**ACCURATE, NONINVASIVE DIAGNOSIS OF CARDIOGENIC SHOCK BASED ON ECHOCARDIOGRAPHY RATHER THAN INVASIVE HEMODYNAMIC ASSESSMENT**

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Background: The diagnosis of cardiogenic shock (CS) currently requires invasive hemodynamic assessment with pulmonary artery catheterization (PAC). We developed a set of noninvasive diagnostic criteria for CS consisting solely of clinical and echocardiographic data points.

Methods: An expert panel selected candidate clinical and echocardiographic variables. These were examined in a retrospective derivation cohort of 122 consecutive patients with acute myocardial infarction (AMI) who underwent both PAC and echocardiography in a 24 hour period. Using traditional invasive criteria (cardiac index<2.2L/min/m2, wedge pressure 15mmHg, systolic blood pressure<90mmHg or requiring support, and urine output "30mL/hour) as the gold standard, the echocardiography-based criteria were optimized by assessing various combinations of the candidate variables. Final noninvasive criteria (Table) were then tested in a separate validation cohort of 90 consecutive patients undergoing PAC.

Results: In the derivation cohort, sensitivity, specificity, and accuracy were 83%, 82%, and 83%, respectively. In the validation cohort the corresponding values were 71%, 86%, and 81%, and in a subgroup with AMI (n=20) they were 71%, 85%, and 80%. Patients identified as having CS using the echocardiography-based criteria had the same in-hospital mortality rate as those identified using the invasive criteria

(both 29%).

Conclusion: CS can be accurately diagnosed without PAC using easily obtained clinical and echocardiographic data points. Prospective validation in the setting of simultaneous noninvasive and PAC measurements is needed.