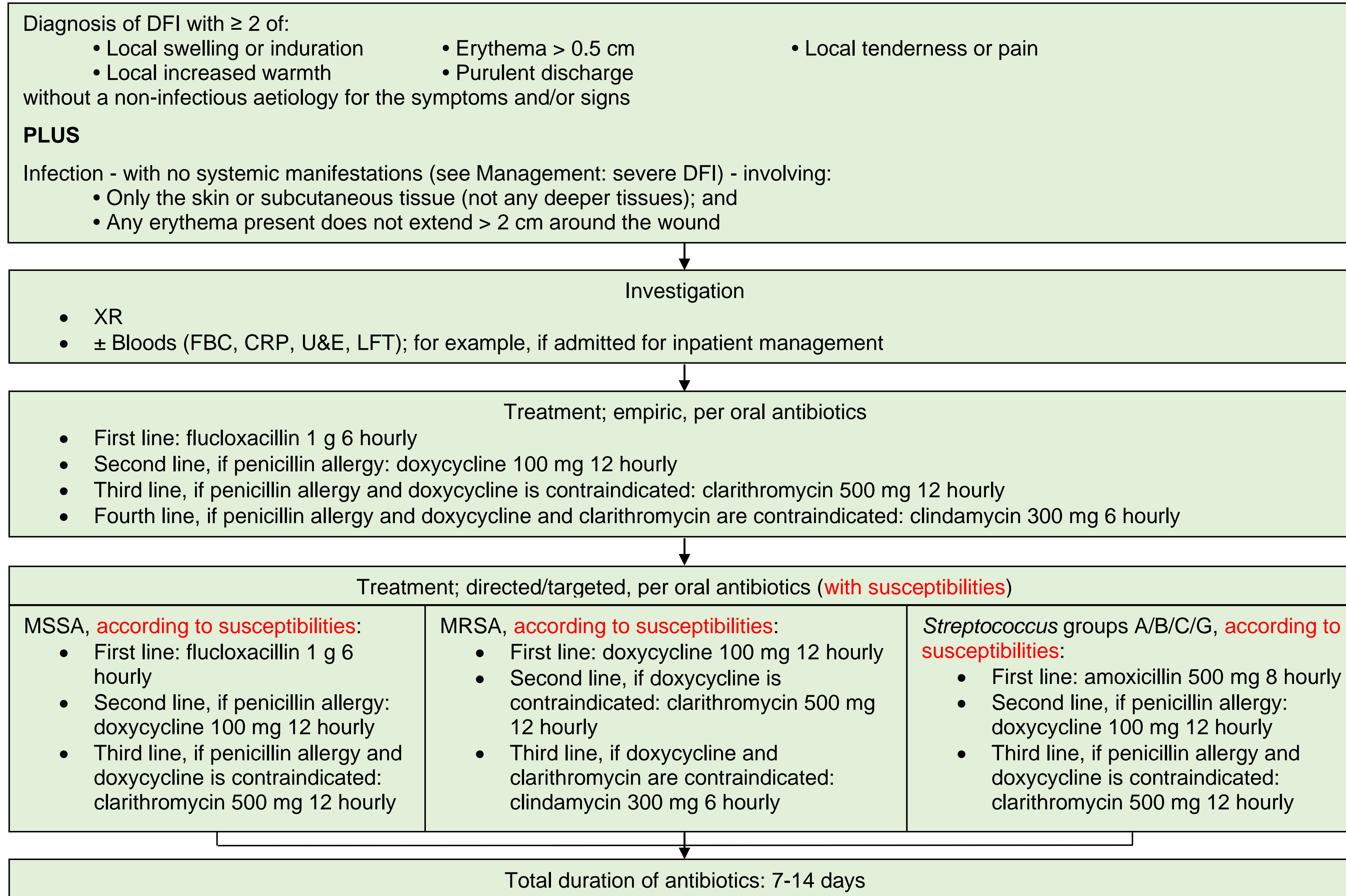
Diabetic Foot Infection - Microbiology Summary Clinical Guideline

Reference number: CG-ANTI/2023/049

Mild DFI



Moderate DFI

Diagnosis of DFI with ≥ 2 of:

- Local swelling or induration
- Erythema > 0.5 cm
- Local tenderness or pain
- Local increased warmth
- Purulent discharge

without a non-infectious aetiology for the symptoms and/or signs

PLUS

Infection - with no systemic manifestations (see Management: severe DFI) - involving:

- Erythema extending ≥ 2 cm from the wound margin; and/or
- Tissue deeper than skin and subcutaneous tissues (e.g. tendon, muscle, joint, bone)

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Investigation

- XR
- ± MRI (e.g. if the XR is negative and if clinical suspicions of DFIO, etc.)
- ± Bloods (FBC, CRP, U&E, LFT); for example, if admitted for inpatient management
- ± Aspirate or biopsy for microbiology (e.g. if there is clinical deterioration on empiric antibiotics)
- ± Biopsy for histopathology (e.g. if clinical uncertainty regarding diagnosis)

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Treatment; empiric, per oral antibiotics

- First line: co-amoxiclav 625 mg 8 hourly plus amoxicillin 500 mg 8 hourly
- Second line, if penicillin allergy:
  - If for inpatient management: metronidazole 400 mg 8 hourly and levofloxacin 500 mg 12 hourly
  - If for outpatient management: ciprofloxacin 500 mg 12 hourly and doxycycline 100 mg 12 hourly (or if doxycycline is contraindicated, ciprofloxacin 500 mg 12 hourly and clindamycin 300 mg 6 hourly)
- Third line, if penicillin allergy and levofloxacin/ciprofloxacin are contraindicated: metronidazole 400 mg 8 hourly and co-trimoxazole 960 mg 12 hourly:
  - With diabetes mellitus sequelae including diabetic nephropathy and with co-trimoxazole risks including electrolyte imbalance, interstitial nephritis, and renal tubular acidosis:
    - If for metronidazole and co-trimoxazole as an inpatient:
      - Monitoring of U&Es 24-48 hourly is mandatory
    - If for metronidazole and co-trimoxazole as an outpatient:
      - Monitoring of U&Es via the complex outpatient antibiotic therapy (COpAT) service is mandatory

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Treatment; directed/targeted antibiotics

- With susceptibilities (please note microbiology full clinical guideline pages 7 and 8)
- Total duration: without surgical intervention, 2-6 weeks

University Hospitals of Derby and Burton NHS Foundation Trust

Severe DFI

Diagnosis of DFI with ≥ 2 of:

- Local swelling or induration
- Erythema > 0.5 cm
- Local tenderness or pain
- Local increased warmth
- Purulent discharge

without a non-infectious aetiology for the symptoms and/or signs

PLUS

Any foot infection with associated systemic manifestations (of SIRS), as manifested by ≥ 2 of the following:

- Temperature > 38 ° C or < 36 ° C
- Heart rate > 90 beats/minute
- Respiratory rate > 20 breaths/minute or $PaCO_2$ < 4.3 kPa (32 mmHg)
- White blood cells > 12 x 10^9/l or < 4 x 10^9/l

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Investigation

- XR
- ± MRI (e.g. if the XR is negative and if clinical suspicions of DFIO, etc.)
- Bloods (FBC, CRP, U&E, LFT, lactate)
- Blood cultures
- Aspirate or biopsy for microbiology
- ± Biopsy for histopathology (e.g. if clinical uncertainty regarding diagnosis)

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Treatment; empiric, intravenous antibiotics

If the patient is clinically stable, post aspirate or biopsy:

- First line: co-amoxiclav 1.2 g 8 hourly
- Second line, if non-immediate without systemic involvement penicillin allergy: metronidazole 500 mg 8 hourly and cefuroxime 1.5 g 8 hourly
- Third line, if immediate rapidly evolving or non-immediate with systemic involvement penicillin allergy: metronidazole 500 mg 8 hourly and levofloxacin 500 mg 12 hourly

NB If clinical concerns regarding the risk of MRSA, add teicoplanin or vancomycin, dose as per hospital guidelines, teicoplanin target pre dose level 20-40 mg/l, vancomycin target pre dose level 15-20 mg/l

If the patient is clinically unstable (haemodynamic instability, sepsis, septic shock), preferably post aspirate or biopsy:

- First line: piperacillin tazobactam dose as per hospital guidelines; if clinical concerns re the risk of MRSA, add teicoplanin or vancomycin
- Second line, if non-immediate without systemic involvement penicillin allergy: metronidazole 500 mg 8 hourly and ceftazidime dose as per hospital guidelines and teicoplanin or vancomycin
- Third line, if immediate rapidly evolving or non-immediate with systemic involvement penicillin allergy: metronidazole 500 mg 8 hourly and ciprofloxacin dose as per hospital guidelines and teicoplanin or vancomycin

Teicoplanin or vancomycin, dose as per hospital guidelines, vancomycin target pre dose level 15-20 mg/l, teicoplanin target pre dose level 20-40 mg/l

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Treatment; directed/targeted antibiotics

- With susceptibilities (please note microbiology full clinical guideline pages 7 and 8)
- Total duration: without surgical intervention, in general, 6 weeks