The MUSIC Database: Sudden Cardiac Death in Heart Failure Patients

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The growing population of patients with mild-to-moderate chronic heart failure (CHF) raises the need for better risk stratification of these patients who might benefit the most from primary prevention of mortality, such as the use of implantable cardioverter defibrillators. The MUSIC ("*MUerte Súbita en Insuficiencia Cardiaca*") database was part of a prospective, multicenter study collected with the aim of developing prognostic models for sudden cardiac and total mortality in CHF. Making publicly available MUSIC database at Physionet resource (https://physionet.org) aims to contribute to the development and validation of novel algorithms, techniques, and tools for ECG analysis and its interpretation, but also of innovative clinical applications to improve patient care and outcomes.

The database includes a total of 992 consecutive patients with symptomatic CHF corresponding to New York Heart Association classes II and III recruited from eight Spanish hospitals. All patients had a 24-hour, 3-lead Holter ECG performed at enrollment together with a previous high-resolution, 20-min ECG in supine position. Most patients (651) were in sinus rhythm, 171 had permanent atrial fibrillation, and 105 pacemaker rhythm. Clinical and demographic information, radiographic, echocardiographic, laboratory variables and medications were made also available. All it has been completed with the date of enrollment and exit of the study, together with mortality codes. A follow-up period was conducted for a median of 44 months, including periodic visits every 6 months. At the end of the follow-up period, the study group included 94 sudden cardiac deaths, 111 deaths due to a different cardiac origin (heart failure events), 20 cardiac transplantations, 61 non-cardiac deaths, and 695 survivors (11 patients lost during follow-up).

Therefore, having publicly available the MUSIC database on Physionet represents a valuable source of data for the development of prognostic models and novel ECG methodologies aimed at improving this risk stratification in heart failure.