improvement was observed (>35% or ≤ 35%, respectively) in a re-evaluation of left ventricular ejection fraction (LVEF) (mean of 13.5 months until re-evaluation). Approximately 29% of patients showed an increase in LVEF at the first reevaluation. As expected, mortality was greater among individuals whose LVEF remained below 35%. In those patients alone, ICD was associated with a significant and independent reduction in mortality (HR, 0.64; 95% CI, 0.48-0.85).

Although ICD for primary prevention improves survival in patients with prior infarction and reduced LVEF, the variables used to define the indication (LVEF and functional class) are not very specific markers of sudden cardiac death due to cardiac arrhythmia. Rizas et al.[5] published the results of a subanalysis of the MADIT II study showing that a noninvasive tool for assessing myocardial electrical stability (periodic repolarization dynamics [PRD]) is a promising predictor of sudden death. The variable is derived from a complex mathematical formula applied to a high-resolution electrocardiogram obtained over 10 minutes. It behaves as marker directly proportional to the degree of sympathetic activation of the myocardium. In that study, PRD calculated on inclusion of 856 patients in sinus rhythm behaved as a significant predictor of overall mortality (HR, 1.37; $P<.001$), whether related to sudden cardiac death (HR, 1.40; $P=.003$) or not (HR, 1.41; $P=.006$). On classification of patients into 4 groups according to PRD, only those in the first to third percentiles benefitted from ICD implantation, with a 56% decrease in mortality ($P<.001$); for those individuals with highest PRD values, ICD placement did not improve survival because the decrease in sudden cardiac death was compensated by increased mortality not associated with sudden cardiac death.

With regards subcutaneous ICD, the mid-term outcomes of the EFFORTLESS registry have been reported.[6] The study included a cohort of 985 individuals, whose characteristics differed from those usually found in patients undergoing conventional ICD placement (lower age and higher LVEF). These patients were followed up for at least 12 months. The rate of device-related complications (primary outcome measure of the study) at 30 days and 1 year was 0.3% (95% CI, 0-0.6%) and 2% (95% CI, 1.3%-3.1%), respectively, with inappropriate shock due to oversensing being the most frequent (11 patients [1.1%]). In total, 115 patients (11.7%) experienced a complication during follow-up. Of these, 24 (2.4%) required device extraction due to infection but endocarditis was not reported in any of the patients. The rate of effective cardioversion/defibrillation of spontaneous episodes was 97.4%. Thus, in this extensive series, subcutaneous ICD showed a similar efficacy and safety profile to that of conventional devices.

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Selection of the Best of 2017 in Clinical Arrhythmology

Selección de lo mejor del año 2017 en arritmología clínica

To the Editor,

Atrial fibrillation (AF) continues to be the most common arrhythmia, with a prevalence of around 1% to 2% in the general population. In the setting of arrhythmia, it is the leading cause of morbidity and mortality, and the focus of the majority of scientific production. This year has seen the publication of information on the role of direct oral anticoagulants in the prevention of cardioembolic stroke in AF. There have been numerous efficacy and safety studies in clinical practice, most of which are multicenter retrospective studies, but which support the conclusions of previous clinical trials and reinforce the fundamental role of these drugs in the prevention of stroke vs vitamin K antagonists (VKA).[1] In addition, the RE-CIRCUIT [2]study demonstrated a lower rate of major bleeding when performing AF ablation without interrupting dabigatran therapy compared with conventional treatment with VKA. These findings confirm

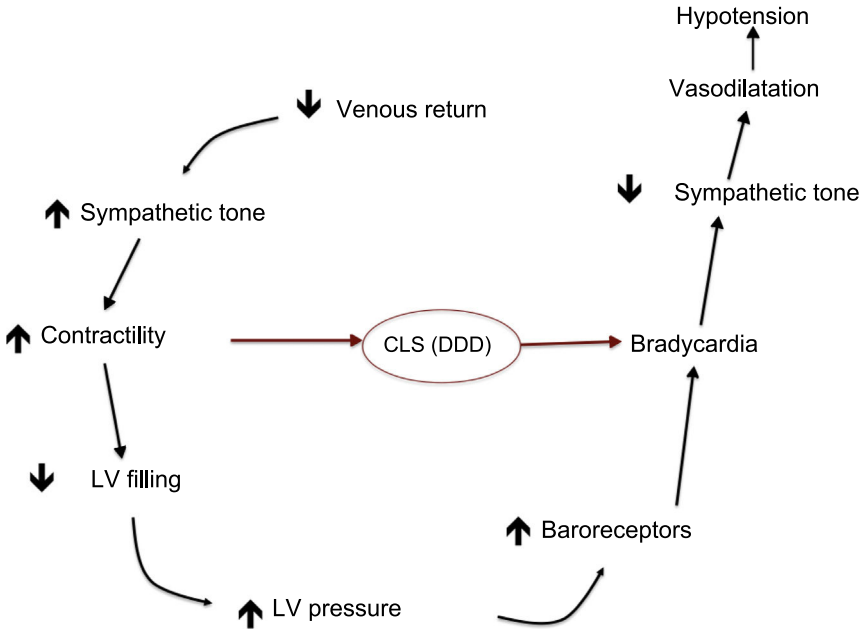

Figure. Closed loop stimulation diagram. The sensor detects the change in intracardiac impedance that occurs in the initial phase of vasovagal syndrome and activates sequential stimulation, which prevents bradycardia, decreased sympathetic tone, and hypotension. CLS, closed loop stimulation; LV, left ventricle.

the safety of interventional cardiology procedures without the suspension of direct oral anticoagulants, as was already the case in clinical practice with VKA. Finally, direct oral anticoagulants have been compared with atrial appendage occlusion, showing that the death and stroke rates are very similar. Nevertheless, these results should be taken with caution and new studies are needed to confirm them.

In the field of syncope, a Spanish group presented the SPAIN[3] trial at the Congress of the American College of Cardiology. This trial evaluated the effectiveness of dual-chamber pacing with closed-loop stimulation algorithm for the treatment of vasovagal syncope in patients with recurrent episodes and a cardioinhibitory head-up tilt test (Figure 1). There was a significant reduction in syncope recurrence in patients with a pacemaker with this algorithm compared with patients with a pacemaker in DDI mode, confirming the results of previous studies. Even so, pacing therapy should not be generalized in vasovagal syncope, but reserved only for patients with highly recurrent episodes, significant clinical involvement, and a cardioinhibitory mechanism.

In the field of inherited cardiomyopathies and sudden cardiac death (SCD), an outstanding study is that of the Brussels group on risk stratification of SCD in Brugada syndrome.[4] In contrast to previous meta-analyses that only gave importance to syncope in the decision to implant automatic defibrillators in these patients, this group developed a risk scale in which not only the presence of previous syncope or cardiac arrest were significant, but also male sex, spontaneous Brugada pattern type 1 on electrocardiogram, sinus dysfunction, a direct family history of SCD, and inducible ventricular arrhythmias by programmed stimulation. These findings should be confirmed in larger multi-center studies, but will surely keep the debate on this difficult issue alive. In the area of channelopathies, a large randomized study demonstrated the efficacy of flecainide in reducing the arrhythmic burden of catecholaminergic polymorphic ventricular tachycardia.[5] This study confirmed flecainide as a therapeutic alternative to beta-blockers, either in monotherapy or in combination, and as an attractive additional therapeutic tool in this disease in addition to beta blockers themselves, sympathectomy, and automatic defibrillator implantation. Finally, a study by a Spanish group was the first to identify mutations in the FLNC gene, which encodes filamin C, as a cause of arrhythmogenic myocardiopathy of the left ventricle.[6] This relevant study advances our understanding of the etiopathogenesis of this entity and provides results that are applicable in the clinical setting, because it showed the families described had a high incidence of myocardial fibrosis, ventricular arrhythmias, and SCD. Filamin C is a cytoskeletal anchoring protein previously associated with hypertrophic cardiomyopathy and restrictive cardiomyopathy. However, this new study only included radical mutations, or truncations, establishing a strong phenotype-genotype correlation and confirming the prognostic value of genetic information in SCD risk stratification in these cases of left arrhythmogenic dysplasia.

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