SELEMYCIN

Package Insert

Presentation

Each ampoule of Selemycin 250mg/2ml contains Amikacin 250mg as Amikacin Sulfate
Each ampoule of Selemycin 500mg/2ml contains Amikacin 500mg as Amikacin Sulfate

Product Description

The solution is presented as a clear, colourless to slightly yellow solution.

Indications

Amikacin is indicated in the short-term treatment of serious infections due to susceptible strains of Gram-negative bacteria as well as some other bacteria including some strains of staphylococci and mycobacteria.
The indication includes: Bone (including joint infections), burn wound infections, CNS infections (including meningitis), intra-abdominal infections (including peritonitis), biliary tract infections, pseudomonal pneumonia, septicaemia (including bacteraemia), skin and soft-tissue infections, complicated and recurrent urinary tract infections, ventriculitis, bacterial endocarditis and atypical mycobacterial infections.

Pharmacology

Pharmacodynamic properties

Amikacin sulfate is an aminoglycoside antibiotic which is active against a broad spectrum of Gram negative bacteria and some Gram positive bacteria.
It is active against the following Gram negative organisms: *Acinetobacter sp., Citrobacter freundii, Enterobacter sp., Escherichia coli, Klebsiella sp., Minea-Herellae, Proteus sp.* (indole positive and indole negative)*, Providencia sp., Pseudomonas sp., Salmonella sp., Serratia sp., Shigella sp.* Sensitivity *in vitro* to amikacin may be shown by many strains of these gram negative organisms that are resistant to gentamicin and tobramycin.
The main gram positive organism that is sensitive to amikacin is *Staphylococcus aureus*, including strains resistant to methicillin. Amikacin has some activity against other gram positive organisms, including certain strains of *Streptococcus pyogenes*, enterococci and *Diplococcus pneumoniae*.
Mode of action appears to be inhibition of protein synthesis in susceptible bacteria by irreversible binding to the 30S ribosomal sub-unit.

Pharmacokinetic properties

Amikacin is rapidly absorbed following intramuscular injection, and peak serum levels of about 11mg/l and 23mg/l are reached about one hour after intramuscular doses of 250mg and 500mg respectively. Ten hours post administration, levels are about 0.3mg/l and 2.1mg/l respectively.
It is 20% or less bound to serum proteins, and serum concentrations remain bactericidal to sensitive organisms for ten to twelve hours.
Amikacin diffuses readily through extracellular fluids and is excreted in the urine unchanged, mainly by glomerular filtration. In normal renal function individuals, half-life is two to three hours. A 250mg intramuscular dose is about 65% excreted in six hours and 91% excreted within 24 hours, with urinary concentrations averaging about 560mg/l in the first six hours and 160mg/l over six to twelve hours.
Single 500mg dose given to normal adults intravenously over 30 minutes produce a mean peak serum level of 38mg/l at the end of the infusion. Drug accumulation does not result from repeated infusions. Amikacin has been found in the cerebrospinal fluid, pleural fluid, amniotic fluid and in the peritoneal cavity.

Contraindications

A history of hypersensitivity to amikacin is contraindicated for its use. A history of hypersensitivity or serious toxic reactions to aminoglycosides may contraindicate the use of any other aminoglycoside because of the known cross-sensitivities of patients to drugs in this class.

Warnings and Precautions

Patients should be maintained in a well hydrated state during amikacin therapy.
Amikacin should be used cautiously in patients with impaired renal function or diminished glomerular filtration. Their renal function should be assessed by standard methods before therapy and at intervals during therapy. The dosage level should be reduced and/or the dosage interval extended according to serum creatinine levels to avoid accumulation of amikacin and to minimise the risk of ototoxicity.

The use of amikacin, as with other aminoglycosides, can result in ototoxicity and/or nephrotoxicity. Precautions in respect of recommended dosage and adequate hydration should be followed.
Signs of renal irritation, such as albumin, casts, red or white blood cells, may appear. In such cases hydration should be increased and a reduction in dosage may be desirable. Upon completion of treatment, these signs usually disappear.
If azotaemia or a progressive decrease in urine output occurs, treatment should be terminated.
The use of amikacin in patients with a previous history of allergy to aminoglycosides, or in patients who may have sub-clinical renal or eighth nerve damage induced by previous administration of nephrotoxic and/or ototoxic drugs, such as bekanamycin, cephaloridine, colistin, dihydrostreptomycin, gentamycin, kanamycin, neomycin, polymyxin B, streptomycin, tobramycin and viomycin, should be considered with caution as the toxicity may be additive.
Amikacin should be used in these patients only if the therapeutic advantages outweigh the potential risks, in the opinion of the doctor.
It is not recommended to use amikacin by intraperitoneal route in young children.

Dosage and Administration
The intramuscular is the preferred route of administration, but in cases of life threatening infections, or where the intramuscular route is not feasible, the intravenous route may be used. Dosage is identical by either route. At the recommended dosage levels, uncomplicated infections due to susceptible organisms should respond to therapy in 24 - 48 hours. If no clinical response occurs within three to five days, consideration should be given to instituting an alternative therapy.

Adults and children:
A dose of 15mg/kg bodyweight/day, in two equally divided doses. This is equivalent to 500mg two times a day in adults.

Neonates and premature infants:
An initial loading dose of 10mg/kg bodyweight/day should be given, followed by 15mg/kg bodyweight/day, in two equally divided doses.

Elderly: As amikacin is excreted by the renal route, renal function should be evaluated whenever possible and dosage adjusted as required.

Renal impairment: The daily dose should be reduced and/or the dosing interval increased to avoid accumulation of the drug. A method of calculating the dosage interval is to multiply serum creatinine concentration (mg/100ml) by nine to give the interval in hours between doses.

Serum creatinine concentration (mg/100ml)	**Interval between 7.5mg/kg doses (hours)**
1.5	13.5
2.0	18
2.5	22.5
3.0	27
3.5	31.5
4.0	36
4.5	40.5
5.0	45
5.5	49.5
6.0	54

As renal function may alter significantly during treatment, serum creatinine should be checked frequently, and dosage interval adjusted as appropriate.

Life threatening infections and/or those caused by pseudomonads:
Adult dose may be increased to 500mg every eight hours. Dose should not exceed 1.5g/day and should not be given for more than ten days. A maximum total adult dose of 15g should not be exceeded.

Urinary tract infections (except pseudomonad infections):
A dose of 7.5mg/kg bodyweight/day, in two equally divided doses. This is equivalent to 250mg two times a day in adults.
A urinary alkalising agent may be administered concurrently as the activity of amikacin is enhanced by increasing the pH.

Intraperitoneal use:
Following exploration for established peritonitis, or after peritoneal contamination due to faecal spill during surgery, amikacin may be used as an irrigant after recovery from anaesthesia in concentration of 0.25% (2.5mg/ml). For instillation in adults, a single dose of 500mg should be diluted in 20ml of sterile distilled water and instilled via a catheter sutured into the wound at closure. If possible, until the patient has fully recovered from the effects of anaesthesia and muscle relaxing drugs, instillation should not be done.

Other routes of administration:
Selemycin concentrations of 0.25% may be used as an irrigating solution in abscess cavities, the cerebral ventricles, the peritoneum and the pleural space.

Interactions with Other Medicaments
Rapidly acting diuretic drugs, such as ethacrynic acid, frusemide, used in conjunction with amikacin increase the risk of ototoxicity, especially if the diuretic is administered intravenously, and may result in irreversible deafness.
Intraperitoneal use of amikacin is not recommended in patients under the influence of anaesthetics or muscle relaxing drugs as neuromuscular blockade and respiratory depression may occur. These include decamethonium, ether, halothane, succinylcholine and d-tubocurarine.

Pregnancy and Lactation
The safety of amikacin in pregnancy and lactation has not been established.

Undesirable Effects
Provided the recommended doses and precautions are followed, the incidence of toxic effects is low. Toxic reactions reported include drug fever, partial reversible or irreversible deafness, headache, nausea, paraesthesia, skin rash, tinnitus, vertigo and vomiting. Urinary signs of renal irritation, casts, red and white blood cells, albumin; azotaemia and oliguria have been reported.

Effects on Ability to Drive and Use Machines
None known

Symptoms and Treatment of Overdose
In the event of overdose, or toxic reaction, peritoneal dialysis or haemodialysis will help in removing amikacin from the blood.

Storage
Store below 30°C, in the original package. Do not refrigerate or freeze. Diluted solution should be used immediately or not longer than 24 hours when stored at 2 to 8°C.

Availability
Available in packs of 100's

Manufacturer
MEDOCHEMIE LTD (Ampoule Injectable Factory), 48 Iapetou Street, Agios Athanassios Industrial Area, 4101 Agios Athanassios, Limassol, CYPRUS

Product Registration Holder
KOMEDIC SDN BHD, 4 Jalan PJS 11/14, Bandar Sunway, 46150 Petaling Jaya, Selangor DE,

Date of Revision
January 2020