Title: Prognostic value of red cell distribution width in patients with pulmonary embolism

Body: Elevated red blood cell distribution width (RDW) has been associated with adverse outcomes of heart failure and pulmonary hypertension. We speculated that a higher RDW would be independently associated with poor clinical outcomes in pulmonary embolism (PE) patients. A total of 702 consecutive patients with acute PE were evaluated. We collected each patient's base-line characteristics including RDW. The primary end-point was all-cause in hospital mortality. Receiver operating characteristic (ROC) analysis was performed to determine the optimal RDW cut-off levels with regard to prognosis. We used logistic regression to assess the association between RDW at the time of presentation and inhospital mortality after adjusting for patient (age, clinical and laboratory variables) factors. There was a graded increase in mortality rate with each RDW quartiles: 5.8\% in quartile I (<=13.6), 9.7 \% in quartile II (13.7-14.5\%), 13.1\% in quartile III (14.6-16.3\%) and 20\% in quartile IV (>16.3\%) (p for trends<0.001). Patients who died had higher baseline RDW values [16.1 \% (11.7-28.3) vs 14.5 \% (10.7-32.5) p< 0.001]. The optimal cutoff value of RDW for predicting inhospital mortality was >=15\% and the negative predictive value was 93\% for mortality. In multivariate regression analysis, RDW remained associated with an increased odds of death. RDW levels may provide a potential marker to predict outcome in PE patients.