ESC analysis reveals arrhythmia treatment gaps between Eastern and Western Europe

August 29 2012

The analysis was conducted using five editions of the *EHRA White Book*, which is produced by the European Heart Rhythm Association (EHRA), a registered branch of the European Society of Cardiology (ESC).

The *EHRA White Book* reports on the current status of arrhythmia treatments in the 54 ESC member countries and has been published every year since 2008. Data is primarily provided by the national cardiology societies and working groups of cardiac pacing and electrophysiology of each ESC country. Prospective data is collected on catheter ablation and on implantation of cardiovascular implantable electronic devices including implantable pulse generators (IPGs, also called pacemakers), implantable cardiac defibrillators (ICDs) and cardiac resynchronization therapy (CRT) devices.

For the first time this year an analysis of clinically meaningful trends in the use of catheter ablation procedures and cardiac implantable electronic devices has been conducted. "Statistics on the use of cardiac electronic devices and electrophysiological procedures in the ESC 54 countries" will be published in a dedicated supplement in EHRA's official journal, the *European Journal of Pacing, Arrhythmias and Cardiac Electrophysiology* (*EP-Europace*). It will be available online from 24 August at http://europace.oxfordjournals.org/.

The analysis includes all data from the first five editions of the *EHRA White Book* and reports changes over time in the 54 ESC member countries, which include countries in Europe and the Mediterranean.

Comparisons are made within and between countries, and between the 54 ESC member countries and the 27 European Union (EU27) member countries. For each procedure, reasons are given for disparities between countries.

The analysis revealed healthcare inequalities in the treatment of different arrhythmic disorders across Europe and the 54 ESC countries, within established economies and within emerging economies, and growing gaps.

"The treatment gaps were not solely due to a country's economic status but were also the result of a lack of implanting centres, properly trained healthcare professionals and low referral rates," said EHRA president Professor Angelo Auricchio. "Just throwing money at the issue will not solve the problem. Training and adherence to guidelines are needed."

The analysis revealed that in 2011, across ESC member countries, an average of 604 IPGs were implanted per million inhabitants. The highest implantation rates were in Germany (1,313), Italy (1,034) and Iceland (1,006) and the lowest rates were in Azerbaijan (15), Morocco (39) and Georgia (84).

In ESC member countries the average number of ICD implantations per million inhabitants was 103 in 2011. The highest implantation rates were reported in Germany (326) and the Czech Republic (270). The lowest implantation rates were reported in Ukraine (1), Morocco (1) and Azerbaijan (2).

For CRT the average number of implants per million inhabitants in ESC member countries was 77 in 2011. The highest rates were in Italy (203), Germany (202) and Denmark (158), with the lowest rates in Morocco (1), Ukraine (1) and Azerbaijan (2). CRT implantation numbers were low in non-EU27 countries. Implant numbers were not correlated with

average healthcare spending or GDP but were correlated with device reimbursement, the number of implant centres, and the lack of availability and poor implementation of local guidelines. The report said: "Focusing on changing local policies to achieve a more uniform approach to CRT, and bringing experience to these countries may increase implant numbers and decrease the persisting, significant geographical differences."

The average number of ablations performed per million inhabitants in ESC member countries was 251 in 2011. The highest rates were in Germany (614), Switzerland (612) and Belgium (534) and the lowest rates were in Morocco (3), Bosnia & Herzegovina (5) and Montenegro (11). Training appeared to be one factor associated with the level of ablation activity in each country, either because a minimum number of cases is needed to provide training or because the ability to provide training is often associated with both professional motivation and infrastructure to do more procedures.

Health expenditure per capita ranged between US$143 in Armenia and US$9,603 in Switzerland, a 67-fold difference. Reduced health expenditure was associated with lower use of interventional electrophysiological procedures.

"This is the first time we have analysed the trends in these therapies in different countries," said Professor Fernando Arribas, *EHRA White Book* coordinator. "The main finding of the five year analysis was the significant gradient in treatment from Western European countries to Eastern European and North African countries."

Professor Arribas added: "Awareness is the first step towards addressing a problem and our analysis provides an insight into where the gaps are and why they have occurred. Reducing the gap requires investment in hospitals where the procedures can be performed. It also requires

investment in education so that more healthcare professionals become skilled in providing these therapies and so that physicians know how effective these therapies are and refer their patients."

He continued: "This document can be used not only for people involved in healthcare but also should be put on the table of politicians, healthcare providers and social groups."

The *EHRA White Book* has become a reference for comparing arrhythmia treatments between countries. The 532-page *EHRA White Book* 2012 was published in June 2012 and is available at www.escardio.org/EHRA. It is the first White Book to be published on the European Commission's (EC) "Health-EU" website and it will be included in the EC's Health in Europe: Information and Data Interface (HEIDI).

Professor Auricchio said: "The European Commission and World Health Organization are increasing their focus on non-communicable diseases including cardiovascular disease and are intrigued by the significant inequalities in treatment our analysis has shown with pacemakers, CRT, ICD and ablation therapies."

He added: "The gap between established and emerging economies in the use of these therapies is becoming larger and larger. We now have evidence to request actions from governmental agencies to reduce the gap because if nothing is done the gap will continue to increase."

EHRA is standardising the data collection to make future White Books and analyses even more robust. It is creating a large European database that will be used by the national societies and working groups in each country to enter data on implantations and catheter ablation. "If we want to reach our goal of homogenising patient care across Europe the first thing we need to do is improve the standardisation and quality of data

collection," said Professor Karl Heinz Kuck, president-elect of EHRA.

He added: "We are going beyond just collecting numbers to try to really understand why some countries have low procedure rates. It's not only a budget issue: some countries lack physicians who can do the procedures and more training programmes are needed."

Provided by European Society of Cardiology