

# Infections associated with implantable cardiac electronic devices (ICEDs): microbiology study and analysis of management practices.

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**Background.** The rate of patients with ICEDs is increasing. Infection is a major complication of the use of ICEDs. The aim of our study was to determine microbial epidemiology of ICEDs infections and to evaluate practices in one French regional reference center for ICEDs management.

**Patients and methods.** We conducted a monocentric retrospective observation study involving 100 consecutive patients admitted for ICED infection at a large private cardiac center for a five-year period (June 2011-June 2016). The list of patients was obtained from the Department of Medical Informatics.

**Results.** The mean age of patients was 77 years (39-95), 77% were male. Infections involved pacemakers in 83% of cases and defibrillators in 17%. Endocarditis was diagnosed in 28% of cases. The complete device removal was carried out in all cases. Blood cultures were performed in only 52 patients and were positive for 28. Among 160 cultures obtained from distal portion of the leads, 123 were positive. About 40% of CNS and 20% of *S. aureus* were resistant to methicillin. According to subsequent cultures results, empirical treatment was effective in only 59.4% of cases.

**Conclusion.** These data highlight the importance of knowledge of the local microbial ecology of ICEDs infections to better target probabilistic treatment. As an extension of this study, a survey of the management of ICEDs infections in different European countries could be interesting.



Bacteria involved in ICEDs

Antimicrobial agents used for empirical treatment