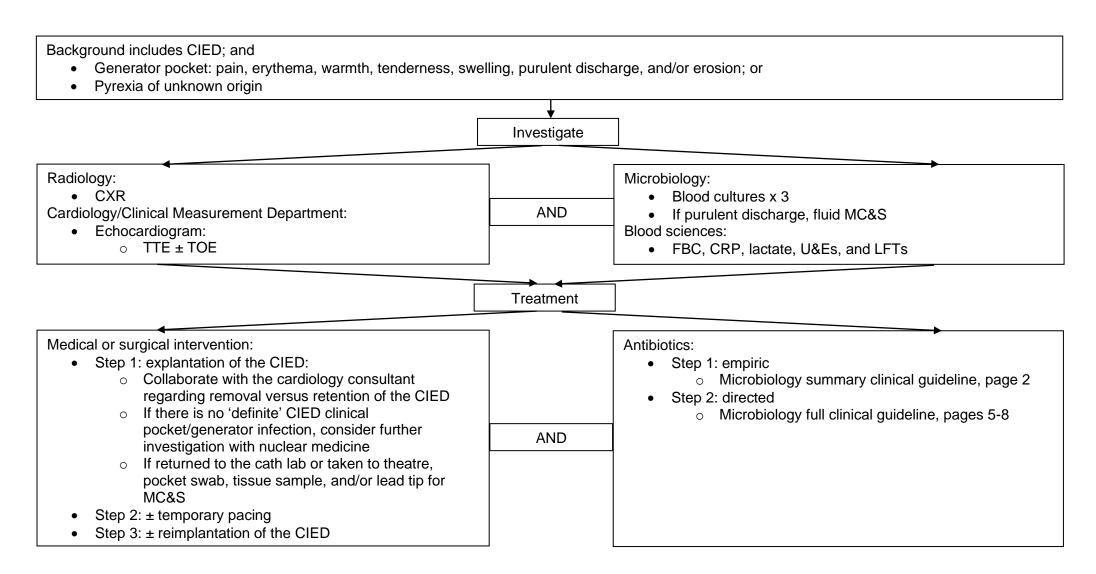


## Cardiac Implantable Electronic Device Pocket Infection - Microbiology Summary Clinical Guideline

Reference number: CG-ANTI/3476/24





### Empiric antibiotics: no clinical concerns regarding sepsis

First line	Vancomycin or teicoplanin intravenously, dose as per hospital guidelines, vancomycin target pre dose level 15-20 mg/l, teicoplanin		
	target pre dose level 30-40 mg/l, and		
	Gentamicin 3 mg/kg intravenously 24 hourly (NB maximum of 240 mg), target pre dose trough < 1 mg/l, and		
	Rifampicin 300-600* mg per oral 12 hourly		
Second	Daptomycin 8-10 mg/kg intravenously 24 hourly <b>and</b>		
line	Gentamicin 3 mg/kg intravenously 24 hourly (NB maximum of 240 mg), target pre dose trough < 1 mg/l, and		
	Rifampicin 300-600* mg per oral 12 hourly		
* Rifampicin 300 mg if creatinine clearance < 30 ml/min, 600 mg if creatinine clearance ≥ 30 ml/min			

# Empiric antibiotics: clinical concerns regarding sepsis (life threatening organ dysfunction caused by a dysregulated host immune response to infection) secondary to pocket infection

First line	Piperacillin tazobactam 4.5 g intravenously 6 hourly <b>and</b>
	Vancomycin or teicoplanin intravenously, dose as per hospital guidelines, vancomycin target pre dose level 15-20
	mg/l, teicoplanin target pre dose level 30-40 mg/l
Second line, if non-	Ceftazidime 2 g intravenously 8 hourly <b>and</b>
immediate without	Vancomycin or teicoplanin intravenously, dose as per hospital guidelines, vancomycin target pre dose level 15-20
systemic involvement	mg/l, teicoplanin target pre dose level 30-40 mg/l
penicillin allergy	
Third line, if immediate	Ciprofloxacin 400 mg intravenously 8 hourly and
rapidly evolving or non-	Vancomycin or teicoplanin intravenously, dose as per hospital guidelines, vancomycin target pre dose level 15-20
immediate with systemic	mg/l, teicoplanin target pre dose level 30-40 mg/l
involvement penicillin	
allergy	



### **References**

**Bennett, J. E., et al.** 2015. Mandell, Douglas, and Bennett's Principles and Practice of Infectious Diseases, 8<sup>th</sup> Edition. Elsevier.

Blomstrom-Lundqvist, C., et al. 2020. European Heart Rhythm Association (EHRA) international consensus document on how to prevent, diagnose, and treat cardiac implantable electronic device infections-endorsed by the Heart Rhythm Society (HRS), the Asia Pacific Heart Rhythm Society (APHRS), the Latin American Heart Rhythm Society (LAHRS), International Society for Cardiovascular Infectious Diseases (ISCVID) and the European Society of Clinical Microbiology and Infectious Diseases (ESCMID) in collaboration with the European Association for Cardio-Thoracic Surgery (EACTS). European Heart Journal. Gould, F. K., et al. 2012. Guidelines for the diagnosis and antibiotic treatment of endocarditis in adults: a report of the Working Party of the British Society for Antimicrobial Chemotherapy. Journal of Antimicrobial Chemotherapy.

**Habib, G., et al.** 2023. 2023 ESC Guidelines for the management of endocarditis. European Heart Journal.

**Karchmer, A. W. et al.** 2022. Infections involving cardiac implantable electronic devices: Epidemiology, microbiology, clinical manifestations, and diagnosis. Available at: Infections involving cardiac implantable electronic devices: Epidemiology, microbiology, clinical manifestations, and diagnosis - UpToDate.

**Karchmer, A. W. et al.** 2021. Infections involving cardiac implantable electronic devices: Treatment and prevention. Available at:

<u>Infections involving cardiac implantable electronic devices: Treatment and prevention - UpToDate.</u>

Sandoe, J. A. T., et al. 2015. 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, host organization), British Heart Rhythm Society (BHRS), British Cardiovascular Society (BCS), British Heart Valve Society (BHVS) and British Society for Echocardiography (BSE). Journal of Antimicrobial Chemotherapy.

#### **Document control**

Development of guidelines:	Ellie Birnie, Kayleigh Lehal, Dr Peter Slovak
Consultation with:	Lead Antimicrobial Pharmacists, Microbiology Consultant
Version:	2.1
Approval date:	Medicine Division October 2024
Changes from previous version:	Modification of "gentamicin 1 mg/kg intravenously 12 hourly, target pre dose trough < 1 mg/l and target post dose peak 3-5 mg/l" to "gentamicin 3 mg/kg intravenously 24 hourly (NB maximum of 240 mg), target pre dose trough < 1 mg/l".  Modification of refences to include 2023 ESC Guidelines for the management of endocarditis.  Modification of document control to include Ellie Birnie.
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