

## Can only be prescribed after discussion with an infection specialist

Daptomycin is a cyclic lipopeptide antibiotic with potent bactericidal activity against Gram positive organisms including Streptococci, coagulase negative Staphylococci and *Staphylococcus aureus*, including methicillin resistant *Staphylococcus aureus* (MRSA) and glycopeptide intermediate *Staphylococcus aureus* (GISA).

### Indications

1) **Gram positive bacteraemia** with or without infective endocarditis in the following situations:

- MRSA bacteraemia where vancomycin MIC > 1 and patient is not clinically responding
- SAB 2<sup>nd</sup> line treatment - [click here](#) for national SAB guidance
- Alternative to vancomycin if patient intolerant or penicillin allergic

2) **Skin and soft tissue infection**, where there is either:

- Suspicion of resistant organism (MRSA etc)
- Intolerance of first and second line intravenous antimicrobials (flucloxacillin, clindamycin, vancomycin)
- As outpatient parenteral therapy (OPAT) when there is a desire to avoid using  $\beta$ -lactam agents such as ceftriaxone (allergy, high *Clostridium difficile* risk) and glycopeptides are inappropriate and oral linezolid or clindamycin (allergy, high *Clostridium difficile* risk) are not a option or suitable - [click here](#) for linezolid prescribing guidance

3) **Prosthetic joint infection**

- As an alternative to glycopeptides

4) **Vascular grafts**

- As an alternative to glycopeptides

**Note:** Daptomycin is not effective in lung tissue and should be avoided in patients with significant pulmonary disease (pneumonia or lung abscess) but can be used in patients with right sided endocarditis/tricuspid valve endocarditis with septic emboli.

## Dosing

The licensed dose of daptomycin is 4-6mg/kg daily. There is increasing evidence that this dose is insufficient and therefore the Infection Specialist providing advice will usually recommend an 'off label' dose of 8-10mg/kg daily.

If any of the following are present then the 8-10mg/kg daily dose should be used:

- Soft tissue infection in intravenous drug users
- Features of necrotising fasciitis
- Diabetic foot infection
- Strong clinical suspicion of bacteraemia
- Strong clinical suspicion of underlying osteomyelitis
- Creatinine clearance <30mmol/l (dose should be every 48h or post-dialysis)
- Clinical failure with glycopeptide

Dose for **uncomplicated skin and soft tissue infections should be 4-6mg/kg** once daily.

Daptomycin vials are available in 350mg and 500mg strengths. The dose should be rounded to minimise wastage.

**Dosing in Obesity:** There is increasing evidence to suggest that where doses of 8-12mg/kg are being used then it is reasonable to use adjusted body weight in very obese patients to ensure treatment efficacy while balancing the risk of toxicity.

Adjusted body weight = [Ideal body weight](#) + 0.4(Total body weight – Ideal body weight)

Contact pharmacist for advice.

## Monitoring

Daptomycin is usually well tolerated. Common adverse effects include gastrointestinal disturbance, injection site reactions and headache. More specifically, myopathy is seen in approximately 2% of patients receiving daptomycin, although the majority of these patients do not require treatment to be necessarily stopped.

- Renal function and creatine kinase should be measured prior to therapy with daptomycin and monitored at least weekly.
- If the patient is on concurrent statins these should be stopped, if possible, for the duration of therapy but ensure they are restarted at the end of daptomycin treatment.

- If creatine kinase rises more than five times the upper limit of normal stopping daptomycin / switching agent should be considered.
- The probability of creatine kinase elevations, with or without myopathy, increases with daily dose and when the pre dose level is >24mg/L.
- Routine TDM is not warranted but may be considered when the CK is > 5 times ULN and continuing daptomycin therapy is imperative.
- The patient should also be monitored for neuropathy.

## References

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[UKCPA/HIS](#) How should antibiotics be dosed in obesity 2016

Meng et al. Comprehensive Guidance for Antibiotic Dosing in Obese Adults. Pharmacotherapy 2017;37(11):1415-1431

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