



## Cardiac Dysfunction Related to Cirrhosis

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### Dear Editor,

A systematic review of Mota and Markman Filho<sup>1</sup> demonstrates that Doppler echocardiography is indicated in cases of cirrhosis, for investigation of pulmonary and vascular complications of cirrhotic cardiomyopathy. We agree that this test may show cardiac abnormalities related to cirrhosis. In our experience, 184 patients prospectively evaluated showed structural cardiac

abnormalities at rest, which correlated with the severity of cirrhosis<sup>2</sup>. However, the presence of these abnormalities is not sufficient to characterize cirrhotic cardiomyopathy. The criteria for diagnosis are not yet established or validated internationally. Clinical manifestations occur in conditions of stress. At rest, the heart is functionally normal. Hence, Doppler echocardiography at rest is often insufficient to characterize cirrhotic cardiomyopathy.

### Keywords

Heart Diseases / complications; Heart Disease / physiopathology; Liver Cirrhosis / complications; Liver Cirrhosis / physiopathology; Echocardiography.

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### References

1. Mota VG, Markman Filho B. Echocardiography in chronic liver disease: systematic review. *Arq Bras Cardiol.* 2013 Mar 22. [Epub ahead of print].
2. Silvestre OM, Bacal F, de Souza Ramos D, Andrade JL, Furtado M, Pugliese V, et al. Impact of the severity of end-stage liver disease in cardiac structure and function. *Ann Hepatol.* 2013;12(1):85-91.

### Reply

We are thankful to the statements of Silvestre et al<sup>1</sup>, with which we agree and have mentioned in the introduction to our manuscript. Recent reviews<sup>2,3</sup> that address this issue describe a number of abnormalities on Doppler echocardiography at rest, characterizing cirrhotic cardiomyopathy: E/A ratio < 1; E wave deceleration time > 200 ms, isovolumic relaxation time > 80ms, increased left atrial volume, decreased left

ventricular contractility, presence of wall hypokinesia and/or akinesia, increased myocardial mass, lowered ejection fraction (< 55%), among others.

Sincerely,

**Vitor Gomes Mota**  
**Brivaldo Markman Filho**

### References

1. Mota VG, Markman Filho B. O ecoDopplercardiograma na doença hepática crônica: revisão sistemática. *Arq Bras Cardiol.* 2013 Mar 22. [Epub ahead of print].
2. Zardi EM, Abatte A, Zardi DM, Dobrina A, Margiotta D, Van Tassel BW, et al. Cirrhotic cardiomyopathy. *J Am Coll Cardiol.* 2010;56(7):539-49.
3. Moller S, Henriksen JH. Cirrhotic cardiomyopathy. *J Hepatol.* 2010;53(1):179-90.