



ORIGINAL ARTICLE

## Portuguese National Registry on Cardiac Electrophysiology, 2013 and 2014<sup>☆</sup>



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### PALAVRAS-CHAVE

Registo;  
Eletrofisiologia;  
Cardioversor  
desfibrilhador;  
Ablação

**Abstract** The authors present the results of the national registry of electrophysiology of the Portuguese Association for Arrhythmology, Pacing and Electrophysiology (APAPE) for 2013 and 2014. The registry is annual and voluntary, and data are collected retrospectively. Data for electrophysiological studies, ablations and cardioverter-defibrillator implantations for 2013 and 2014 are presented. These data are compared with results from previous years and the implications of these developments are analyzed and discussed.

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### Registo nacional de eletrofisiologia cardíaca (2013/2014)

**Resumo** Apresentam-se os dados referentes ao registo nacional de eletrofisiologia cardíaca da Associação Portuguesa de Arritmologia, Pacing e Electrofisiologia (APAPE) para os anos de 2013 e 2014. Trata-se de um registo anual, voluntário, observacional, com colheita retrospectiva dos dados.

São apresentados os dados dos estudos eletrofisiológicos, ablações e implantação de cardioversores desfibrilhadores para os anos considerados. Avalia-se a evolução ao longo dos anos destes procedimentos e discutem-se as potenciais implicações destes resultados.

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## Introduction

Data from the annual registry of cardiac electrophysiology of the Portuguese Association for Arrhythmology, Pacing and Electrophysiology (APAPE) are presented for 2013 and 2014.

The registry has been maintained continuously since the first report was published in 2000, based on 1999 data,<sup>1</sup> coinciding with the early years of APAPE, which was established in 1999. The Portuguese Institute of Cardiac Rhythm (IPRC) has collaborated in the publication of these data since 2005. The present report covers 14 years of interventional electrophysiology in Portugal, an activity that began here 23 years ago.

The registry is voluntary and aims to include all Portuguese centers (public and private) that perform catheter ablations and/or implantable cardioverter-defibrillator (ICD) implantations.

This observational registry sets out to describe Portuguese activity in the field of electrophysiology. Data are published annually or biannually, enabling analysis of developments since the beginning of the 21st century. It is important to maintain the registry as it provides an overall picture of the situation in Portugal in terms of the number and volume of activity of participating centers and the number and type of procedures performed, as well as developments over time. The data will also be useful to determine the training capacity of the various centers and to provide information to health authorities regarding activity in this sector.

Data from the registry are also included in the European Heart Rhythm Association (EHRA) White Book, an annual publication (now in its eighth edition) that aims to describe the situation in different European countries in the treatment of arrhythmias.<sup>2</sup>

Preliminary data from the registry for 2013 and 2014 were presented at the annual APAPE meetings in February 2014 and February 2015, respectively, and are now published together.

## Methods

Data collection is retrospective, based on a questionnaire sent (usually in January or February) to all Portuguese centers performing catheter ablations and/or ICD implantations, requesting data for the previous year. Responses are submitted electronically by centers with computerized databases and manually by the others.

The total number of procedures and their distribution by center are analyzed, broken down into the number of electrophysiological studies (EPS) (with or without ablation), the number of ablation procedures and types of arrhythmia treated, and the number and types of ICD implanted.

## Results

All participating centers replied to the questionnaire, the results being divided into EPS and ablations, and ICD implantations.

## Electrophysiological studies and ablations

The main data for each of the years under analysis are shown in [Table 1](#).

In 2013, 17 electrophysiology laboratories (six in private centers and the remainder in public hospitals) performed 2713 EPS, followed by ablation in 2062 patients. The number of diagnostic EPS (without ablation) was thus 651 (24% of the total). The mean number of ablations per center was 121.3 in 2013, with a median of 53. Seven centers (41%) performed more than 100 ablations, and four (23.5%) performed less than 10.

In 2014, 3112 EPS were performed, followed by ablation in 2325 patients. The number of EPS laboratories rose to 25 (11 in private centers), and the mean number of ablations per center was 93, with a median of 33. Seven centers (28%) performed more than 100 ablation procedures in 2014, and nine (36%) performed less than 10.

The distribution of procedures by center and the types of arrhythmia treated in 2014 are shown in [Figure 1](#).

The distribution by type of arrhythmia treated in 2013 and 2014 can be seen in [Figure 2](#), the most common being atrial fibrillation (AF), followed by atrioventricular nodal reentrant tachycardia (AVNRT), during the two years under analysis. AF ablation accounted for 26.9% of procedures in 2013 and 29.6% in 2014.

## Implantable cardioverter-defibrillators

[Table 2](#) shows the figures for ICD implantations during the two years under study, only first implantations being considered in the analysis in order to standardize the data.

In 2013, 1138 first ICD implantations were performed in 26 centers, while in 2014 there were 1256 first implantations in 30 centers, an increase of 9.4% over the previous year. [Figure 3](#) shows the number of implantations of ICDs and cardiac resynchronization therapy defibrillators by center in 2014.

It can be seen that the number of centers implanting ICDs increased by four between 2013 and 2014. The mean number of ICD implantations per center was 43.8 in 2013 and slightly lower in 2014 (41.9), while the median fell from 33 to 31.

**Table 1** Electrophysiological studies and ablation procedures in 2013 and 2014.

|                                                   | 2013  | 2014 |
|---------------------------------------------------|-------|------|
| No. of centers                                    | 17    | 25   |
| Private centers                                   | 6     | 11   |
| EPS (n)                                           | 2713  | 3112 |
| Ablations (n)                                     | 2062  | 2325 |
| Mean ablations per center                         | 121.3 | 93   |
| Median ablations per center                       | 53    | 33   |
| No. of centers performing >100 ablations per year | 7     | 7    |
| No. of centers performing <10 ablations per year  | 4     | 9    |

EPS: electrophysiological studies.

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