BOOK REVIEW

Advances in the Treatment of Atrial Tachyarrhythmias: Pacing, Cardioversion and Defibrillation

Edited by Carsten W. Israel MD, and S. Serge Barold MD. Futura Publishing Company, Inc., Armonk, New York, 2001; 464 pages, 155 figs., 27 tables. ISBN: 0-87993-497-2.

The field of atrial stimulation for the treatment of atrial fibrillation (AF) has been in turmoil in recent years as all the pacemaker (PM) manufacturers, with the collaboration of various investigators, have been investing in the design of special stimulation models that could have preventative or therapeutic value. This book collects, as is becoming commonplace, the studies of different authors covering their experiences, similar to a symposium. Although the book reviews the importance of atrial or 2-chamber stimulation in patients with classic indications for stimulation, special emphasis is placed on the new algorithms, many of them in the experimental phase, without having demonstrated their clinical efficacy. This emphasis, together with the optimistic prologue by Barold, where he affirms that electrical therapies «…offer the promise of the prevention and control of atrial tachyarrhythmias, with significant improvement in morbidity and mortality…», run the risk of causing the reader to think that the efficacy of atrial stimulation for treatment of AF in the absence of bradycardia has already been established. Nevertheless, the careful text of the book helps the reader to correctly understand the present state of the subject that, day by day, could be considered in most cases to be clinical experimentation. The counterpoint of opinions, the result of the habitual complaints and repetitions in this type of book, winds up being more a virtue than a defect.

The book begins with a review of the epidemiology, mechanisms, and diagnosis of AF by M. Santini, et al, which is complete but is somewhat difficult to read due to the lack of illustrations. The following chapter of the first section, by C.T.F. Lam and B.L. Wilkoff, is dedicated to the diagnosis of atrial arrhythmias via data from the PM memory, thus centering the book from the beginning on PM.

The second section contains a chapter by S.S. Barold and C.W. Israel that reviews the retrospective data on the incidence of atrial arrhythmias in patients with implanted PM caused by dysfunction of the sinus node or AV block, and another by L. Kristensen, J.C. Nielsen, and H.R. Andersen with the results of recent prospective studies. Both chapters are solid reviews and give an excellent perspective on the subject.

Section 3 is packed with a review of the experience with bifocal atrial stimulation (both atria or 2 points in the right atrium). The J.C. Daubert group, leaders in this field, review experience with bi-atrial stimulation, the initially hopeful results, and the failure of controlled studies to demonstrate their clinical efficacy. This review highlights some important aspects for clinicians and investigators, such as the technical difficulties and aspects of the design and development of the studies that could have affected the results.

A. Filipecki and S. Saksena reviewed their experience, cited in the bibliography, with bifocal stimulation of the right atrium, basically in patients with sinus bradycardia, with an optimistic tone, including a call for the training of cardiologists in these techniques. The counterpoint is provided by P.E. Vardas in a good chapter in which he reflects on these and other data, and the lack of solid evidence at present for the generalized use of bifocal and bi-atrial stimulation. The third section ends with a review by Israel and Barold of the diverse algorithms of preventative stimulation in AF developed by different manufacturers, an exhaustive compendium with good explanations of the different algorithms, which becomes a good reference for an introduction to clinical experimentation in this field.

The fourth section is completely dedicated to the algorithms for automatic mode change in DDD or VDD PM in the presence of atrial arrhythmias. S.S. Barold and C.W. Israel write a first historical chapter and another chapter with an excellent catalog of the algorithms commercialized by the various manufacturers at present, including an explanation of how they work. A chapter by J.E. Sánchez and G.N. Kay rounds out this review with a comparison of the function of the diverse algorithms. In the last chapter in this section, K.A. Ellenbogen, et al review problematic situations relating to the mode change algorithms. By being algorithms whose usefulness has been clearly established and that are in general use, this entire section is particularly useful for the clinicians in contact with patients who have PM.

Section 5 comments on the technological aspects of MP and the electrodes pertinent to the new stimulation modes. Section 6 contains a brief chapter by C.W. Israel, J.R. Ehrlich, S.S. Barold, and S.H. Hohnloser on clinical situations involving the use of drugs and MP, and another brief but substantial chapter by M. Brignole on the indications and results of ablation of AV conduction, followed by PM implantation in patients with AF.

Section 7 contains the data obtained from the most recent studies on the treatment of AF with implantable

defibrillators and PM. It begins with a chapter by I. Savelieva and A.J. Camm that comments on the treatment of atrial arrhythmias with special types of stimulation implemented in a 2-chamber defibrillator. Careful reading is recommended in order to follow the intelligent analysis made of the data collected and the difficulties mentioned in reaching conclusions on the value of the applied therapies and the arrhythmias detected. The following chapter by W. Jung and B. Lüderitz reviews the experience with implantable atrial defibrillators, and this is complemented by another chapter by R. Mehra, et al regarding the technological aspects and algorithms. In this section evaluation is made of the usefulness of therapeutic success parameters such as reduction of the total AF burden, for which there is no medium- or long-term data regarding clinical significance. It is also interesting that the problems caused by the device itself are converted into its own control. Together, the chapters make it evident that studies are needed of the incidence of clinical AF in the long term, as well as of the cost-benefit ratio of these new devices and algorithms. The last chapter in the section is a good review of current internal and external AF cardioversion technology by H.F. Tse and C.P. Lau.

As a whole, the book is a valuable contribution to the library of cardiologists and investigators of the subject, because it is very current update of the well-established knowledge used in daily practice and a very complete perspective on the development of the most recent investigations. It is a good first pass for the non-initiated who wish to familiarize themselves with this interesting although still uncertain field, and a good compendium for the expert that provides groupings of the current data on the subject.

Francisco García-Cosío Mir

Servicio de Cardiología.
Hospital Universitario de Getafe. Madrid. España.