Specialist Pharmacy Service

NICE Bites

Jan/Feb 2020: No. 125

A summary of prescribing recommendations from NICE guidance

This edition includes one antimicrobial prescribing guideline.

Leg ulcer infection: antimicrobial prescribing

NICE NG152; February 2020

This guideline sets out an antimicrobial prescribing strategy for adults with leg ulcer infection. It aims to optimise antibiotic use and reduce antibiotic resistance.

See the two-page visual summary of recommendations, including tables to support prescribing decisions.

Definition of terms

A **leg ulcer** is a long-lasting (chronic) open wound that takes more than four to six weeks to heal. Leg ulcers usually develop on the lower leg, between the shin and the ankle.

Necrotising fasciitis is a rare but serious bacterial infection that affects the tissue beneath the skin and surrounding muscles and organs (fascia). Early symptoms can include intense pain that is out of proportion to any damage to the skin, and fever. The most common cause is group A streptococcus.

Osteomyelitis is an infection of the bone. It can be very painful and most commonly occurs in the long bones of the leg. It can also occur in other bones, such as those in the back or arms. Anyone can develop osteomyelitis, but certain people are more at risk, including people with diabetes and those with a weakened immune system.

Treatment

- Be aware that:
  - there are many causes of leg ulcers: underlying conditions, such as venous insufficiency and oedema, should be managed to promote healing,
  - most leg ulcers are not clinically infected but are likely to be colonised with bacteria,
  - antibiotics do not help to promote healing when a leg ulcer is not clinically infected.
- Do not take a sample for microbiological testing from a leg ulcer at initial presentation, even if it might be infected.
- Only offer an antibiotic for adults with a leg ulcer when there are symptoms or signs of infection (for example, redness or swelling spreading beyond the ulcer, localised warmth, increased pain or fever). When choosing an antibiotic (see **Table 1** for recommendations on choice of antibiotic) take account of:
  - the severity of symptoms or signs,
  - the risk of developing complications,
  - previous antibiotic use.
- Give oral antibiotics if the person can take oral medicines, and the severity of their condition does not require intravenous antibiotics.
- If intravenous antibiotics are given, review by 48 hours and consider switching to oral antibiotics if possible.

Advice

- When prescribing antibiotics for an infected leg ulcer in adults, give advice to seek medical help if symptoms or signs of the infection worsen rapidly or significantly at any time, or do not start to improve within two to three days of starting treatment.

Reassessment

- Reassess an infected leg ulcer in adults if:
  - symptoms or signs of the infection worsen rapidly or significantly at any time, or do not start to improve within two to three days, **OR**
  - the person becomes systemically unwell or has severe pain out of proportion to the infection.
- When reassessing an infected leg ulcer in adults, take account of previous antibiotic use, which may have led to resistant bacteria.
- Be aware that it will take some time for a leg ulcer infection to resolve, with full resolution not expected until after the antibiotic course is completed.
- Consider sending a sample from the leg ulcer (after cleaning) for microbiological testing if symptoms or signs of the infection are worsening or have not improved as expected.
- When microbiological results are available:
  - review the choice of antibiotic(s), **AND**
  - change the antibiotic(s) according to results if symptoms or signs of the infection are not improving, using a narrow-spectrum antibiotic if possible.

Referral or seeking specialist advice

- Refer adults with an infected leg ulcer to hospital if they have any symptoms or signs suggesting a more serious illness or condition, such as sepsis, necrotising fasciitis or osteomyelitis.
- Consider referring or seeking specialist advice for adults with an infected leg ulcer if they:
  - have a higher risk of complications because of comorbidities, such as diabetes or immunosuppression, **OR**
  - have lymphangitis, **OR**
  - have spreading infection that is not responding to oral antibiotics, **OR**
  - cannot take oral antibiotics (exploring locally available options for giving intravenous or intramuscular antibiotics at home or in the community, rather than in hospital, where appropriate).

Recommendations – wording used such as 'offer' and 'consider' denote the strength of the recommendation.

Drug recommendations – the guideline assumes that prescribers will use a drug's Summary of Product Characteristics (SPC) to inform treatment decisions.

Please go to www.nice.org.uk to check for any recent updates to this guidance.

Bulletin editor: Karoline Brennan
North West Medicines Information Centre offers a free medicines enquiry answering service
8.30am to 5pm, Monday to Friday. Tel: 0151 794 8113. Email: nwmedinfo@nhs.net

NHS

UKMi UK Medicines Information

Leg ulcer infection……. continued
NICE NG152; 2020

Choice of antibiotic
When prescribing antibiotics for an infected leg ulcer in adults aged 18 years and over, follow the recommendations in **Table 1**.

Table 1: Antibiotics for adults aged 18 and over

Antibiotic[1]	Dosage and course length[2]
First-choice oral antibiotic	
Flucloxacillin	500mg to 1g[3,4] 4 times a day for 7 days
Alternative first-choice oral antibiotics for penicillin allergy or if flucloxacillin unsuitable	
Doxycycline	200mg on first day, then 100mg once a day (can be increased to 200mg daily) for 7 days in total
Clarithromycin	500mg twice a day for 7 days
Erythromycin (in pregnancy)	500mg 4 times a day for 7 days
Second-choice oral antibiotics (guided by microbiological results when available)	
Co-amoxiclav	500/125mg 3 times a day for 7 days
Co-trimoxazole[4,5,6] (in penicillin allergy)	960mg twice a day for 7 days
First-choice antibiotics if severely unwell (guided by microbiological results if available)[7]	
Flucloxacillin ***with or without***	1g to 2g 4 times a day IV
Gentamicin[6,8] **and/or**	Initially 5 to 7mg/kg IV, subsequent doses if required adjusted according to serum gentamicin concentration
Metronidazole	400mg 3 times a day orally or 500mg 3 times a day IV
Co-amoxiclav ***with or without***	1.2g 3 times a day IV
Gentamicin[6,8]	Initially 5 to 7mg/kg IV, subsequent doses if required adjusted according to serum gentamicin concentration
Co-trimoxazole[4,5,6] (in penicillin allergy) ***with or without***	960mg twice a day IV (increased to 1.44g twice a day in severe infection)
Gentamicin[6,8] **and/or**	Initially 5 to 7mg/kg IV, subsequent doses if required adjusted according to serum gentamicin concentration
Metronidazole	400mg 3 times a day orally or 500mg 3 times a day IV
Second-choice antibiotics if severely unwell (guided by microbiological results when available or following specialist advice)[7]	
Piperacillin with tazobactam	4.5g 3 times a day IV (increased to 4.5g 4 times a day if severe infection)
Ceftriaxone ***with or without***	2g once a day IV
Metronidazole	400mg 3 times a day orally or 500mg 3 times a day IV
Antibiotics to be added if MRSA infection is suspected or confirmed (combination therapy with antibiotics listed above)[7]	
Vancomycin[6,8]	15 to 20mg/kg 2 or 3 times a day IV (maximum 2g per dose), adjusted according to serum vancomycin concentration
Teicoplanin[6,8]	Initially 6mg/kg every 12 hours for 3 doses, then 6mg/kg once a day IV
Linezolid (if vancomycin or teicoplanin cannot be used; specialist advice only)[6]	600mg twice a day orally or IV

1 See BNF for appropriate use and dosing in specific populations, for example, hepatic impairment, renal impairment, pregnancy and breastfeeding, and administering IV (or, when appropriate, intramuscular) antibiotics.

2 Oral doses are for immediate-release medicines.

3 The upper dose of 1g four times a day would be **off-label**, as defined in the NICE glossary.

4 The prescriber should follow relevant professional guidance, taking full responsibility for the decision. Informed consent should be obtained and documented. See the General Medical Council's good practice in prescribing and managing medicines and devices for further information.

5 Not licensed for leg ulcer infection, so use would be **off-label**.

6 See BNF for information on monitoring of patient parameters.

7 Review IV antibiotics by 48 hours and consider switching to oral antibiotics if possible.

8 See BNF for information on therapeutic drug monitoring.

Abbreviations: IV, intravenous; MRSA, meticillin-resistant Staphylococcus aureus.

Recommendations – wording used such as 'offer' and 'consider' denote the strength of the recommendation.

Drug recommendations – the guideline assumes that prescribers will use a drug's Summary of Product Characteristics (SPC) to inform treatment decisions.

Please go to www.nice.org.uk to check for any recent updates to this guidance.

Bulletin editor: Karoline Brennan
North West Medicines Information Centre offers a free medicines enquiry answering service 8.30am to 5pm, Monday to Friday. Tel: 0151 794 8113. Email: nwmedinfo@nhs.net