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### Permalink

<https://escholarship.org/uc/item/16p2d80k>

### Journal

JOURNAL OF THE AMERICAN COLLEGE OF CARDIOLOGY, 3(2)

### ISSN

0735-1097

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### Publication Date

1984

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Peer reviewed

**RELATION BETWEEN DOPPLER TRANSMITRAL DIASTOLIC FLOW  
AND LEFT VENTRICULAR FILLING**

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Measurement of flow velocity through the mitral valve (MV) by Doppler has been suggested as a method for evaluating left ventricular (LV) compliance. To determine if diastolic MV flow velocity is closely related to LV filling we obtained transmitral pulsed Doppler flow velocity recordings in 10 patients (pts) in whom digital subtraction LV angiograms were performed. Peak flow velocity in early diastole (PFVE) and peak flow velocity during atrial systole (PFVA) were measured from each Doppler flow tracing and the ratio of PFVA/PFVE (A/E RATIO) was calculated. LV volume changes during diastole were determined from videodensitometric analysis of digital LV angiograms and the percent LV volume change at 50% of total diastolic filling time was calculated. Mid-diastolic LV volume changes were closely correlated with PFVE ( $r = 0.92$ ) and the A/E RATIO ( $r=0.90$ ). Five of the 10 pts had completed at least 65% of LV diastolic filling by 50% of diastole and all had PFVE  $>40$  cm/sec and A/E RATIO  $<1.0$ . In contrast, the other 5 patients had reduced early and mid-diastolic filling so that less than 65% of the LV volume change had occurred by 50% of diastole and all five had PFVE  $<40$  cm/sec and A/E RATIO  $> 1.0$ . We conclude that 1) patients with abnormal diastolic LV filling have a depressed early diastolic filling velocity compensated by an augmented atrial flow velocity 2) Doppler transmitral diastolic flow measurements appear to be a useful noninvasive method to assess LV diastolic filling characteristics.