

6.13 Assessing the role of Computed Tomography Pulmonary Angiograms and biomarkers in diagnosing right heart strain related to acute pulmonary embolisms

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Background: To assess whether Computed Tomography Pulmonary Angiogram (CTPA), troponin and NT-pro-BNP predict evidence of right heart strain (RHS) in patients with acute pulmonary embolism (PE) when compared with transthoracic echocardiography (TTE). **Methods:** 656 patients had CTPAs performed over 6 months at a tertiary university hospital. Studies positive for PE were then separated into those with and without reported CTPA evidence of RHS. TTE, troponin-T, NT-pro-BNP and D-Dimer were assessed and potential relationships explored. **Results:** 128 (19.5%) studies were positive for acute PE. 25 patients with RHS on CTPA had TTEs, with 16 showing evidence of RHS. 39 patients with PEs and no CTPA-reported RHS had TTEs, with 7 suggesting RHS. CTPAs showed a 69.6% sensitivity and 78.0% specificity in predicting RHS. NT-pro-BNP (cut-off 300pg/ml) and troponin-T (cut-off 34ng/L) showed higher sensitivity, 92.9% and 75% respectively, and lower specificity, 33.3% and 58% respectively, than CTPA. 329/658 (50%) had an alternative explanation for symptoms on CTPA, meaning only 30.5% of patients had no explanation for symptoms. **Conclusions:** CTPAs don't show reliable sensitivity and specificity in predicting RHS. Patients diagnosed with PE should get TTE regardless of whether RHS is evident on CTPA or not. **Keywords:** PE, CTPA, right heart strain, TTE **Conflicts of interest:** The authors have no conflicts of interest