Mechanical dyssynchrony according to validated cut-off values using gated SPECT myocardial perfusion imaging

First we want to thank Fudim M and Borges-Neto S for the time used to analyze our article. Following, we respond to your comments:

The choice of the endpoint: In this heterogeneous patient population, only 17.8% (46 patients) had a left bundle branch block (LBBB), yet a total of 82 patients received CRT. The fact that only about half of the patients had LBBB would suggest that a significant amount of the CRT patients did not meet class I (and possibly either IIa) indication.

It is true that the presence of LBBB is one of the criteria for CRT. But, on the other hand, the presence of a wide QRS does not always imply having LBBB electrocardiographic criteria. Another important aspect to know is that if a patient has impaired functional class with an advanced degree of dyssynchrony will not be expected to develop a LBBB for the indication of a CRT.

Additionally, the lack of follow-up for the CRT group and shortfall in reporting major cardiovascular outcomes make the presented classification clinically less relevant. Our study found that amongst common dyssynchrony parameters, bandwidth correlated best with cardiovascular and all-cause mortality.

First of all, our work is not a prognostic study, and therefore not comparable to your article. It is a work that demonstrates how degrees of dyssynchrony can be established, that until the present moment had not been established.

In this study, we did not have data on cardiac or global mortality. We are currently working on the relationship between these degrees of dyssynchrony and prognosis.

We believe that it is a population well studied, and that highlights the reality of patients in clinical practice.

From our point of view, it seems relevant to establish degrees of dyssynchrony, as in the same way in the past have been established degrees of systolic dysfunction and diastolic dysfunction with different prognostic values.

Use of cut-off values: The decision to select distinct cut-off values for dyssynchrony parameters is a common practice for publications relating to this topic. However, our group demonstrated that such a threshold does not exist using the largest sample size as well as the longest follow-up period to date. In this study, the correlation between degree of dyssynchrony and mortality was continuous. As a consequence, statistical modeling should be applied where possible. We do recognize the significance of cut-off values in clinical medicine and their utility for predictive tools. In order for clinicians to start utilizing SPECT-generated mechanical dyssynchrony, future studies have to use a randomized approach to evaluate the impact of a simple or more complex prediction tool for the choice of CRT.

Yes, there is probably a continuous relationship to the degree of dyssynchrony and the cardiac event. Our study is different from your article; and as we have said previously there is no prognostic data.

Moreover, we analyzed all phase parameters and used 4 of them to define different degrees of dyssynchrony (we think it is more correct than using only one parameter).

At the moment, we have established cut-off values only to establish degrees of dyssynchrony, not for prognostic purposes. We are working on it and will be the next publication.

We are supporters that it is important to try different degrees of dyssynchrony (this aspect we have done after establishing values of cut with 4 parameters, and not only with one), and from this to establish a multivariate probabilistic model adjusted to predict mortality or possible hospitalizations for decompensated heart failure.

Santiago Aguadé-Bruix, MD^a

Guillermo Romero-Farina, MD, PhD, FESC, FASNC^b

^aDepartment of Nuclear Medicine,
Hospital Universitari Vall d'Hebron,
Institut de Recerca (VHIR), Universitat
Autònoma de Barcelona, Barcelona,
Spain; saguade@vhebron.net.

^bCardiology Department, Hospital
Universitari Vall d'Hebron, Institut de
Recerca (VHIR), Universitat Autònoma de
Barcelona, Barcelona, Spain
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