To the Editor:

We read with interest the review article “Cardiac Remodeling in Obesity” published recently.1 The article succinctly documents the evidence for left ventricular geometric remodeling and subclinical changes in systolic and diastolic function, and given the global increase in obesity, this is of major clinical importance. We would like to comment, however, that several important new potential mechanisms of left ventricular hypertrophy and diastolic function in obesity have recently emerged and allow further insights into the pathophysiology of cardiac remodeling in obesity. These new mechanisms are separate from the traditional hypothesis that solely relies on increased circulating blood volume and blood pressure changes and allows the production of models of cardiac change in obesity that integrate the traditional hemodynamic model focused on in this article with metabolic changes, which are substantial in obesity. There is now a wide range of literature that supports the idea that, in addition to the changes in blood volume and cardiac output that occur in obesity, elevations in adipokines, such as leptin, that occur in obesity and are linked to left ventricular hypertrophy,2 play a role in geometric remodeling and may in fact cause concentric remodeling independent of increases in left ventricular end-diastolic volume.3 Although it is likely that left ventricular hypertrophy contributes to passive diastolic dysfunction, other mechanisms involving the active energy consuming processes have become apparent in the pathogenesis of diastolic dysfunction in obesity. We have recently shown impaired high-energy phosphate metabolism in obesity that is linked to diastolic function,4 and also that myocardial energetics in obesity are improved, along with left ventricular filling rate, after weight loss.5 Integrating hemodynamic changes with metabolic changes that occur in obesity has been a recent paradigm shift that is not highlighted in this review, but one which we feel is worthy of mention.

Disclosures

None.

Oliver J. Rider, BMBCh, MRCP, DPhil
Stefan Neubauer, MD, FMedSci
Department of Cardiovascular Medicine
University of Oxford Centre for Clinical Magnetic Resonance Research (OCMR)
University of Oxford
Oxford, United Kingdom

References


Correspondence

Oliver J. Rider, BMBCh, MRCP, DPhil
Stefan Neubauer, MD, FMedSci
Department of Cardiovascular Medicine
University of Oxford Centre for Clinical Magnetic Resonance Research (OCMR)
University of Oxford
Oxford, United Kingdom

© 2013 American Heart Association, Inc.

Circ Cardiovasc Imaging is available at http://circimaging.ahajournals.org DOI: 10.1161/CIRCIMAGING.113.000218

(Circ Cardiovasc Imaging, 2013;6:e17.)

© 2013 American Heart Association, Inc.

Circ Cardiovasc Imaging is available at http://circimaging.ahajournals.org DOI: 10.1161/CIRCIMAGING.113.000218
Letter by Rider and Neubauer Regarding Article, "Cardiac Remodeling in Obesity"
Oliver J. Rider and Stefan Neubauer

Circ Cardiovasc Imaging. 2013;6:e17
doi: 10.1161/CIRCIMAGING.113.000218

The online version of this article, along with updated information and services, is located on the World Wide Web at:
http://circimaging.ahajournals.org/content/6/3/e17

Permissions: Requests for permissions to reproduce figures, tables, or portions of articles originally published in Circulation: Cardiovascular Imaging can be obtained via RightsLink, a service of the Copyright Clearance Center, not the Editorial Office. Once the online version of the published article for which permission is being requested is located, click Request Permissions in the middle column of the Web page under Services. Further information about this process is available in the Permissions and Rights Question and Answer document.

Reprints: Information about reprints can be found online at:
http://www.lww.com/reprints

Subscriptions: Information about subscribing to Circulation: Cardiovascular Imaging is online at:
http://circimaging.ahajournals.org//subscriptions/