Australian **Injectable Drugs** Handbook

Benzathine benzylpenicillin

TIME-CRITICAL

Synonyms: Benzathine benzylpenicillin G, BPG, benzathine benzylpenicillin tetrahydrate
Brand name: Bicillin L-A
Drug class: Penicillin antibiotic

Warnings

If the patient has a history of hypersensitivity to penicillins, confirm antibiotic choice with the treating team.

All brands contain lecithin derived from soybean.

Do not confuse benzathine benzylpenicillin (e.g. Bicillin L-A) prefilled syringe with benzylpenicillin (BenPen) vial. They are not interchangeable.

Availability

Bicillin L-A disposable syringe contains 517 mg (600 000 units)/1.17 mL or 1016.6 mg (1.2 million units)/2.3 mL of benzathine benzylpenicillin tetrahydrate.

Also contains lecithin (soy), carmellose sodium, povidone, methyl hydroxybenzoate, propyl hydroxybenzoate and sodium citrate buffer.[1] [2]

The suspension is thick and white.[3]

Brancaster Pharma powder for suspension contains 1.2 million units of benzathine benzylpenicillin. Available during shortage of Bicillin L-A.

Also contains soya lecithin, polysorbate-80, carmellose sodium, sodium citrate and povidone.[4]

Lentocilin S 1200 powder and solvent for suspension for injection contains 1.2 million units of benzathine benzylpenicillin. Available during shortage of Bicillin L-A.

Also contains sodium citrate, lecithin and polysorbate-80. Diluent ampoule contains 4 mL of lidocaine hydrochloride 1.5%.[5]

Benzetacil powder and solvent for injectable suspension contains 1.2 million units of benzathine benzylpenicillin. Available through the Special Access Scheme.

Also contains Tween (polysorbate) 80, soy lecithin and sodium citrate. Diluent ampoule contains 4 mL of water for injections.[6]

Preparation

Bicillin L-A only

Ready to use.

For **part-doses** transfer the volume of the dose required into a new syringe:

Dose as benzathine benzylpenicillin	Dose as benzathine benzylpenicillin tetrahydrate	Dose in units	Volume of the dose
900 mg	1016.6 mg	1 200 000	2.3 mL
675 mg	762 mg	900 000	1.7 mL
450 mg	508 mg	600 000	1.2 mL
337.5 mg	381 mg	450 000	0.9 mL
225 mg	254 mg	300 000	0.6 mL

May be given with lidocaine 1% or 2% to reduce the pain of the injection. Check your local policies and confirm with the treating team before proceeding.[7]

Transfer the dose to a 3 mL syringe then draw up 0.5 mL of lidocaine 1%, or 0.25 mL of lidocaine 2%. Do not mix, to allow the lidocaine to be injected first.[7]

Brancaster benzylpenicllin benzathine 1.2 million unit powder for suspension

Reconstitute the vial with at least 3.5mL of water for injections or lidocaine 1%. Gently shake the vial for at least 40 seconds to make an even suspension.[4]

For part-doses (only if Bicillin L-A is not available), reconstitute the vial with 3.5mL of water for injections or lignocaine 1% and see the table below.[8] [9]

Dose in units	Volume of the dose
1 200 000	entire contents of the vial (4.8 mL)
600 000	2.4 mL
450 000	1.8 mL

Lentocilin S 1200 powder and solvent for suspension

Reconstitute the vial with the diluent provided. Slowly inject the diluent down the wall of the vial. Rotate the vial between your hands to make an even suspension.[5]

Benzetacil powder for suspension

Gently tap the vial to loosen the powder. Reconstitute the vial with 4 mL of water for injections (provided). Shake gently until an even suspension forms, it may take several minutes. The final volume is 4.8 mL.[6]

There is no information about the use of lidocaine to reconstitute Benzetacil, however another amide local anaethestic (mepivacaine) has been studied and found to be suitable. The use of lidocaine is not expected to change the concentration.[10]

For **part-doses**, reconstitute the vial with 4 mL of water for injections and see the table below.[6]

Dose in units	Volume of the dose
1 200 000	entire contents of the vial (4.8 mL)
600 000	2.4 mL
450 000	1.8 mL

Stability

Bicillin L-A: store at 2 to 8 °C. Do not freeze. Stable for a single period of up to 2 months below 30 °C. Discard if not used, do not return to the fridge.[1]

Brancaster, Lentocilin S 1200 and Benzetacil: store below 25 °C. Use immediately after reconstitution.[4] [5] [6]

pH

Lentocilin S: 5–7.5 (reconstituted suspension with lidocaine)[4]

No information for Bicillin L-A or Benzetacil

Administration

IM injection

Suitable for adults and children.[1] Injection sites and volumes

Apply firm pressure to the injection site with a thumb for at least 10 seconds before inserting the needle.[7]

Use a 21 gauge needle.[1] [7] A needle size of at least 20 gauge is recommended for Brancaster.[4] An 18 gauge needle is recommended for Lentocillin.[5]

Inject slowly, at a steady rate, preferably over at least 2 to 3 minutes for adults, into the gluteal muscle. The ventrogluteal site is preferred. In infants and small children, the vastus lateralis may be preferable.[1] [7]

For repeated doses, rotate the site of injection. Give doses greater than 1.2 million units as two injections at separate sites.[1]

Injection into or near major peripheral nerves or blood vessels may cause neurovascular damage.[1] After inserting the needle, aspirate and observe the barrel for any blood or discolouration. Withdraw the needle and discard the syringe if any blood or discolouration appears in the barrel. Stop the injection immediately if it causes severe pain.

SUBCUT injection

Not recommended

IV injection

Contraindicated[1]

IV infusion

Contraindicated[1]

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