

Title:

Clinical Characteristics and In-Hospital Mortality of the new high risk AHA/ACC Categories

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**Presenter*

Background

The new AHA/ACC classification of acute pulmonary embolism (PE) distinguishes high risk PE into cardiopulmonary failure (category D) and catastrophic PE (category E). This study aimed to describe a Pulmonary Embolism Response Team (PERT) cohort, focusing on these high-acuity populations.

Methods

We performed a descriptive analysis of 395 patients with acute PE recorded in a PERT database. Clinical risk markers, reperfusion therapies, and in-hospital mortality were assessed. Patient numbers and mortality rates were described separately for AHA/ACC categories D and E. Analyses used available data for each variable.

Results

Overall, 69 patients died during hospitalization (17.5%). Right ventricular dysfunction on echocardiography or computed tomography was present in 221/395 patients (55.9%), and elevated biomarkers were documented in 253/395 (64.1%). Among 387 patients with available age data, 62 (16.0%) were older than 80 years. Systemic thrombolysis was administered to

39/393 patients (9.9%), half-dose thrombolysis to 4/395 (1.0%), ultrasound-assisted catheter-directed thrombolysis to 13/395 (3.3%), percutaneous thrombectomy to 49/395 (12.4%), and surgical embolectomy to 10/395 (2.5%). Among 302 patients with available resuscitation data, 29 underwent cardiopulmonary resuscitation during hospitalization; 25 of these patients died (86.2%). Categories D and E comprised 20 (5.1%) and 24 patients (6.1%), respectively, with in-hospital mortality rates of 30.0% and 41.6% (**Figure 1**), which is considerable higher compared to patients classified as high risk based on the ESC 2019 guidelines (28.0%).

Conclusion

AHA/ACC categories D and E were associated with substantial in-hospital mortality in this PERT cohort and seems to improve risk stratification. Mortality was already high among patients with incipient cardiopulmonary failure, highlighting the clinical relevance of identifying this population. Further analyses are required to assess the incremental prognostic value of the new classification compared with established risk assessment approaches.

Figure 1:

