The new, high-sensitivity troponin T (hsTnT) assay may improve risk stratification of normotensive patients with acute pulmonary embolism (PE). We externally validated the prognostic value of hsTnT, and of the simplified Pulmonary Embolism Severity Index (sPESI), in a large multicenter cohort.

We prospectively examined 526 normotensive patients with acute PE; of those, 31 (5.9%) had an adverse 30-day outcome. The predefined hsTnT cutoff value of 14 pg/mL was associated with a high prognostic sensitivity and negative predictive value, comparable to those of the sPESI. Both hsTnT ≥14 pg/mL (OR, 4.97 [95% CI, 1.71-14.43]; P=0.003) and sPESI ≥1 point(s) (OR, 9.51 [2.24-40.29]; P=0.002) emerged, besides renal insufficiency (OR, 2.97 [1.42-6.22]; P=0.004), as predictors of early death or complications; in a multivariable model, they remained independent predictors of outcome (P=0.044 and 0.012, respectively). A total of 127 patients (24.1%) were identified as low risk by a sPESI of 0 and hsTnT <14 pg/mL; none of them had an adverse 30-day outcome. During 6-month follow-up, 52 patients (9.9%) died. Kaplan-Meier analysis illustrated that patients with hsTnT ≥14 pg/mL (P=0.001) and those with sPESI ≥1 (P<0.001) had a decreased probability of 6-month
survival. Patients with sPESI of 0 and hsTnT <14 pg/mL at baseline had a 42% reduction in the risk of dying (hazard ratio, 0.58 [0.01-0.42]; P=0.005).

The hsTnT assay and the sPESI improve risk stratification of acute PE. Combination of both modalities may yield additive prognostic information and particularly identify possible candidates for out-of-hospital treatment.