

DRUG:	GENTAMICIN
SYNONYMS:	
TRADE NAME:	GENTAMICIN INJECTION B.P.
DRUG CLASS:	Aminoglycoside antibiotic
AVAILABILITY:	Ampoules and/or vials containing 10mg/mL, 40mg/mL, 60mg/1.5mL, 80mg/2mL Also contains disodium edetate. ⁶
pH:	3.0 - 5.5 ^{1,4}
PREPARATION:	Not applicable.
ADMINISTRATION:	I.M. Injection: - Suitable. S.C. Injection: - Not recommended (no information). I.V. Injection: - Not recommended by manufacturers. ^{6,8} (see Special Notes) I.V. Infusion: - Dilute to 50 to 200mL with the appropriate infusion solution. ^{1,5,6} The final concentration should not exceed 1mg/mL ⁶ . Administer over 20 to 120 minutes. ^{1,4,5,6} (see Special Notes)
STABILITY:	Undiluted Solution: - Protect from light. ⁶ Avoid freezing. ⁵
COMPATIBILITY:	Compatible Fluids: - Glucose 4% in sodium chloride 0.18% ¹ , glucose 5% ^{1,3,5,6} , glucose 10% ^{1,3} , Hartmann's ^{1,3} , Ringer's ^{1,3} , sodium chloride 0.9% ^{1,3,5,6} . Compatible Drugs: - Aminophylline ³ , aztreonam ^{1,3} (12 hours at 25°C or 24 hours at 4°C) ^{1,3} , ceftazidime ^{1,3} , cefepime ^{1,3} , cefotaxime ^{1,3} , cefotetan ^{1,3} , cefuroxime ^{1,3} , cephalothin ^{1,3} , cephamandole ^{1,3} , cephazolin ^{1,3} , flucloxacillin ^{1,3} , frusemide ^{1,3,4} , heparin sodium ^{1,3,4} , hydrocortisone sodium phosphate ³ , penicillins and cephalosporins ^{1,6} , phenytoin ¹ , propofol ¹ , sodium bicarbonate ⁴ , ticarcillin ^{1,3} . Compatible via Y-Site: - Aciclovir ^{1,3} , amiodarone ^{1,3} , aztreonam ¹ , cefepime ¹ , cefpirome ¹ , ciprofloxacin ^{1,3} , cyclosporin ³ , esmolol ^{1,3} , famotidine ¹ , fluconazole ^{1,3} , foscarnet ^{1,3} , hydromorphone ¹ , insulin regular ^{1,3} , linezolid ¹ , magnesium sulphate ^{1,3} , meropenem ¹ , midazolam ¹ , morphine sulphate ^{1,3} , ondansetron ^{1,3} , pethidine ^{1,3} , remifentanyl ¹ , tacrolimus ¹ . (see Special Notes) Compatible in Syringe: - Lignocaine ¹ , lignocaine with adrenaline ¹ . (see Special Notes)
INCOMPATIBILITY:	Incompatible Fluids: - Fat emulsion 10%. ¹ Incompatible Drugs: - Amphotericin B ^{1,3} , ampicillin ^{1,3} , cefepime ¹ , cefotaxime ¹ , cefotetan ¹ , ceftazidime ³ , cefuroxime ³ , cephalothin ^{1,3} , cephamandole ¹ , cephazolin ^{1,3} , flucloxacillin ¹ , frusemide ^{1,3,4} , heparin sodium ^{1,3,4} , hydrocortisone sodium phosphate ³ , penicillins and cephalosporins ^{1,6} , phenytoin ¹ , propofol ¹ , sodium bicarbonate ⁴ , ticarcillin ^{1,3} .
SPECIAL NOTES:	Drug level monitoring is required. Refer to Therapeutic Guidelines: Antibiotics for recommendations on how best to do this. ⁹ Gentamicin is inactivated by penicillins and cephalosporins so should not be mixed in the same solution or given simultaneously. In patients

with renal failure administration times of gentamicin and penicillins or cephalosporins should be staggered by several hours.⁶

Manufacturer recommends gentamicin injection should not be physically mixed with other drugs, but should be administered by separate infusion.⁶

The manufacturers state that administration of the dose by bolus injection produces serum levels which are initially in excess of what is regarded as being safe from toxic side effects. The high serum level does, however, rapidly fall and potential danger or safety of this method of administration is yet to be established.^{6,8}

It would appear from consultation with a number of hospitals that there are two main opinions regarding the appropriate mode of administering gentamicin intravenously, those who include bolus administration over 2 to 5 mins (maximum dose limits varying between hospitals) and those preferring infusions for all doses.

In practice many hospital protocols recommend that doses less than 200mg or 240mg may be given over 2 – 5 minutes without any evidence of increased toxicity.¹⁶

In practice many hospitals use more concentrated infusions than 1mg/mL for once daily dosing of gentamicin.⁵

Check with your pharmacist or drug information centre for your hospital's protocol.