NHS
Greater Glasgow and Clyde

CLINICAL GUIDELINE

Diabetes, Diabetic Foot Infections Outpatient Management in Adults (≥ 18 years)

A guideline is intended to assist healthcare professionals in the choice of disease-specific treatments.

Clinical judgement should be exercised on the applicability of any guideline, influenced by individual patient characteristics. Clinicians should be mindful of the potential for harmful polypharmacy and increased susceptibility to adverse drug reactions in patients with multiple morbidities or frailty.

If, after discussion with the patient or carer, there are good reasons for not following a guideline, it is good practice to record these and communicate them to others involved in the care of the patient.

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Important Note:

The Intranet version of this document is the only version that is maintained.
Any printed copies should therefore be viewed as 'Uncontrolled' and as such, may not necessarily contain the latest updates and amendments.

Outpatient Management of Diabetic Foot Infections in adults (age ≥ 18 years)

Good Practice Points

- Diabetic foot infections should be managed in conjunction with a specialist MDT including specialists in diabetes, podiatry, infection and vascular surgery
- Patients with severe infection (progressing despite first line antibiotics or with systemic signs of infection) should be reviewed urgently by a medical practitioner and considered for inpatient management or (if appropriate and no signs of systemic infection) to the OPAT service (see *appendix* for referral criteria)
- PRIOR to commencing antibiotic therapy for osteomyelitis:
  - Ensure wound swabs have been taken appropriately: *Wound swabs are not reliable for detecting the causative pathogen(s) in osteomyelitis and should not be used in isolation to guide therapy. If a diabetic foot infection is suspected and a wound is present, send a soft tissue or bone sample from the base of the debrided wound for microbiological examination. If this cannot be obtained, take a deep swab as it may provide useful information on the choice of antibiotic treatment.*
  - Review and consider current and prior (6 months) microbiology isolates and sensitivity
  - Consider antibiotic oral bioavailability, bone penetration, allergy/tolerability history, renal and hepatic function and drug-drug/drug-food interactions
- Discuss treatment with an infection specialist* prior to initiating therapy for osteomyelitis if:
  - Current or previous positive microbiology
  - Recurrent osteomyelitis or antibiotic therapy in previous 6 months
  - Recommended empirical antibiotics are contra-indicated due to allergy, co-morbidities or drug interactions
- All patients receiving treatment for osteomyelitis should be highlighted to the diabetes team to ensure ongoing review of culture/sensitivity results, tolerability of therapy and laboratory/ECG monitoring when required.
- Referral to OPAT is appropriate for some patients with diabetic foot infections requiring IV or complex oral antibiotic therapy (see *appendix*)

In the absence of positive microbiology use the following empirical guidance

	Empirical Antibiotic Choice and Duration	Additional Comments
Localised non-severe Cellulitis Duration: 7 days and review response	As per Scottish Diabetes Foot Action Group Guidance **Oral Flucloxacillin 1g 6 hrly*** *Or if true penicillin/β lactam allergy:* ***Oral Doxycycline 100mg 12 hrly**** Or **Co-trimoxazole 960mg 12 hrly***	**ALWAYS review patient's concomitant medication for drug interactions and counsel patient regarding potential side-effects.** Use the British National formulary or Stockley's Drug Interaction Checker available via Staffnet or contact Pharmacy. **Doxycycline** absorption reduced with multivalent cations e.g. Ca^{2+}, Mg^{2+} iron preparations and some nutritional supplements. This risks treatment failure. Withhold cation preparations or ensure doses separated to minimise effect-see BNF (oral iron MUST be withheld). Note associated risk of photosensitivity reactions and oesophageal ulceration – refer to BNF. **Clindamycin** associated with increased risk of *C.difficile* infection, particularly if age >65. Avoid if previous *C.diff*. Patient should stop if diarrhoea occurs and discuss urgently with diabetic foot team. Monitor LFTs, FBC and renal function for courses >10 days. **Co-trimoxazole** should be avoided if Creatinine clearance <30 mls/min. Use with caution with ace inhibitors due to hyperkalaemia risk. Monitor renal function and FBC for courses >7 days. Ensure weekly monitoring for a minimum of 2 weeks after initiation (see *appendix*) **NB. Oral flucloxacillin** has no place in osteomyelitis treatment as suboptimal oral absorption (which is further reduced by administration with food)
Non-acute Osteomyelitis Duration: 6 weeks (highlight to diabetes team for review)	**Doxycycline 100mg 12 hrly*** Or **Clindamycin 600mg 8 hrly*** Or **Co-trimoxazole 960mg 12 hrly***	

* Microbiology: North & Clyde 0141 201 8551 (18551), South 0141 354 9132 (89133), QEUH DFI MDT patients – contact Dr Beth White or Dr Neil Ritchie via email/switchboard

* Unlicensed dose for diabetic foot infections

Appendix: **Podiatry (Foot Protection Team) referral to OPAT**

Diabetic patients should be managed through the diabetic foot MDT process. For non-diabetic patients with osteomyelitis please ensure appropriate pressure redistribution is in place and consider if there is a need for onward referral to a surgical team prior to, or in parallel to, OPAT referral. Suspected osteomyelitis responding to guideline oral antibiotics and monitored by multidisciplinary diabetic foot team does not require to be referred to OPAT. If a case needs to be discussed outside of these criteria please email: opat@ggc.scot.nhs.uk or phone 83017 /0141 452 3017

1. **Lower limb/ foot Cellulitis with or without an associated foot ulcer. Refer OPAT if:**

    a. Significant heat and erythema and progression **despite** oral Flucloxacillin 1g 6 hourly or Doxycycline 100mg 12 hourly or Co-trimoxazole 960mg 12 hrly
    b. Review inclusion/ exclusion criteria below* and NHS GGC Skin and Soft tissue infection OPAT referral criteria 1049-oapt-for-ssti-fp.pdf (nhsggc.org.uk)
    c. Refer via Trakcare **OPAT cellulitis** option if there is no foot ulcer and meets criteria and no exclusion criteria
    d. Refer via Trakcare **OPAT non-cellulitis** option if there is an associated foot ulcer and meets criteria and no exclusion criteria
    e. On the referral please clearly indicate:
        i. if an ulcer is present
        ii. any outstanding imaging/ other investigations
        iii. status of vascular surgery/ orthotics referral/ review if relevant

2. **Foot ulcer with suspected underlying osteomyelitis. Refer OPAT if:**

    a. Progression of foot ulceration / failure despite appropriate antibiotic therapy
    b. Isolation of antibiotic resistant organism which limits oral antibiotic options
    c. Planned antibiotics require close toxicity monitoring (e.g. linezolid/co-trimoxazole)
    d. Antibiotic allergies or adverse events which limit oral antibiotic options
    e. Review inclusion/ exclusion criteria below*

OPAT referral criteria

May be suitable for OPAT if:

No uncontrolled co-morbidities requiring in-patient assessment

And

Mild systemic illness **(e.g. NEWS 0-1)**

Or

Well with condition complicating or delaying infection resolution, e.g. peripheral vascular disease, chronic venous insufficiency or morbid obesity

Patient ambulant and self-caring or has appropriate carer support and access to OPAT does not delay treatment

OPAT Exclusion Criteria

Patients in these groups not eligible for OPAT:

- ❑ Under 16 years
- ❑ Pain out of proportion to skin changes, or skin changes that are rapidly evolving or blistering
- ❑ Unstable co-morbidities, e.g. AKI, cardiac decompensation or uncontrolled blood sugars
- ❑ Current *Clostridioides difficile* infection
- ❑ Other medical problems requiring in-patient management