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Cardiac Triangle Mapping: A Novel Systems Approach for Non-invasive Evaluation of Left Ventricular End Diastolic Pressure. NIEMA PAHLEVAN, MELISSA RAMOS, RAY MATTHEWS, University of Southern California — Left ventricular end diastolic pressure (LVEDP) is an important measure of global left ventricle (LV) function. Elevated LVEDP is indicative of poor LV function in both heart failure with preserved ejection fraction and in heart failure with reduced ejection fraction. This highlights LVEDP's importance as quantitative biomarker for diagnosis, chronic monitoring, and evaluating response to therapy. Here, we introduce a new systems approach, called Cardiac Triangle Mapping (CTM), for non-invasive and instantaneous measurement of LVEDP. CTM uses arterial pressure waves and ECG to map the global ventricular function; hence, allowing computation of LVEDP. The accuracy and validity of CTM have been shown using retrospective clinical data. Here, we present the validity and accuracy of CTM method using data from a prospective clinical study at the Keck Medical Center of USC.

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