The Implantable Defibrillator
From Concept to Clinical Reality

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Glossary

ACC                        American College of Cardiology
ACE                        Angiotensin-converting enzyme
ADFT                       Atrial defibrillation threshold
AHA                        American Heart Association
AI                         Aortic insufficiency
AICD                       Automatic implantable cardioverter defibrillator (Intec, later CPI)
AID                        Automatic implantable defibrillator (Intec)
AF                         Atrial fibrillation
AMI                        Acute myocardial infarction
ARDS                       Acute respiratory distress syndrome
ARVD                       Arrhythmogenic right ventricular disease
ASA                        Acetylsalicylic acid
ATN                        Acute tubular necrosis
ATP                        Antitachycardia pacing
AV                         Atiroventricular
AVID                       Antiarrhythmics versus implantable defibrillators
AVJ                        Atrioventricular junction
BBB                        Bundle branch block
BOL                        Beginning of life
CAGB                       Coronary artery bypass graft
CAD                        Coronary artery disease
CASH                       Cardiac arrest study, Hamburg
CAST                       Cardiac Arrhythmias Suppression Trial
CBH                        Complete heart block
CHF                        Congestive heart failure
CHF-STAT                   Congestive Heart Failure Survival Trial of Antiarrhythmic Therapy
CIDS                       Canadian Implantable Defibrillator Study
CMP                        Cardiomyopathy
COPD                       Chronic obstructive pulmonary disease
CPI                        Cardiac Pacemakers Inc. (now Guidant)
DFT                        Defibrillation threshold testing
ECG                        Electrocardiogram
EF                         Ejection fraction
<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>EGM</td>
<td>Electrogram</td>
</tr>
<tr>
<td>ERI</td>
<td>Elective replacement index or indicator</td>
</tr>
<tr>
<td>ERT</td>
<td>Elective replacement</td>
</tr>
<tr>
<td>VI</td>
<td></td>
</tr>
<tr>
<td>ESC</td>
<td>European Society of Cardiology</td>
</tr>
<tr>
<td>ESVEM</td>
<td>Electrophysiologie Study versus Electrocardiographic Monitoring</td>
</tr>
<tr>
<td>FS</td>
<td>Fibrillation sensed</td>
</tr>
<tr>
<td>FVT</td>
<td>'Fast' ventricular tachycardia</td>
</tr>
<tr>
<td>HOCM</td>
<td>Hypertrophic obstructive cardiomyopathy</td>
</tr>
<tr>
<td>HRV</td>
<td>Heart rate variability</td>
</tr>
<tr>
<td>HTX</td>
<td>Heart transplantation</td>
</tr>
<tr>
<td>ICD</td>
<td>Implantable cardioverter defibrillator</td>
</tr>
<tr>
<td>IVR</td>
<td>Idioventricular rhythm</td>
</tr>
<tr>
<td>LP</td>
<td>Late potentials</td>
</tr>
<tr>
<td>LV</td>
<td>Left ventricle</td>
</tr>
<tr>
<td>MI</td>
<td>Myocardial infarction</td>
</tr>
<tr>
<td>Miracles</td>
<td>Myocardial Infarction Risk Recognition and Conversion of Life-Threatening Events into Survival</td>
</tr>
<tr>
<td>MVT</td>
<td>Monomorph ventricular tachycardia</td>
</tr>
<tr>
<td>NI</td>
<td>Noninducible</td>
</tr>
<tr>
<td>NYHA</td>
<td>New York Heart Association</td>
</tr>
<tr>
<td>OOHA</td>
<td>Out-of-hospital (cardiac) arrest</td>
</tr>
<tr>
<td>PCD</td>
<td>Pacemaker cardioverter defibrillator (Medtronic)</td>
</tr>
<tr>
<td>PDF</td>
<td>Probability density function</td>
</tr>
<tr>
<td>PLOF</td>
<td>Potential loss of functioning</td>
</tr>
<tr>
<td>ppm</td>
<td>Pulses per minute</td>
</tr>
<tr>
<td>PTCA</td>
<td>Percutaneous transluminal coronary angioplasty</td>
</tr>
<tr>
<td>PV</td>
<td>Predictive value</td>
</tr>
<tr>
<td>PVT</td>
<td>Polymorphic ventricular tachycardia</td>
</tr>
<tr>
<td>RA</td>
<td>Right atrium</td>
</tr>
<tr>
<td>RDI</td>
<td>Rate detection interval</td>
</tr>
<tr>
<td>RPD</td>
<td>Reversible perfusion defects</td>
</tr>
<tr>
<td>RV</td>
<td>Right ventricle</td>
</tr>
<tr>
<td>RVA</td>
<td>Right ventricular apex</td>
</tr>
<tr>
<td>SAVE</td>
<td>Survival and Ventricle Enlargement Study</td>
</tr>
<tr>
<td>SMVT</td>
<td>Sustained monomorph ventricular tachycardia</td>
</tr>
<tr>
<td>SQ</td>
<td>Subcutaneous (often in combination with patch)</td>
</tr>
<tr>
<td>SOLVD</td>
<td>Study of Left Ventricle Dysfunction</td>
</tr>
<tr>
<td>SVC</td>
<td>Superior vena cava</td>
</tr>
</tbody>
</table>
| SVT          | Supraventricular tachycardia; sometimes used for sustained ventricular
tachycardia
TdP Torsades de pointes, polymorphic VT with a long QT
TS Tachycardia sensed
VF Ventricular fibrillation
VP Ventricular pace
VS Ventricular sense
VT Ventricular tachycardia
WHO World Health Organization
WPW Wolff-Parkinson-White

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Preface

Cardiology has progressed extraordinarily in recent years and arrhythmology probably is the field that has seen the most spectacular and successful developments. It is now clear that nonpharmacological therapy provides definitive solutions for most of the supraventricular tachycardias in the form of ablation techniques, and that such techniques are now more than a promise for the treatment of flutter. The only remaining therapeutic challenge among the supraventricular arrhythmias is atrial fibrillation. As for the ventricular arrhythmias, the treatment of malignant arrhythmias and prevention of sudden death have also seen enormous changes, which had begun to take shape before the CAST study and which crystallized with its publication. This study demonstrated not only the ineffectiveness but also the danger of pharmacological antiarrhythmic treatment in preventing sudden death. In the prevention of sudden death due to ventricular arrhythmia some nonpharmacological procedures, such as the implantation of antitachycardia pacemakers, have become obsolete; others, such as surgery for malignant arrhythmias, are now not widely implemented. Radio-frequency ablation has yielded fairly positive results but its indications in the field of malignant arrhythmias have not yet been firmly established.

A therapeutic procedure that has become a viable option after having successfully passed all experimental phases is the implantable defibrillator which is now routinely used to treat malignant ventricular arrhythmias. Prof. Luc Jordaanens, who has made important contributions to the field of cardiology in different areas of arrhythmology, has written a very interesting monograph on implantable defibrillators, which I do not hesitate to describe as very significant. On the one hand, the monograph provides an update on every aspect of the technique, from the beginning to the present. A quick glance at the bibliography shows that he includes numerous publications on the topic that have been published in the last two years. This body of scientific information, confirmed by personal experience, gives credence to the claims being made
for implantable defibrillators. On the other hand, this monograph was conceived and written expressly for clinical cardiologists as a handy reference for establishing the indications for defibrillator implantation and for postimplantation follow-up, or at least as a guide on how patients should be followed-up.

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This monograph also examines aspects that are often overlooked, such as socioeconomic and psychological factors related to the implantation of defibrillators. In my opinion, this is invaluable. Therefore, it can be expected that this monograph will remain useful for a long time, given its thoroughness, brilliant writing, and practical focus. We predict that it will be enthusiastically received and hope that it will be translated into Spanish and other languages so that it may be accessible to a wider audience.

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Preface IX

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This book would not have been possible without the help of many good friends and colleagues within our department and from outside our institution. Therefore, I want to thank all cardiologists, surgeons, anesthesiologists, and the physicians and technicians on our staff, who made it possible for me to work on, and spend time thinking about defibrillators and their role in the treatment of cardiac disease. A special word of thanks has to be devoted to Seah Nisam, who assisted in our hospital with the very first implantation in Belgium, and also to Fred Lindemans and Ursula Gebhardt, who helped us to organize many clinical investigations with the PCD, and the prospective registry on sudden death that is still running. I would also like to thank Hedwig Boudrez from the Cardiac Rehabilitation Center, University Hospital Ghent, Belgium, who assisted greatly with editing the Chapter Patient Acceptance: Psychological and Social Considerations. This manuscript additionally owes a lot to my secretaries, Nancy Van Nuffel and Benedicte Vander Meeren. Nick Gorgov and Julie Trouerbach kindly reviewed my 'continental English', and Marc Gillis and Nol Van Cleven assisted in preparing the figures. I am very pleased that this manuscript is to be published in this series, and believe that all the work involved with the writing and editing of the various chapters was worthwhile.
To my dear Karla, Katrien and Kasper.
This book was written in their time as well as in mine, and would have been impossible without their support.