Issue date: January 2006
Review date: July 2007

NHS
National Institute for Health and Clinical Excellence

Quick reference guide

Implantable cardioverter defibrillators for arrhythmias

NOTE: This guidance replaces Technology Appraisal Guidance No. 11 issued in September 2000.

The Institute reviews each piece of guidance it issues.

The review and re-appraisal of the use of implantable cardioverter defibrillators (ICDs) for arrhythmias has resulted in a change in the guidance. The recommendation on the use of ICDs for the primary prevention of sudden cardiac death (SCD) has been expanded to include patients with a left ventricular ejection fraction (LVEF) of less than 30% (no worse than class III of the New York Heart Association functional classification of heart failure) and a QRS duration of equal to or more than 120 milliseconds, without the need for electrophysiological testing. It also includes patients who have undergone surgical repair for congenital heart conditions.

1 Guidance

This appraisal does not cover the use of implantable defibrillators for non-ischaemic dilated cardiomyopathy.

1.1 ICDs are recommended for patients in the following categories.

1.1.1 Secondary prevention[1], that is, for patients who present, in the absence of a treatable cause, with one of the following:

- having survived a cardiac arrest due to either ventricular tachycardia (VT) or ventricular fibrillation (VF)
- spontaneous sustained VT causing syncope or significant haemodynamic compromise
- sustained VT without syncope or cardiac arrest, and who have an associated reduction in ejection fraction (LVEF of less than 35%) (no worse than class III of the New York Heart Association functional classification of heart failure).

1.1.2 Primary prevention[2], that is, for patients who have:

- a history of previous (more than 4 weeks) myocardial infarction (MI) and:

  either

  – left ventricular dysfunction with an LVEF of less than 35% (no worse than class III of the New York Heart Association functional classification of heart failure) **and**

  – non-sustained VT on Holter (24-hour electrocardiogram [ECG]) monitoring **and**

  – inducible VT on electrophysiological (EP) testing

  or

  – left ventricular dysfunction with an LVEF of less than 30% (no worse than class III of the New York Heart Association functional classification of heart failure) **and**

  – QRS duration of equal to or more than 120 milliseconds

[1] Secondary prevention of SCD is defined as the prevention of an additional life-threatening event in survivors of sudden cardiac events or in patients with recurrent unstable rhythms.

[2] Primary prevention of SCD is defined as prevention of a first life-threatening arrhythmic event.

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This guidance is written in the following context

This guidance represents the view of the Institute, which was arrived at after careful consideration of the available evidence. Healthcare professionals are expected to take it fully into account when exercising their clinical judgement. This guidance does not, however, override the individual responsibility of healthcare professionals to make appropriate decisions in the circumstances of the individual patient, in consultation with the patient and/or guardian or carer.

- a familial cardiac condition with a high risk of sudden death, including long QT syndrome, hypertrophic cardiomyopathy, Brugada syndrome or arrhythmogenic right ventricular dysplasia (ARVD), or have undergone surgical repair of congenital heart disease.

2 Implementation

This appraisal is supported by the following implementation tools available on our website (www.nice.org.uk/TA095).

Costing tools:

- a national costing report, which estimates the overall resource impact associated with implementation
- a local costing template; a simple spreadsheet that can be used to estimate the local cost of implementation.

Suggestions for audit to measure compliance locally can be found in the full guidance (see 'Further information').

Further information

Quick reference guide

This has been distributed to healthcare professionals working in the NHS in England and Wales (see www.nice.org.uk/TA095distributionlist). It is available from www.nice.org.uk/TA095quickrefguide

For printed copies, phone the NHS Response Line on 0870 1555 455 (quote reference number N0973).

Full guidance

This contains the following sections: 1 Guidance; 2 Clinical need and practice; 3 The technology; 4 Evidence and interpretation; 5 Recommendations for further research; 6 Implications for the NHS; 7 Implementation and audit; 8 Related guidance; 9 Review of guidance. The full guidance also gives details of the Appraisal Committee, the sources of evidence considered and suggested criteria for audit. It is available from www.nice.org.uk/TA095guidance

Information for the public

Information for people with arrhythmias, their families and carers, and the public is available from www.nice.org.uk/TA095publicinfo

For printed copies, phone the NHS Response Line on 0870 1555 455 (quote reference number N0974).

Related guidance

For information about NICE guidance that has been issued or is in development, see the website (www.nice.org.uk).

Dual-chamber pacemakers for the treatment of symptomatic bradycardia. *NICE technology appraisal* no. 88 (2005). Available from: www.nice.org.uk/TA088

Chronic heart failure. *NICE clinical guideline* no. 5 (2003). Available from: www.nice.org.uk/CG005

Heart failure – biventricular pacing (cardiac resynchronisation). *NICE technology appraisal* (expected date of publication March 2007).

Published by the National Institute for Health and Clinical Excellence, January 2006; ISBN 1-84629-143-7

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N0973 1P 30k Jan 06