Cardiac resynchronization therapy (CRT) is well established as an effective alternative for the treatment of refractory heart failure; several studies have shown a decrease in mortality, improved quality of life, symptomatology and reverse cardiac remodeling.

However, due mainly to its high cost and therapeutic failure in around one-third of the patients undergoing this intervention, several strategies have been directed at identifying patients that can benefit from this procedure. Similarly, such stratification strategies aim at selecting the patients that would not benefit from the implant of a cardiac resynchronization device, or might even get worse after implant.

In this sense, the importance of the echocardiogram is highlighted among the several techniques used for the assessment of this group of patients, as it is a noninvasive, risk-free and lower-cost procedure.

Although several smaller studies have demonstrated the effectiveness of the echocardiogram for the adequate selection and quantification of electromechanical dyssynchrony in heart failure, especially with the use of tissue Doppler, since these findings were not reproduced in a more recent prospective multicentric study (PROSPECT)
As a result, the presence of left branch block continues to be used as a major criterion to select heart failure patients for cardiac resynchronization.

In this issue of the Arquivos Brasileiros de Cardiologia, the authors report their results in patients with refractory heart failure submitted to CRT, evaluated with echocardiography with tissue Doppler, before and after the procedure, with a follow-up of up to 2 years.

In spite of the limited number of patients (20 patients), the manuscript discloses two important points: first, it is essential to emphasize the high mortality in Chagasic patients, suggesting that, apparently, its natural history cannot be modified with the CRT. Freitas et al. had previously demonstrated a higher mortality for patients with heart failure of Chagasic etiology, when compared to those with idiopathic dilated cardiomyopathy.

Some particular characteristics of this subgroup might be responsible for these results. It is known that patients with Chagas disease often present with myocardial involvement in the inferolateral region of the left ventricle. At the same time, the absence of response to resynchronization, related to the presence of scar tissue in this region, has been observed in patients with ischemic cardiomyopathy, even with dyssynchrony confirmed with tissue Doppler, suggesting that the resulting activation of the pacemaker in the region of the myocardium with fibrosis could be ineffective.

Therefore, a comparative study would be important to test the response to resynchronization in Chagasic patients, correlating their clinical evolution with the extension of the regional myocardial involvement. Unfortunately, it is not possible to confirm such hypothesis without data regarding regional contractility in this group of patients. Additionally, associated factors, such as the higher prevalence of right ventricular dysfunction and/or complex ventricular arrhythmias might be related to a higher mortality in the group of Chagasic patients.

The study, however, does not report the causes of death (whether they are of cardiovascular origin or not) and thus, it is not possible to speculate about this association. Absence of correlation with worsening of functional class might imply that, if death was of cardiovascular origin, it would probably have an arrhythmic cause.

The etiology of heart failure is an important determinant factor of the CRT success, as demonstrated by the CARE-HF, where a higher mortality was observed in patients with ischemic cardiomyopathy. Considering the marked prevalence of Chagasic patients with heart failure in our population, the importance of this information should not be underestimated.

Another interesting point observed by the authors is that the difference in the electromechanical delay by tissue Doppler after the pacemaker implant was statistically lower for the survivors than for the patients who died, although there was no difference regarding the values before the implant. Based on that observation, the authors suggest that the assessment with tissue Doppler after the CRT can be used to identify the patients that will present the worst prognosis. They infer that, although it does not prevent an unnecessary implant, tissue Doppler can be used to direct better care to this selected high-risk group.

It is crucial, therefore, that these data be interpreted with caution, mainly due to the small population. Moreover, the study presents a considerable limitation which, although mentioned by the authors, should not be underestimated: the...
absence of the intra or interobserver variability assessment. Variability for echocardiogram measurements can be as high as 5% for some parameters (ejection fraction, for instance), which practically invalidates some of results found. Studies like PROSPECT, incidentally, had the marked variability of the echocardiographic measurements as an explanation for the ineffectiveness of the method of patient selection for resynchronization.

Due to these characteristics, this study needs to be confirmed in a larger population and with a more adequate methodology, so that the findings can be considered clinically relevant in daily practice.

References


