Diabetic foot infection: antimicrobial prescribing





Background

In people with diabetes, all foot wounds are likely to be colonised with bacteria.

Diabetic foot infection has at least 2 of:

- local swelling or induration
- erythema
- local tenderness or pain
- local warmth
- purulent discharge

Severity of diabetic foot infection is classified as:

- Mild local infection with less than 2 cm ervthema
- Moderate local infection with more than 2 cm erythema or involving deeper structures (such as abscess, osteomyelitis, septic arthritis or fasciitis)
- Severe local infection with signs of a systemic inflammatory response



Prescribing considerations

When choosing an antibiotic, take account of:

- the severity of infection (mild. moderate or severe)
- the risk of complications
- previous microbiological results
- previous antibiotic use
- patient preference

Give oral antibiotics first line if possible Review intravenous antibiotics by 48 hours and consider switching to oral antibiotics if possible Review need for continued antibiotics

regularly

Diabetic foot infection



- Start antibiotic treatment as soon as possible
- Take samples for microbiological testing before, or as close as possible to, the start of antibiotic treatment
- When choosing an antibiotic, take account of prescribing considerations

Give advice about:

- possible adverse effects of antibiotics
- seeking medical help if symptoms worsen rapidly or significantly at any time. or do not start to improve within 2 to 3 days

When microbiological results are available:

- review the choice of antibiotic, and
- change the antibiotic according to results. using a narrow spectrum antibiotic, if appropriate



- Do not offer antibiotics to prevent diabetic foot infection
- Advise seeking medical help if symptoms of diabetic foot infection develop

Reassess if symptoms worsen rapidly or significantly at any time, do not start to improve within 2 to 3 days, or the person becomes systemically very unwell or has severe pain out of proportion to the infection. Take account of:

- other possible diagnoses, such as pressure sores, gout or non-infected ulcers
- symptoms or signs suggesting something more serious such as osteomyelitis, necrotising fasciitis or sepsis
- previous antibiotic use



Refer to hospital immediately and inform multidisciplinary foot care service if:

- ulceration with fever or any signs of sepsis, or
- ulceration with limb ischaemia, or
- suspected deep-seated soft tissue or bone infection, or

For all other active diabetic foot problems, refer to foot service within 1 working day

When exercising their judgement, professionals and practitioners are expected to take this guideline fully into account, alongside the individual needs, preferences and values of their patients or the people using their service. It is not mandatory to apply the recommendations, and the guideline does not override the responsibility to make decisions appropriate to the circumstances of the individual, in consultation with them and their families and carers or guardian.

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Choice of antibiotic: adults aged 18 years and over

Antibiotic ¹	Dosage and course length ²
Mild infection - first choice oral antibiotic for 7 days (up to a further 7 days may be needed based on clinical assessment³; guided by microbiological results when available)	
Flucloxacillin	500 mg four times a day
Mild infection - alternative oral antibiotics (for penicillin allergy or if flucloxacillin unsuitable) for 7 days (up to a further 7 days may be needed based on clinical assessment ³ ; guided by microbiological results when available)	
Clarithromycin	500 mg twice a day
Erythromycin (in pregnancy)	500 mg four times a day
Doxycycline	200 mg on first day, then 100 mg once a day
Moderate infection - first choice antibiotics for a minimum of 7 days (up to 6 weeks for osteomyelitis) based on clinical assessment ⁴ ; guided by microbiological results when available ^{5,6,7}	
Flucloxacillin with or without	500 mg four times a day orally or 500 mg to 2 g four times a day IV
Gentamicin and/or	Initially 5 to 7 mg/kg once a day IV, subsequent doses adjusted according to serum gentamicin concentration ⁸
	400 mg three times a day orally or 500 mg three times a day IV
Co-amoxiclav with or without	500/125 mg three times a day orally or 1.2 g three times a day IV
Gentamicin	Initially 5 to 7 mg/kg once a day IV, subsequent doses adjusted according to serum gentamicin concentration ⁸
Co-trimoxazole (in penicillin allergy) with or without	960 mg twice a day orally or 960 mg twice a day (increased to 1.44 g twice a day in severe infection) IV
Gentamicin and/or	Initially 5 to 7 mg/kg once a day IV, subsequent doses adjusted according to serum gentamicin concentration ⁸
Metronidazole	400 mg three times a day orally or 500 mg three times a day IV
Severe infection - first choice antibiotics for a minimum of 7 days (up to 6 weeks for osteomyelitis) based on clinical assessment ⁴ ; guided by microbiological results when available. Antibiotics given IV for at least 48 hours (until stabilised) ^{5,6,7}	
As for moderate infection, but additional choices of:	
Piperacillin with tazobactam	4.5 g three times a day IV (increased to 4.5 g four times a day if severe infection)
Ceftriaxone with	2 g once a day IV
Metronidazole	400 mg three times a day orally or 500 mg three times a day IV
Intravenous antibiotics to be added if suspected or confirmed MRSA infection (combination therapy with an intravenous antibiotic listed above) ^{6,7}	
Vancomycin	15 to 20 mg/kg two or three times a day (maximum 2 g per dose), adjusted according to serum-vancomycin concentration ⁹
Linezolid (if vancomycin cannot be used; specialist advice only)	600 mg twice a day
10 PME ()	

See BNF for appropriate use and dosing in specific populations, for example, hepatic impairment, renal impairment, pregnancy and breast-feeding, and administering intravenous antibiotics.

²Oral doses are for immediate-release medicines.

³ Skin takes some time to return to normal, and full resolution of symptoms at 7 days is not expected.

⁴Review the need for continued antibiotics regularly.

⁵Give oral antibiotics first-line if the person can take oral medicines, and the severity of their condition does not require intravenous antibiotics.

⁶Review intravenous antibiotics by 48 hours and consider switching to oral antibiotics if possible.

Other antibiotics may be appropriate based on microbiological results and specialist advice.

⁸Therapeutic drug monitoring and assessment of renal function is required (BNF, February 2019).

⁹Therapeutic drug monitoring and assessment of renal function is required. A loading dose of 25 to 30 mg/kg (maximum per dose 2 g) can be used in seriously unwell people to facilitate rapid attainment of the target trough serum vancomycin concentration (BNF, February 2019).

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