NHS
Greater Glasgow and Clyde

CLINICAL GUIDELINE

Endocarditis: Antibiotic guideline for Partial Oral Endocarditis Therapy

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.

Version Number:	1
Does this version include changes to clinical advice:	N/A
Date Approved:	17th February 2026
Date of Next Review:	28th February 2029
Lead Author:	Peter Davies
Approval Group:	Antimicrobial Utilisation Subcommittee
Guideline ID number:	1269

Important Note:

The online 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.

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AIM/OBJECTIVE OF GUIDELINE

This guideline covers the use of partial oral antimicrobial treatment for infective endocarditis

BACKGROUND

Oral antimicrobial chemotherapy for endocarditis is now an established practice. However, appropriate patient selection and follow up must be ensured under direct supervision of infection specialists and cardiology.

SCOPE

Use of these regimes should be agreed either in a GGC endocarditis MDT, or via OPAT in discussion with Cardiology.

ROLES/RESPONSIBILITIES

This guideline is to aid antibiotic decisions in endocarditis cases made by infection specialists (consultants or senior registrars), in conjunction with the consultant cardiology colleagues and antimicrobials pharmacists. It is **not** to be used out with this MDT and in the above setting.

GUIDELINE

Patients can be considered for oral providing the following factors are fulfilled: [5,7,8]

1. **Clinically stable:**

   a. Subjective clinical assessment
   b. CRP <25% of peak; or <20mg/L
   c. WCC <15x10^9/L
   d. Afebrile 48 hours (<38°C)
   e. Clearance blood cultures at 48 hours incubation

2. **No adverse patient factors:**

   a. BMI <40kg/m^2
   b. No significant issues with compliance
   c. No reason to suspect impaired absorption
   d. Able to attend OPAT/ outpatient bloods for monitoring

3. **Treatment factors achieved:**

   a. At least 10 days of IV Antibiotic lead in
   b. At least 7 days of IV Antibiotic following cardiac surgery

4. **No adverse cardiology factors:**
   a. Vegetation <10mm
   b. No aortic root abscess
   c. No deterioration of the valve that would result in surgery
   d. Trans-oesophageal ECHO performed prior to oral switch; unless not required (excellent TTE images) or impractical (clinical factors) following discussion with cardiology team.

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The most appropriate regime will be based on unique patient factors; e.g. renal/hepatic function, drug co-administration etc. This decision will be made in a multidisciplinary approach, in the endocarditis MDT, or in sites without access to this via OPAT in discussion with cardiology. These discussions and fulfilment of the above are to be recorded on portal, as routine. The choices of agents are outlined in Table 1, below.

Microbiology factors:
If the target organism is a viridans group streptococcus or an enterococcus, additional reporting may be required from microbiology. If the patient is a possible POET candidate, then consider early discussion, as required, to report rifampicin or fluoroquinolone MICs (e.g. where Linezolid is likely to be contraindicated or not tolerated).

When considering discharge home:

1. Ensure referral to OPAT is made promptly. Patients will receive weekly monitoring of bloods, regardless of antimicrobial agent, and clinical review as required
2. Ideally patients should receive 24 hours of inpatient treatment with the assigned PO regime to ensure tolerability
3. Follow up with cardiology or infectious diseases should be arranged; per MDT/OPAT outcome.
    a. The urgency/timings of post-treatment ECHO should be defined by the cardiologists, on the endocarditis MDT or named cardiologist, based on clinical parameters. A proposed date of the follow-up ECHO should be documented e.g. "**week commencing dd/mm/yy.**"
    b. OP ECHO post-treatment, if not performed within a cardiology clinic or reviewed by a cardiologist, should be brought back to the endocarditis MDT or directly discussed with the named cardiologist (as above, if not accessing the MDT).
    c. Non-GGC patients will not routinely be followed-up by local cardiology services. Specific arrangements would be required with their own regional cardiology teams.

Table 1: *Oral antimicrobial regimes for endocarditis treatment, with reference to susceptibility testing of isolates. The choice of agents documented on clinical portal at the endocarditis MDT with the GGC Endocarditis MDT proforma (EUCAST).*[1]
** Post cardiac surgery: No evidence of disseminated disease.*
**** Lower doses may be considered in select patients e.g. frail, renal disease; wherein consider adjunctive clindamycin.*[2]

Organism	Antimicrobial chemotherapy	Total duration of antimicrobials
Staphylococci	Linezolid 600mg PO BD [3,6] OR Flucloxacillin 1g qds PO (MSSA only) PLUS Rifampicin 600mg od PO [3,5,6,7,8] OR Levofloxacin 500mg PO BD PLUS Rifampicin 600mg PO OD [3,6] OR	Native valve: 4-6 weeks Prosthetic valve: 6 weeks Post-cardiac surgery:* As above with minimum of 2 weeks post-op (valve culture

	Co-trimoxazole 1920mg bd PO [2,3,6] (limited evidence for monotherapy) *** OR Clindamycin 600mg tds PO (900mg tds if BMI >30kg/m^2) (no prior studies)	negative)
Streptococci	**<u>Penicillin Sensitive Streptococci (MIC <0.12mcg/ml):</u>** Amoxicillin 1g PO QDS (native valve only) [3,4,6] **<u>Penicillin Intermediate Streptococci (MIC 0.12-1mcg/ml)</u>** Amoxicillin 1g PO QDS PLUS Rifampicin 600mg PO OD (Rif MIC <u>≤</u>0.25mcg/ml) [3,5,6,7,8] **<u>Penicillin Resistant Streptococci OR (MIC >1mcg/L):</u>** Linezolid 600mg PO BD (Strep viridans MIC <2mcg/ml) [3,6] OR Moxifloxacin 400mg PO OD (Strep viridans MIC <0.5mcg/ml [3,5,6,8]) PLUS Rifampicin 600mg PO OD (Rif MIC <u>≤</u>0.25mcg/ml)	Native valve Streptococci: 4 weeks Prosthetic valve Streptococci: 6 weeks Post-cardiac surgery:* As above with minimum of 2 weeks post-op (valve culture negative)
Enterococcus	Amoxicillin 1g PO QDS PLUS Rifampicin 600mg PO OD OR Linezolid 600mg PO BD OR Moxifloxacin 400mg PO OD (MIC <1mcg/ml [3,6]) PLUS Rifampicin 600mg PO OD	Native or prosthetic valve: 6 weeks Post-cardiac surgery:* As above with minimum of 2 weeks post-op (valve culture negative)

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Approved by : Antimicrobials Utilisation Committee
Review date: February 2029