Bosch

For Medical Professional only

Bactamox Plus

IM/IV Injection

0.75g, 1.5g, 3g

(Amoxicillin B.P. + Sulbactam U.S.P.)

(Product Specs.: M.S.)

بیکٹاموکس پلس

To reduce the development of drug-resistant bacteria and maintain the effectiveness of BACTAMOX PLUS and other antibacterial drugs, BACTAMOX PLUS should be used only to treat or prevent infections that are proven or strongly suspected to be caused by bacteria.

DESCRIPTION:

Amoxicillin:

Amoxicillin sodium is derived from the penicillin nucleus, 6-aminopenicillanic acid. Chemically, it is monosodium (2S, 5R, 6R)-6-[(R)-2-amino-2-phenylacetamido]-3,3-dimethyl-7-oxo-4-thia-1-azabicyclo[3.2.0]heptane-2-carboxylate

It has a molecular weight of 387.4g/mol Its chemical formula is $C_{16}H_{18}N_3NaO_5S$

Sulbactam:

Sulbactam sodium is a derivative of the basic penicillin nucleus. Chemically, sulbactam sodium is sodium penicillinate sulfone; sodium (2S, 5R)-3,3-dimethyl-7-oxo-4-thia- 1-azabicyclo [3.2.0] heptane-2-carboxylate 4,4-dioxide.

Its chemical formula is $C_8H_{11}NNaO_5S$ with a molecular weight of 255.23

BACTAMOX PLUS:

It is an injectable antibacterial combination consisting of the semi synthetic antibiotic Amoxicillin sodium and the beta-lactamase inhibitor sulbactam sodium for intravenous and Intramuscular administration.

- BACTAMOX PLUS, amoxicillin sodium/sulbactam sodium parenteral combination, is available as a white to off-white dry powder for reconstitution.
- BACTAMOX PLUS dry powder is freely soluble in aqueous diluents to form transparent solutions containing amoxicillin sodium and sulbactam sodium.
- The pH of the solutions is between 8.0 and 10.0.
- 0.75 g of BACTAMOX PLUS (500 mg amoxicillin sodium plus 250 mg sulbactam sodium) for IV and IM use.
- 1.5 g of BACTAMOX PLUS (1 g amoxicillin sodium plus 0.5 g sulbactam sodium) for IV and IM use.
- 3 g of BACTAMOX PLUS (2 g amoxicillin sodium plus 1 g sulbactam sodium) for IV and IM use.

CLINICAL PHARMACOLOGY:

General: Immediately after completion of a 15-minute intravenous infusion of BACTAMOX PLUS, peak serum concentrations of amoxicillin and sulbactam are attained. Amoxicillin serum levels are similar to those produced by the administration of equivalent amounts of amoxicillin alone.

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Peak amoxicillin serum levels ranging from 109 to 150 µg/mL are attained after administration of 2000 mg of amoxicillin plus 1000 mg sulbactam and 40 to 71 µg/mL after administration of 1000 mg amoxicillin plus 500 mg sulbactam. The corresponding mean peak serum levels for sulbactam range from 48 to 88 µg/mL and 21 to 40 mcg/mL, respectively.

After an intramuscular injection of 1000 mg amoxicillin plus 500 mg sulbactam, peak amoxicillin serum levels ranging from 8 to 37 µg/mL and peak sulbactam serum levels ranging from 6 to 24 µg/mL are attained.

The mean serum half-life of both drugs is approximately 1 hour in healthy volunteers. Approximately 75 to 85% of both amoxicillin and sulbactam are excreted unchanged in the urine during the first 8 hours after administration of BACTAMOX PLUS to individuals with normal renal function.

In patients with impaired renal function the elimination kinetics of amoxicillin and sulbactam are similarly affected, hence the ratio of one to the other will remain constant whatever the renal function. The dose of BACTAMOX PLUS in such patients should be administered less frequently in accordance with the usual practice for amoxicillin.

Amoxicillin has been found to be approximately 20% reversibly bound to human serum protein and sulbactam approximately 38% reversibly bound.

MICROBIOLOGY:

Amoxicillin is similar to benzyl penicillin in its bactericidal action against susceptible organisms during the stage of active multiplication. It acts through the inhibition of cell wall mucopeptide biosynthesis. Amoxicillin has a broad spectrum of bactericidal activity against many gram-positive and gram-negative aerobic and anaerobic bacteria. (Amoxicillin is, however, degraded by beta-lactamases and therefore the spectrum of

activity does not normally include organisms which produce these enzymes.)

A wide range of beta-lactamases found in microorganisms resistant to penicillin and cephalosporins have been shown in biochemical studies with cell free bacterial systems to be irreversibly inhibited by sulbactam. Although sulbactam alone possesses little useful antibacterial activity except against the Neisseriaceae, whole organism studies have shown that sulbactam restores amoxicillin activity against beta-lactamase producing strains.

In particular, sulbactam has good inhibitory activity against the clinically important plasmid mediated beta-lactamases most frequently responsible for transferred drug resistance. Sulbactam has no effect on the activity of amoxicillin against amoxicillin susceptible strains.

The presence of sulbactam in the BACTAMOX PLUS formulation effectively extends the antibiotic spectrum of amoxicillin to include many bacteria normally resistant to it and to other beta-lactam antibiotics. Thus, BACTAMOX PLUS possesses the properties of a broad-spectrum antibiotic and a beta-lactamase inhibitor.

Gram-Positive Bacteria:
- Staphylococcus aureus
  (beta-lactamase and non-beta-lactamase producing)
- Staphylococcus epidermidis
  (beta-lactamase and non-beta-lactamase producing)
- Staphylococcus saprophyticus
  (beta-lactamase and non-beta-lactamase producing)
- Streptococcus faecalis (Enterococcus)
- Streptococcus pneumoniae (formerly D. pneumoniae)
- Streptococcus pyogenes
- Streptococcus viridans

Gram-Negative Bacteria:
- Salmonellae Typhie
- Hemophilus influenzae
  (beta-lactamase and non-beta-lactamase producing)
- Moraxella (Branhamella) catarrhalis
  (beta-lactamase and non-beta-lactamase producing)
- Escherichia coli
- Klebsiella species
  (all known strains are beta-lactamase producing)
- Proteus mirabilis
  (beta-lactamase and non-beta-lactamase producing)
- Proteus vulgaris, Providencia rettgeri, Providencia stuartii, Morganella morganii
- Neisseria gonorrhoeae
  (beta-lactamase and non-beta-lactamase producing)
- H. Pylori
- Enterobacter

Anaerobes:
- Peptostreptococcus species
- Bacteroides species, including B. fragilis

INDICATIONS AND USAGE:
BACTAMOX PLUS is indicated for the treatment of infections due to susceptible strains of the designated microorganisms in the conditions listed below.
1. Skin and Skin Structure Infections
2. Intra-Abdominal Infections
3. Gynecological Infections
4. Urinary Tract Infections
5. H. pylori eradication
6. Upper and Lower Respiratory Tract Infections
7. Infections of the Ear, Nose, and Throat
8. Severe dental abscess with spreading cellulitis

While BACTAMOX PLUS is indicated only for the conditions listed above, infections caused by Amoxicillin-susceptible organisms are also amenable to treatment with BACTAMOX PLUS due to its amoxicillin content. Therefore, mixed infections caused by amoxicillin-susceptible organisms and beta-lactamase producing organisms susceptible to BACTAMOX PLUS should not require the addition of another antibiotic.
Appropriate culture and susceptibility tests should be performed before treatment in order to isolate and identify the organisms causing infection and to determine their susceptibility to BACTAMOX PLUS.

Therapy may be instituted prior to obtaining the results from bacteriological and susceptibility studies, when there is reason to believe the infection may involve any of the beta-lactamase producing organisms listed above in the indicated organ systems. Once the results are known, therapy should be adjusted if appropriate.

To reduce the development of drug-resistant bacteria and maintain effectiveness of BACTAMOX PLUS and other antibacterial drugs, BACTAMOX PLUS should be used only to treat or prevent infections that are proven or strongly suspected to be caused by susceptible bacteria. When culture and susceptibility information are available, they should be considered in selecting or modifying antibacterial therapy. In the absence of such data, local epidemiology and susceptibility patterns may contribute to the empiric selection of therapy.

CONTRAINDICATIONS:
The use of BACTAMOX PLUS is contraindicated in individuals with a history of hypersensitivity reactions to any of the penicillins and beta lactam antibiotics and with a previous history of cholestatic jaundice/hepatic dysfunction associated with BACTAMOX PLUS

WARNINGS:
Serious and Occasionally Fatal Hypersensitivity (Anaphylactic) reactions have been reported in patients on penicillin therapy. these reactions are more apt to occur in individuals with a history of penicillin hypersensitivity and/or hypersensitivity reactions to multiple allergens. there have been reports of individuals with a history of penicillin hypersensitivity who have experienced severe reactions when treated with cephalosporins. before therapy with a penicillin, careful inquiry should be made concerning previous hypersensitivity reactions to penicillins, cephalosporins, and other allergens. if an allergic reaction occurs, bactamox plus should be discontinued and the appropriate therapy instituted.

Serious Anaphylactoid reactions require immediate emergency treatment with epinephrine. oxygen, intravenous steroids, and airway management, including intubation, should also be administered as indicated.

PRECAUTIONS:
General: While BACTAMOX PLUS possesses the characteristic low toxicity of the penicillin group of antibiotics, periodic assessment of organ system functions, including renal, hepatic, and hematopoietic function, is advisable during prolonged therapy.

In patients treated with BACTAMOX PLUS the possibility of super infections with mycotic or bacterial pathogens should be kept in mind during therapy. If super infections occur (usually involving Pseudomonas or Candida), the drug should be discontinued and/or appropriate therapy instituted.

DRUG INTERACTIONS:
Probenecid decreases the renal tubular secretion of amoxicillin and sulbactam. Concurrent use of probenecid with BACTAMOX PLUS may result in increased and prolonged blood levels of amoxicillin and sulbactam.

The concurrent administration of allopurinol and amoxicillin increases substantially the incidence of rashes in patients receiving both drugs as compared to patients receiving amoxicillin alone. It is not known whether this potentiation of amoxicillin rashes is due to allopurinol or the hyperuricemia present in these patients. There are no data with BACTAMOX PLUS and allopurinol administered concurrently.
BACTAMOX PLUS and aminoglycosides should not be reconstituted together due to the in vitro inactivation of aminoglycosides by the amoxicillin component of BACTAMOX PLUS.

Chloramphenicol, macrolides, sulfonamides, and tetracyclines may interfere with the bactericidal effects of penicillin. However, the clinical significance of this interaction is not well documented.
Oral anticoagulants and penicillin antibiotics have been widely used in practice without reports of interaction. However, in the literature there are cases of increased international normalised ratio in patients maintained on acenocoumarol or warfarin and prescribed a course of amoxicillin. If co-administration is necessary, the prothrombin time or international normalised ratio should be carefully monitored with the addition or withdrawal of amoxicillin. Moreover, adjustments in the dose of oral anticoagulants may be necessary

Drug/Laboratory Test Interactions: Administration of BACTAMOX PLUS will result in high urine concentration of amoxicillin. High urine concentrations of amoxicillin may result in false positive reactions when testing for the presence of glucose in urine using Clinitest™, Benedict's Solution or Fehling's Solution.
It is recommended that glucose tests based on enzymatic glucose Oxidase reactions be used. Following administration of amoxicillin to pregnant women, a transient decrease in plasma concentration of total conjugated estriol, estriol-glucuronide, conjugated estrone and estradiol has been noted. This effect may also occur with BACTAMOX PLUS.

As with any potent drug, periodic assessment of renal, hepatic, and hematopoietic function should be made during prolonged therapy.

PREGNANCY:
Pregnancy Category B.
No adequate and well controlled studies in pregnant women, this drug should be used during pregnancy only if clearly needed.

It is not known whether the use of Bactamox Plus in humans during labor or delivery has immediate or delayed adverse effects on the fetus, prolongs the duration of labor, or increases the likelihood that forceps delivery or other obstetrical intervention or resuscitation of the newborn will be necessary.

Nursing Mothers: Low concentrations of amoxicillin and sulbactam are excreted in the milk; therefore, caution should be exercised when BACTAMOX PLUS is administered to a nursing woman.

Pediatric Use: The safety and effectiveness of BACTAMOX PLUS have been established for pediatric patients one year of age and older as approved in adults.

ADVERSE REACTIONS:
Adult Patients: BACTAMOX PLUS is generally well tolerated. The following adverse reactions have been reported.

Local Adverse Reactions:
Pain at injection site, Thrombophlebitis

Systemic Adverse Reactions:
The most frequently reported adverse reactions were:
Rashes, Urticaria, Vomiting, Diarrhea

Less systemic reactions: Itching, vomiting, candidiasis, fatigue, malaise, headache, flatulence, abdominal distension, urine retention, dysuria,edema, facial swelling, erythema, chills, tightness in throat and substernal pain.

Hypersensitivity Reactions: Serum sickness-like reactions, erythematous maculopapular rashes, erythema multiforme, Stevens- Johnson syndrome, exfoliative dermatitis, toxic epidermal necrolysis, acute generalized exanthematous pustulosis, hypersensitivity vasculitis and urticaria have been reported.

Central Nervous System: Reversible hyperactivity, agitation, anxiety, insomnia, confusion, convulsions, behavioral changes, and/or dizziness have been reported rarely.

OVERDOSAGE:
Neurological symptoms can be observed following overdose of BACTAMOX plus. There is no specific antidote, hence treatment should be symptomatic. Amoxicillin may be removed from circulation by hemodialysis. The molecular weight, degree of protein binding and pharmacokinetics profile of sulbactam suggest that this compound may also be removed by hemodialysis.

DOSAGE AND ADMINISTRATION:
- BACTAMOX PLUS may be administered by either the IV or the IM routes
- For IV administration, the dose can be given by slow intravenous injection over at least 10–15 minutes or can also be delivered, in greater dilutions with 50–100 mL of a compatible diluents as an intravenous infusion over 15–30 minutes

ADMINISTRATION IN PEDIATRIC PATIENTS:
- The safety and efficacy of BACTAMOX PLUS administered via intramuscular injection in pediatric patients of 1 year of age or

older have not been established

CHILDREN UPTO 10 YEARS:
- 150 - 200 mg /kg / day in every 8 hours in divided doses or as directed by physician
- This 150- 200 mg/kg/day dosage represents the total amoxicillin content plus the sulbactam content of BACTAMOX PLUS

ADULTS:
- 1.5 g to 3 g in every 8 hours or as directed by physician
- The course of intravenous therapy should not routinely exceed 14 days.
- The total dose of BACTAMOX PLUS should not exceed 12gram / day, considering the SULBACTAM component.

Impaired Renal Function: In patients with impairment of renal functions the elimination kinetics of amoxicillin and sulbactam are similarly affected, hence the ratio of one to the other will remain constant whatever the renal function.

The dose of BACTAMOX PLUS in such patients should be administered less frequently in accordance with the usual practice for amoxicillin and according to the following recommendations:

BACTAMOX PLUS Dosage Guide for Patients with Renal Impairment.

Creatinine Clearance (mL/min)	Half-Life (Hours)	Recommended Dosage
•30	1	1.5–3.0 g q 6h-q 8h
15–29	5	1.5–3.0 g q 12h
5–14	9	1.5–3.0 g q 24h

DIRECTIONS FOR USE:
Diluents:
- Sterile Water for Injection
- 0.9% Sodium Chloride Injection
- 5% Dextrose Injection
- Lactated Ringer's Injection

General Dissolution Procedures: BACTAMOX PLUS sterile powder for intravenous and intramuscular use may be reconstituted with any of the compatible diluents described in this insert.

Solutions should be allowed to stand after dissolution to allow any foaming to dissipate in order to permit visual inspection for complete solubilization.

Preparation for Intravenous Use:
Initially, BACTAMOX PLUS vial may be reconstituted with Sterile Water for Injection to yield solution and then an appropriate volume of suitable parenteral diluents should be added to this solution to make stable solutions for specific time period for infusion. After the indicated time periods, any unused portions of solutions should be discarded.

In 0.9% Sodium Chloride Injection, USP: The final diluted solution of BACTAMOX PLUS should be completely administered within 8 hours in order to assure proper potency.

Preparation for Intramuscular Injection: Vials for intramuscular use may be reconstituted with:
- 0.5% Lidocaine Hydrochloride Injection USP
- 2% Lidocaine Hydrochloride Injection USP.

Note: Use only freshly prepared solutions and administer within one hour after preparation.

When concomitant therapy with other medication is indicated, BACTAMOX PLUS should be reconstituted and administered separately

PRESENTATION
The following packages are available:
- Vials containing 0.75 g equivalent of BACTAMOX PLUS (500mg amoxicillin sodium plus 250 mg sulbactam sodium) with 3 ml sterile water for injection
- Vials containing 1.5 g equivalent of BACTAMOX PLUS (1 g amoxicillin sodium plus 0.5 g sulbactam sodium) with 5 ml sterile water for injection
- Vials containing 3 g equivalent of BACTAMOX PLUS (2 g amoxicillin sodium plus 1 g sulbactam sodium) with 10 ml sterile water for injection

STORAGE AND DIRECTIONS:
Protect from light & moisture.
Store at temperature not exceeding 25ºC
Keep out of the reach of children.
Reconstituted solutions should be used within 24 Hours
For suspected adverse drug reaction for BOSCH products, report at ade@bosch-pharma.com

WARNING:
To be sold on prescription of a registered medical practitioner only.

ہدایات :
روشنی اور نمی سے محفوظ 25°C سے زیادہ درجہ حرارت پر نہ رکھیں۔
بچوں کی پہنچ سے دُور رکھیں۔
ڈاکٹر کی ہدایت کے مطابق استعمال کریں۔
انتباہ : صرف رجسٹرڈ میڈیکل پریکٹیشنر کے نسخے پر فروخت کے لئے۔

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