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EDITORIAL COMMENT

How to interpret assessment of left ventricular function by strain in acromegaly?

Como interpreter a avalição da função ventricular esquerda por *strain* na acromegália?

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Acromegaly is a rare disease and our knowledge of acromegalic cardiomyopathy is moderate.[1] It is, however, very important for cardiologists to know that cardiovascular disease accounts for more than 50% of all deaths in acromegaly. Typical findings in acromegalic cardiomyopathy that should alert us include concentric left ventricular (LV) hypertrophy and progressive systolic dysfunction. These patients also suffer from hypertension, coronary artery disease, arrhythmias and valvular disease.[2] The other most common cardiovascular risk factors in these patients are diabetes mellitus and sleep apnea syndrome. It is therefore clear that these patients will need cardiological expertise in addition to support from endocrinologists.

Studies of myocardial function in acromegalic cardiomyopathy are welcome in order to increase our knowledge base, and the study by Kormányos et al. published in this issue of the *Journal* adds to our understanding of this disease, but it also raise some questions that merit a closer look.[3] Their main findings were LV hypertrophy and impaired LV diastolic function with preserved LV systolic dysfunction. LV systolic function was assessed by ejection fraction (EF) and different strain measures. Radial strain was enhanced compared to normals, while longitudinal and circumferential strains were similar to those in normal individuals.

The apparently divergent messages from their strain measures – enhanced radial thickening and normal longitudinal strain – call for comment. Patients with acromegaly had thicker septums and larger LV cavities than normal individuals. A thicker interventricular septum and posterior wall will normally lead to reduced LV longitudinal function, but this was not found in their study.[4] The explanation may be that the thickness was not very pronounced, and that the larger LV cavity could compensate for this relationship.

Longitudinal strain is considered the most robust and reproducible form of strain, while radial strain is considered less reproducible when using two-dimensional imaging.[5,6] The authors used three-dimensional strain, which is still considered a research tool, and one should therefore be wary of drawing firm conclusions about the apparently enhanced radial function.[7]

The results from Kormányos et al.'s study are seemingly different from those of another recent study on myocardial function in acromegaly. Popielarz-Grygalewicz et al. assessed 140 patients and found that global longitudinal strain (GLS) indicated marginally worse LV function compared to their control group.[8] Their patient characteristics were, however, different from the population of the study published here. Those patients had much thicker LV walls and were therefore at a more advanced stage in the progression of acromegalic cardiomyopathy. Their findings were also somewhat surprising, since GLS was only marginally lower and thus relatively intact, despite being significantly different from their controls. We will therefore need more studies of LV mechanics in acromegaly before we can apply myocardial strain in these patients. A finding of reduced

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myocardial function by strain and normal EF is normally considered an early sign of myocardial disease, whereas Kormányos et al. report normal strain despite other signs of diseased myocardium in their patients. Their findings of normal systolic strains are therefore positive for the acromegalic population in their cohort, but cannot of course be extrapolated to all patients with acromegaly. I therefore recommend that treatment decisions following echocardiographic studies should be based on traditional measures until we have obtained more knowledge on how to interpret myocardial function by strain in acromegaly.

Conflicts of interest

The author has no conflicts of interest to declare.

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