NEONATAL MEDICATION GUIDELINE

Benzathine Benzylpenicillin (Benzathine Penicillin)

Scope (Staff):	Nursing, Midwifery, Medical and Pharmacy Staff
Scope (Area):	CAHS NICU, NETS WA

This document should be read in conjunction with the Disclaimer.

Quick Links

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Restrictions

Formulary: Unrestricted

Description

Narrow spectrum penicillin

Presentation

Vial: Benzathine benzylpenicillin tetrahydrate 1,200,000 unit powder for suspension for injection (S19A)

Storage

Store below 25°C

Dose

Doses of benzathine benzylpenicillin should be expressed as units only.

Congenital Syphilis (<1 month):

Low-risk infant <3kg: contact Infectious Diseases for advice, benzylpenicillin may be appropriate

Low-risk infant ≥3kg: 50,000 units/kg (0.19mL/kg) IM as a single dose

High-risk: treat with IV benzylpenicillin

Dose Adjustment

Renal Impairment:

Excretion of Benzathine benzylpenicillin is delayed in renal impairment and it should be used with caution in patients requiring repeat dosing. There are no recommendations regarding dose reduction in renal impairment.

Hepatic Impairment:

No dosage adjustment is necessary in hepatic impairment.

Preparation

Intramuscular (IM) injection

Reconstitute the vial with 3.5mL of water for injection. Shake well for at least 40 seconds. Final reconstituted volume will be approximately 4.5mL.

Attach a drawing-up needle to a 1mL syringe.

Draw the required contents of Benzathine benzylpenicillin into the 1mL syringe - 50,000 units (0.19mL) per kilogram of baby's weight.

Remove the drawing-up needle.

Attach IM needle to the syringe to administer injection (see comments section regarding needle selection in neonatal patients).

Administration

Intramuscular Injection

- Benzathine benzylpenicillin must only be administered via intramuscular injection into the anterolateral aspect of the thigh (preferred in neonates).
- It should be administered at a slow, steady rate preferably over 2-3 minutes to avoid blockage of the needle and to minimise pain. The injection site should be rotated for subsequent doses.
- After insertion of the needle, aspiration is recommended, and the barrel should be observed for any blood or discolouration.
- If there is any discolouration, the needle should be withdrawn, and the syringe discarded. Stop injection immediately if there is severe pain at the injection site.

The pain of administration can be reduced by;

- Allowing the alcohol from the alcohol swab to dry before injection.
- Applying pressure with thumb for 10 seconds before injection.
- Warming the syringe to room temperature immediately prior to the injection.
- Using a 21G needle.

Compatible Fluids

Not applicable

Side Effects

Common: Pain and inflammation at the injection site, rash, urticaria, skin eruptions (most commonly maculopapular), nausea, diarrhoea, fever, fatigue, Jarisch-Herxheimer reaction (fever, chills, headache, hypotension and flare-up of lesions due to the release of pyrogens from the organism at the time of first administration e.g. syphilis).

Serious: Clostridium difficile-associated disease, anaphylaxis or other immediate hypersensitivity reactions, black tongue, electrolyte disturbances, neurotoxicity with high doses (including drowsiness, hallucinations, coma and seizures), blood dyscrasias, bleeding.

Interactions

Tetracyclines may antagonise the bactericidal effect of penicillin and concurrent use of these drugs should be avoided.

Monitoring

In patients being treated for syphilis and other spirochete infections monitor for Jarisch-Herxheimer reaction (fever, chills, headache, hypotension and flare-up of lesions lasting for 12-24 hours).

Comments

It is recommended to use a 25G 16mm length needle for neonatal intramuscular injections, however if this is deemed inappropriate for your patient consider using a 21G needle being mindful of injection depth.

Related Policies, Procedures & Guidelines

Congenital syphilis guidelines for the Northern Territory

Queensland Health: Syphilis in pregnancy

Perth Children's Hospital ChAMP Benzathine Benzylpenicillin (Benzathine Penicillin G) Monograph - Paediatric

HDWA Mandatory Policies:

https://ww2.health.wa.gov.au/Silver-book/Notifiable-infections/Syphilis

WNHS Clinical Practice Guidelines:

Syphilis: Investigation and management of the neonate born to a mother with syphilis

Medication Administration- Intramuscular, Subcutaneous, Intravascular

References

Australian Medicines Handbook. Benzathine benzylpenicillin. In: Australian Medicines Handbook [Internet]. Adelaide (South Australia): Australian Medicines Handbook; 2021 [cited 2021 May 21]. Available from: https://amhonline.amh.net.au/

Therapeutic Guidelines. Antibiotic: Pregnancy and congenital syphilis. In: eTG complete [Internet]. West Melbourne (Victoria): Therapeutic Guidelines; 2021 [cited 2021 May 21]. Available from: https://tgldcdp-tg-org-au.kelibresources.health.wa.gov.au/etgAccess

Takemoto CK, Hodding JH, Kraus DM. Pediatric & neonatal dosage handbook with international trade names index: a universal resource for clinicians treating pediatric and neonatal patients. 27th ed. Hudson (Ohio): Lexicomp; 2020. p1848.

Truven Health Analytics. Penicillin G Benzathine. In: NeoFax [Internet]. Greenwood Village (CO): Truven Health Analytics; 2021 [cited 2021 May 21]. Available from: https://neofax.micromedexsolutions.com/

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