Spanish Catheter Ablation Registry. Fourth Official Report of the Spanish Society of Cardiology Working Group on Electrophysiology and Arrhythmias (2004)

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Introduction. This article details the findings (i.e., success and complication rates) of the 2004 Spanish Catheter Ablation Registry, which was established by the Spanish Society of Cardiology Working Group on Electrophysiology and Arrhythmias. This is the fourth consecutive annual report.

Material and method. Similar to last year, data were collected in two ways: retrospectively using a standard questionnaire, and prospectively using a central database containing details of each ablation procedure. Each center was asked to participate by selecting one of these methods.

Results. Thirty-six centers contributed voluntarily to the registry. Overall, 4147 ablation procedures were reported, giving a mean of 115 [66] procedures per center. The three main conditions treated were AV node reentry tachycardia (32%), the presence of accessory pathways (25%), and common atrial flutter (23%). Success rates were 98%, 89%, and 91%, respectively. The overall success rate was 90%, with a major complication rate of 1.4% and a mortality rate of 0.07%.

Conclusions. Although the participation rate was slightly lower than in previous years, the comparability of data collected on a substantial number of ablation procedures (more than 4000) with earlier registry data confirm the validity and consistency of the register.

Key words: *Catheter ablation. Electrophysiology. Statistics. Registry.*

Registro Español de Ablación con Catéter. IV Informe Oficial de la Sección de Electrofisiología y Arritmias de la Sociedad Española de Cardiología (2004)

Introducción. Se detallan los resultados (éxito y complicaciones) del Registro Español de Ablación del año 2004 elaborado por la Sección de Electrofisiología y Arritmias de la Sociedad Española de Cardiología por cuarto año consecutivo.

Material y método. La recogida de datos se llevó a cabo mediante 2 sistemas: de forma retrospectiva cumplimentando un cuestionario que fue enviado desde la Sección de Electrofisiología y Arritmias a los laboratorios de electrofisiología y, de forma prospectiva, a través de una base de datos común. La elección de una u otra fue voluntaria por parte de cada uno de los centros.

Resultados. Participaron voluntariamente 36 centros. El número de procedimientos de ablación analizado fue de 4.147, con una media de 115 ± 66 procedimientos por centro. Los 3 sustratos más frecuentemente abordados fueron la taquicardia intranodal (32%), las vías accesorias (25%) y la ablación del istmo cavotricuspídeo (23%), con un porcentaje de éxito del 98, el 89 y el 91%, respectivamente. El porcentaje global de éxito fue del 90%, el de complicaciones mayores del 1,5% y el de mortalidad del 0,07%.

Conclusiones. Aun con una participación ligeramente inferior a la de años anteriores, el volumen de ablaciones recogidas (> 4.000) y los resultados concordantes con los registros precedentes confirman la validez y la consistencia de nuestro Registro.

Palabras clave: *Ablación con catéter. Electrofisiología. Estadísticas. Registro.*

INTRODUCTION

This article details the findings of the IV Spanish Catheter Ablation Registry based on catheter ablation procedures carried out in 2004. This information was

A list of the physicians in charge of each center´s data appears at the end of the article.

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ABBREVIATIONS

AF: atrial fibrillation.
CTI: cavotricuspid isthmus.
AVN: atrioventricular node.
nFINS: non-fluoroscopic navigation system.
FAT: focal atrial tachycardia.
AVNRT: atrioventricular nodal reentry tachycardia
VT: ventricular tachycardia.
AP: accessory pathways.

provided voluntarily by most of the electrophysiology laboratories in Spain.

MATERIALS AND METHOD

Similar to 2003,[1] data were gathered retrospectively —via a questionnaire (paper or online) sent to all electrophysiology laboratories—and prospectively via a central computerized database containing specific information on each ablation procedure. The system for sending, processing, and forwarding data to the coordinators was similar to previous years. The form and database used in 2003[1] were barely modified and neither were the classification of the types of arrhythmic substrates and the success criteria for most substrates changed.[2,3]

Currently, there are different approaches to ablation of atrial fibrillation (AF) and to ventricular tachycardia related to post-acute myocardial infarction (AMI) scarring. They have different targets and as such can be used within the same procedure. On the other hand, the clinical outcome of some of these approaches cannot be analyzed in the short term. Thus, the data regarding success/failure in both substrates should be analyzed with caution. Nevertheless, we provide quantitative data obtained from the replies given by the specialists responsible for the procedure.

Statistical Analysis

Quantitave variables are expressed as mean± standard deviation. Qualitative variables and proportions were analyzed with χ^2 and Fisher test when necessary. Quantitative variables were analyzed with the Student *t* test. The percentages of success and complications were calculated in relation to the number of patients. *P*-values <.05 were considered statistically significant. The statistical analysis was performed with the statistical software SPSS 11.0 (SPSS Inc. Chicago, Ill, USA).

RESULTS

A total of 36 centers submitted data; the characteristics of the participating centers are listed in Table 1 and their geographical distribution in Appendix. Some 31% (n=11) of the centers sent their data via the prospective registry form which was considerably less than in the 2003 registry.[1]

Infrastructure and Resources

A total of 97% of the centers were tertiary centers, 86% (n=31) were publicly funded, and 80% (n=29) offered cardiovascular surgery.

Digital radiology laboratories were available in 48.6% of the centers (n=17). Nevertheless, there were portable radiology systems in 40% of the laboratories which supplied answers to this variable (n=26). The radiology room was exclusively dedicated to electrophysiology procedures in 75% of the centers (n=27). A median of 5 weekdays were dedicated to electrophysiology (range, 1-5). Only 10 electrophysiology laboratories did not undertake device implantation techniques (pacemakers, defibrillators). External/internal electrical cardioversion was carried out in most (72%) laboratories.

Computerized polygraph systems were available in 94% of the laboratories. In addition, 6 laboratories offered intracardiac echocardiography. Radiofrequency catheter ablation was performed in all laboratories. Furthermore, 6 centers offered cryoablation.

Human resources in the publicly financed centers are listed in Table 2. Two or more staff physicians worked full-time in the electrophysiology laboratory in 61% of the centers (19/31). Sixteen centers (52%) also had fellows.

Of the 23 centers that performed transseptal catheterization, the electrophysiologist participated as

TABLE 1. **Characteristics of the Hospitals Participating in the Spanish Catheter Ablation Registry for 2004 (n=36)**

	N (%)
University center (n=30)	
Level (n=30)	27 (90)
Tertiary	29 (97)
Secondary-district	1 (3)
Health system	
Public	31 (86)
Fully private	5 (14)
Unit in charge: cardiology	36 (100)
Centers with heart surgery	29 (80.5)