

## **“The development of invasive therapies for arrhythmias in Greece: past, present and future”**

Vassilios P Vassilikos MD, FACC, FESC

Professor in Cardiology

Director, 3<sup>rd</sup> Cardiology Department

Aristotle University of Thessaloniki

Arrhythmias are a very important area in Cardiology. Invasive therapies include ablation of tachyarrhythmias and implantation of cardiac rhythm management devices (CRMDs). Technology has made great progress over the last years, allowing successful treatment in the majority of the cases. In order to record and evaluate the extend of use and effectiveness of these techniques in Greece, in 2008 the radiofrequency ablation procedures (RFA) registry was formed. Later in 2015 the CRMD registry was organized. Both registries are under the auspices of the Hellenic Cardiac Society (HCS). This is a dynamic, web-based application, which acts as the interface for storing and retrieving patients' demographic data and procedure data. Access to the site is permitted only to registered users.

### **RFA registry**

There are 30 licensed centers in 26 hospitals performing RFA in Greece. Sixteen are public and 10 private or semi-private hospitals. During the 2008-2017 year-period 15486 procedures in 14702 patients were recorded. In 2017, seven centers were performing more than 100 cases/year, accounting for 65% of total cases.

The most common procedure until 2012 was slow pathway ablation for atrio-ventricular reentry tachycardia (AVNRT), the second being atrial fibrillation (AF) ablation since 2010. After 2014, AF ablation is in the first place, accounting for 34% of total cases. The third most common type of RFA is tachycardias involving an accessory pathway (the percentage is declining). Electro-anatomic mapping was used in 48.2% of total cases, CARTO being the most often used system. Success rates were high (median 96%, range from 78%-100% according to procedure type), complication rate was 2.3%

(serious complications <1%) and total relapse rate was 2.2% at six months follow-up (range 0.2%-21%, according to procedure type).

### **CRMD registry**

This registry was started in 2015, but the consistency of data input is not satisfactory. There are 61 centers in 51 hospitals licensed for pacemaker implantation. Sufficient data for analysis were available for 2015 and 2016 from 35 centers. Single chamber, dual chamber and VDD pacemakers account for 25%, 64% and 6% of total implants respectively. The implantation of MRI compatible, CRTP, AAI and wireless pacemakers is low (3.5%, 0.5%, 0.3% and 0.7% respectively).

For ICD implantation there are 31 centers in 27 hospitals. Single chamber, dual chamber and CRTD account for 24%, 50% and 26% of total implants respectively.

The electronic RFA and CRMD registries confirmed that all procedures are performed in Greece with high success and low complication rates, comparable to the European and US standards. The RFA procedures for atrial fibrillation are the majority of the cases since 2014, indicating that electrophysiologists have been through the learning curve for the procedure, and the referral pattern has changed. Although the data completion is high and satisfactory in the RFA registry, this is not true for CRMD registry. The latter requires more effort from the participating centers.