is unknown. Rare cases of transient hepatitis and cholestatic jaundice have been reported.

#### **Hematological**

Hematological reactions including hemolytic anemia, thrombocytopenia, thrombocytopenic purpura, eosinophilia, leukopenia, and agranulocytosis have been observed. These are believed to be hypersensitivity phenomena and are usually reversible upon discontinuation of therapy.

#### **Central Nervous System**

Rare cases of reversible hyperactivity, agitation, anxiety, insomnia, confusion, behavioural changes, and/or dizziness have been reported.

#### **Precautions**

In the treatment of group A  $\beta$ -hemolytic streptococcal infections, therapy with this drug should be continued for at least 10 days to help prevent the occurrence of acute rheumatic fever or glomerulonephritis. Following completion of treatment, cultures should be taken to determine whether streptococci have been eradicated. As with any potent drug, periodic assessment of renal, hepatic and hematopoietic functions should be made during prolonged therapy.

The possibility of superinfection with mycotic or bacterial pathogens should be kept in mind during therapy. If superinfection occurs, appropriate therapy should be instituted.

#### **Drug Interactions**

##### *Penicillins/Chloramphenicol/Erythromycin/Tetracyclines/Sulfonamides*

Since bacteriostatic drugs may interfere with the bactericidal effect of penicillins in the treatment of meningitis or other conditions where a rapid bactericidal effect is necessary, it is best to avoid concurrent therapy.

##### *Ampicillin/ Oral Contraceptives*

Ampicillin has been associated with a reduction in urinary excretion of endogenous estrogens. Isolated cases of menstrual irregularities and unplanned pregnancies in women taking oral contraceptives have been reported. Although clinical evidence for this interaction is scanty, it would appear to be prudent for women using oral contraceptives to adopt supplemental forms of contraception during Ampicillin administration.

##### *Ampicillin/ Allopurinol*

Concurrent administration of allopurinol and Ampicillin substantially increases the incidence of rash, as compared to the incidence with Ampicillin alone. It is not known whether this potentiation of Ampicillin-associated rash is due to allopurinol or the hyperuricemia present in these patients.

##### *Penicillins/ Probenecid*

Probenecid may decrease renal tubular secretion of penicillin-type drugs, resulting in increased blood levels.

#### **Diagnostic Interference**

Treatment with penicillins may result in false positive reactions when testing for the presence of glucose in urine using Clinitest, Benedict's Solution or Fehling's Solution. Tests based on enzymatic glucose oxidase reactions such as Clinistix or Testape are not affected.

A transient decrease in plasma concentration of total conjugated estriol, estriol-glucuronide, conjugated estrone, and estradiol has been noted following administration to pregnant women.

#### **Dosage and Administration**

##### **Adults**

One capsule 4 times daily every six hours, to be taken one or two hours before meals. In more serious infections, the administration of the forte capsules is recommended.

##### **Children from 2 to 10 years**

One teaspoonful 4 times daily every six hours.

The forte suspension may be given for more infections that are serious.

##### **Infants and children up to 2 years**

4 ml of the reconstituted Granules per day six hourly.

#### **Presentation**

##### **Magnacillin Forte Capsules**

Box of 18 capsules.

##### **Magnacillin Forte Suspension**

Powder for the preparation of 60 ml suspension.