

**Cardiac Device – Antibiotic Prophylaxis for Insertion – for use in  
 Cardiac Catheter Suite – Full Clinical Guideline**

Reference no.: CG-ANTI/2018/052

**Introduction**

Implantable cardiac electronic devices have intravascular and extravascular components and infection may arise in any of the structures. Cardiac device related infections can be life-threatening, particularly if associated with endocardial infection. Such infections may be difficult to diagnose and manage; therefore this guidance provides recommendations on prophylaxis required prior to the procedure.

**Background**

The commonest causes for implantable cardiac electronic devices infections are coagulase-negative staphylococci and *Staphylococcus aureus*. Some cases are caused by Gram-negative bacilli. Fungal infection is uncommon, occurring in no more than 2% of patients. The below prophylactic regime provides necessary cover for potential causative organisms.

**Antibiotic Prophylaxis Recommendations**

Procedure	First line	For patients who are Teicoplanin allergic
<b>Antibiotic Prophylaxis for All Device Procedures (excluding loop removal)</b>	Teicoplanin IV 400mg (patients 70kg or below) OR Teicoplanin IV 800mg (patients over 70kg)  TO BE GIVEN in 100ml NaCl 0.9% OVER 30min WITHIN 1 hour OF THE START OF THE PROCEDURE (optimal timeframe)  ± IV BOLUS OF:  Gentamicin IV 1.5mg/kg	Linezolid 600mg IV  TO BE GIVEN as an IV infusion OVER 30 minutes WITHIN 1 hour OF THE START OF THE PROCEDURE (optimal timeframe).  ± IV BOLUS OF:  Gentamicin IV 1.5mg/kg  <b>NB: Linezolid is contraindicated in those taking monoamine oxidase inhibitors, serotonin re-uptake inhibitors, tricyclic antidepressants, sympathomimetic agents, vasopressive agents, pethidine or buspirone. Its use is also contraindicated in: uncontrolled hypertension, phaeochromocytoma, carcinoid, thyrotoxicosis, bipolar depression, schizoaffective disorder, acute confusional states.</b>

**NB: Patients do not require post procedure antibiotics**

Any concerns / questions to be discussed with a Consultant Microbiologist or Antimicrobial Pharmacist

## References

- Guidelines for the diagnosis, prevention and management of implantable cardiac electronic device infection. Report of a joint working party project on behalf of the British Society for Antimicrobial Chemotherapy (BSAC), British Heart Rhythm Society (BHRS), British Cardiovascular Society (BCS), British Heart Valve Society (BHVS) and British Society for Echocardiography (BSE). J Antimicro Chemother 2015;70:325-359
- Lee WH et al Efficacy of postoperative prophylactic antibiotic in reducing permanent pacemaker infections. Clin Cardiol 2017;40(8):559-565
- Korantzopoulos P et al. Infection control in implantation of cardiac implantable electronic devices:current evidence, controversial points, and unresolved issues Europace 2016;18:473-478
- BNF Online – Accessed online on 21/09/2021
- Antibiotic Prophylaxis in Implantable Cardiac Electronic Device (ICED) Insertion. NHS Tayside Antimicrobial Management Group/Cardiology. May 2019. Accessed 21/09/2021 [ANTIBIOTIC PROPHYLAXIS IN SURGERY \(scot.nhs.uk\)](https://www.scot.nhs.uk/antibiotic-prophylaxis-in-surgery)
- Adult Antibiotic Prophylaxis in Permanent Pacemaker Insertion/Implantable Cardiac Devices. NHS Lanarkshire June 2019. Accessed 21/09/2021 [MPR-APPPIC-19\\_13239-L-450721-24-09-2019.pdf \(medednhsl.com\)](https://www.mpr-apppic-19-13239-l-450721-24-09-2019.pdf)
- Karchmer, AW and Chu, VH (UpToDate). Infections involving cardiac implantable electronic devices: Treatment and Prevention (2021). Accessed 24/09/2021. Available from: [Infections involving cardiac implantable electronic devices: Treatment and prevention - UpToDate](#)

## Documentation Controls

Development of Guideline:	Kayleigh Lehal – Antimicrobial Pharmacist
Consultation with:	Cardiology consultants Microbiology consultants
Approved By:	Antimicrobial Stewardship Group – 15/11/2021 Cardiology Consultants – 17/12/2021 Medicine – 11/01/2022
Changes from previous version	Second line option switched to linezolid from flucloxacillin, as flucloxacillin's bacterial spectrum is not completely similar to teicoplanin. Option for ± bolus of IV gentamicin
Review Date:	January 2025
Key Contact:	Kayleigh Lehal – Antimicrobial Pharmacist <a href="mailto:kayleigh.lehal@nhs.net">kayleigh.lehal@nhs.net</a>  Peter Slovak – Consultant Microbiologist – <a href="mailto:peter.slovak@nhs.net">peter.slovak@nhs.net</a>