University Hospitals of Derby and Burton NHS Foundation Trust

Leg Ulcer Infection in Adults - Microbiology Summary Clinical Guideline

Reference Number: CG-ANTI/2024/076

Symptoms and signs of infected leg ulcer e.g. redness or swelling spreading beyond the ulcer, localised heat, increased pain, fever

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Investigation

- Microbiology: ± blood cultures, MRSA screen, ±aspirate/swab/tissue for culture

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Treatment, criteria for antibiotics:
(1) organism(s) isolated AND patient presenting with systemic symptoms (e.g. pyrexia, rigors, tachycardia etc.)
OR
(2) redness or swelling spreading beyond the ulcer, delayed healing, unexpected/disproportionate pain, abnormal odour, pocketing, discoloured or friable granulation tissue, devitalised tissue

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Treatment criteria for intravenous antibiotics:

- Proximity of leg ulcer and associated cellulitis to medical device (e.g. prosthetic joint)
- Progression of symptoms and signs after 48 hours of per oral antibiotics
- Suboptimal vasculature e.g. peripheral vascular disease, impeding delivery of antibiotics
- Intolerant of per oral antibiotics
- Sepsis and/or septic shock

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Empiric Antibiotics - see Pages 2 & 3

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Directed Antibiotics - review culture and susceptibility results or discuss with microbiology

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Duration of treatment: 7 days (combination of IV and PO routes as appropriate) is usually sufficient

Note regarding penicillin allergies

Please note that in the context of this guideline, "penicillin allergy" refers to both "non-severe penicillin allergy" i.e. non-immediate without systemic involvement and "severe penicillin allergy" i.e. immediate rapidly evolving or non-immediate with systemic involvement

Empiric, per oral antibiotics

First Line	Flucloxacillin 500mg to 1g PO QDS
Second line (penicillin allergy or likely/known MRSA)	Doxycycline* 100mg PO BD
Alternative second line if pregnant	Erythromycin 500mg PO QDS
Third line (penicillin allergy, intolerant to doxycycline)	Clarithromycin 500mg PO BD
If patient has a history of diabetes or arterial disease, or other risk factors for anaerobic infection	+/- Metronidazole 400mg PO TDS (in addition to the above regimes)

*NB Doxycycline is contraindicated in pregnancy; if likely/known MRSA, discuss with microbiology for pregnant patients

Empiric, per oral antibiotics, failure to respond to first line options, systemically well

First Line	Co-Amoxiclav 625mg PO TDS
Second line (penicillin allergy)	Co-Trimoxazole** 960mg PO BD **PLUS** if history of diabetes or arterial disease or other risk factors for anaerobic infection: Metronidazole 400mg PO TDS
Alternative second line in pregnancy	Discuss with microbiology
Likely or confirmed MRSA	Linezolid*** 600mg PO BD
If there is no response to empiric antibiotics but the patient is systemically well, discuss with Microbiology	

**NB Co-trimoxazole is contraindicated in pregnancy

*** Linezolid has multiple contraindications and interactions that must be considered before prescribing should occur; furthermore there are mandatory monitoring requirements that must be performed during therapy e.g. weekly blood monitoring; consult the BNF or discuss with a pharmacist.

Empiric, intravenous antibiotics, concerns over enteral absorption, failure to respond to empiric per oral antibiotics and/or systemically unwell (not sepsis)

First Line	Flucloxacillin 2g IV 6 hourly
Second line (penicillin allergy, likely/known MRSA and/or pregnancy)	Vancomycin IV, dosed as per hospital guidelines
If patient has a history of diabetes or arterial disease, or other risk factors for anaerobic infection	+/- Metronidazole 500mg IV TDS (in addition to the above regimes)

Empiric, intravenous antibiotics, systemically unwell including red flag sepsis

- This antibiotic section includes fluoroquinolone usage.
- The Medicines and Healthcare products Regulatory Agency (MHRA) - with input from the Commission on Human Medicines (CHM) - have reviewed and published drug safety updates regarding systemic fluoroquinolones.
- Ciprofloxacin is hyperlinked to the British National Formulary.
- For NHS medicines and MHRA information for healthcare professionals on ciprofloxacin, click here and here, respectively.
- For MHRA printable information for patients on fluoroquinolones, click here.

First Line	Piperacillin/Tazobactam 4.5g IV TDS (increased to QDS if concerns regarding *Pseudomonas aeruginosa*) **PLUS** If likely/known MRSA: Vancomycin IV, dosed as per hospital guidelines or Teicoplanin IV, dosed as per hospital guidelines
Second line (penicillin allergy)	Vancomycin IV, dosed as per hospital guidelines or Teicoplanin IV, dosed as per hospital guidelines **PLUS** Ciprofloxacin 400mg IV BD (increased to TDS if concerns regarding *Pseudomonas aeruginosa*) **PLUS** Metronidazole 500mg IV TDS
Alternative second line (penicillin allergy in pregnancy or where fluoroquinolones, e.g. Ciprofloxacin, are contraindicated)	Vancomycin IV, dosed as per hospital guidelines **PLUS** Aztreonam 1g IV TDS (increased to 2g QDS if concerns regarding *Pseudomonas aeruginosa*) **PLUS** Metronidazole 500mg IV TDS
Please note, aztreonam supplies are stocked in pharmacy. Therefore: • Liaise with pharmacy/pharmacist on call regarding the aztreonam prescription; and • Administer the teicoplanin before the aztreonam is supplied; and • Administer the metronidazole before the aztreonam is supplied; and • Administer the aztreonam as soon as possible.	