

**PROGNOSTIC SIGNIFICANCE OF MULTIDETECTOR CT IN
NORMOTENSIVE PATIENTS WITH PULMONARY EMBOLISM:
RESULTS OF THE PROTECT STUDY.**

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ABSTRACT

In patients with acute pulmonary embolism (PE), rapid and accurate risk assessment is paramount in selecting the appropriate treatment strategy. The prognostic value of right ventricular dysfunction (RVD) assessed by multidetector CT (MDCT) in normotensive patients with PE has lacked adequate validation.

The study defined MDCT-assessed RVD as a ratio of the RV to the left ventricle short axis diameter greater than 0.9. Outcomes assessed through 30 days after the diagnosis of PE included all-cause mortality and 'complicated course', which consisted of death from any cause, haemodynamic collapse or recurrent PE.

MDCT detected RVD in 533 (63%) of the 848 enrolled patients. Those with RVD on MDCT more frequently had echocardiographic RVD (31%) than those without RVD on MDCT (9.2%) ($p < 0.001$). Patients with RVD on MDCT had significantly higher brain natriuretic peptide (269 ± 447 vs 180 ± 457 pg/ml, $p < 0.001$) and troponin (0.10 ± 0.43 vs 0.03 ± 0.24 ng/ml, $p = 0.001$) levels in comparison with those without RVD on MDCT. During follow-up, death occurred in 25 patients with and in 13 patients without RVD on MDCT (4.7% vs 4.3%; $p = 0.93$).

Those with and those without RVD on MDCT had a similar frequency of complicated course (3.9% vs 2.3%; $p=0.30$).

The PROgnosTic valuE of CT study showed a relationship between RVD assessed by MDCT and other markers of cardiac dysfunction around the time of PE diagnosis, but did not demonstrate an association between MDCT-RVD and prognosis.
