

Abstract Submitted
for the DFD13 Meeting of
The American Physical Society

The role of intraventricular vortices in the left ventricular filling?¹

PABLO MARTINEZ-LEGAZPI, University of California San Diego, JAVIER BERMEJO, YOLANDA BENITO, MARTA ALHAMA, RAQUEL YOTTI, CANDELAS PEREZ DEL VILLAR, ANA GONZALEZ-MANSILLA, ALICIA BARRIO, FRANCISCO FERNANDEZ-AVILES, JUAN CARLOS DEL ALAMO, Hospital General Universitario Gregorio Marañon — The generation of vortices during early filling is a salient feature of left ventricular hemodynamics. Existing clinical data suggest that these intraventricular vortices may facilitate pulling flow from the left atrium. To test this hypothesis, we have quantitatively dissected the contribution of the vortex to intraventricular pressure gradients by isolating its induced flow in ultrasound-derived data in 20 patients with non-ischemic dilated cardiomyopathy (NIDCM), 20 age-matched healthy controls and 20 patients with hypertrophied cardiomyopathy. We have observed that, in patients with NIDCM, the hemodynamic forces were shown to be partially supported by the flow inertia whereas that effect was minimized in healthy hearts. In patients with hypertrophied cardiomyopathy such effect was not observed.

¹Supported by grants, PIS09/02603, RD06/0010 (RECAVA), CM12/00273 (to CPV) and BA11/00067 (to JB) from the Instituto de Salud Carlos III, Spain. PML and JCA were partially supported by NIH grant 1R21 HL108268-01

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Date submitted: 02 Aug 2013

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