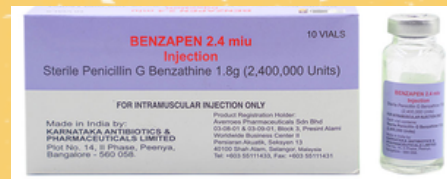


Benzathine Benzylpenicillin: IV or IM?

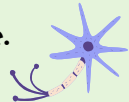
Recently a medication error was prevented when Benzathine benzylpenicillin administration via IV route was stopped. It should be given intramuscularly to avoid serious side effects.

What is Benzathine Benzylpenicillin?

Benzathine benzylpenicillin is an antibiotic that is slowly absorbed after IM injection and subsequently hydrolysed to benzylpenicillin. It is the drug of choice when prolonged low concentrations of benzylpenicillin are required, allowing for prolonged antibiotic action over 2–4 weeks.



Why must Benzathine Benzylpenicillin be given Intramuscularly?

- IV injection of these drugs can cause neurovascular damage. 
- Inadvertent IV administration of these drugs has been associated with cardiorespiratory arrest and death 
- The most likely pathophysiologic explanation for these fatalities is that these repository penicillins' compound is a crystalline powder that may cause direct damage when injected into a blood vessel, possibly eliciting vascular spasm and subsequent occlusion by the large crystals of the penicillin salt 

We have 2 injectable Benzylpenicillins that are often confused for one or the other & should be administered via different routes. They are described in the table below.

Comparison Table of BenZAthine Benzylpenicillin and Benzylpenicillin inj.

Drug name	BenZAthine Benzylpenicillin / BenZAthine Penicillin G	Benzylpenicillin / Penicillin G
Formulations	Inj 2.4 Mega/Million Units (1.8g)	Inj 1 Mega Units (600mg) Inj 5 Mega Units (3g)
Usual indication	Acute rheumatic fever prophylaxis: 1.2 MU q 4 WEEKS Early syphilis: 2.4 MU single dose Late syphilis: 2.4 MU WEEKLY for 3 weeks Max dose: 2.4 MU/dose	General dosing: 1-5 MU q 4-6 hours DAILY (Used for many indications including Streptococcus, Clostridium, etc) Max dose: 24 MU daily dose
Serum Half-life	Days	0.4-0.9 Hours
Route of administration	 IM only	IM/IV/IV infusion

Correct Administration of BenZAthine Benzylpenicillin



IM ✓

IV ✗

Do not confuse
Long -acting
BenZAthine Benzylpenicillin
with Rapidly-acting
Benzylpenicillin



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2. Sudesh K Gungadin and Poonam Gungadin, Fatal outcome of intravenous injection of benzathine penicillin G in a neonate – A case report, AKS Publication, January 2019.

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