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

Dr. Savas 23181 Ozsu savasozsu@gmail.com MD <sup>1</sup>, Dr. Yasin 23182 Abul abulyasin@yahoo.com <sup>1</sup>, Dr. Selda 23183 Gunaydin savasozsu@gmail.com <sup>1</sup>, Prof. Dr Asim 23184 Orem savasozsu@gmail.com <sup>2</sup> and Prof. Dr Tevfik 23185 Ozlu ozlutevfik@yahoo.com <sup>1</sup>. <sup>1</sup> Department of Chest, Karadeniz Technical University Faculty of Medicine, Trabzon, Turkey and <sup>2</sup> Department of Biochemistry, Karadeniz Technical University Faculty of Medicine, Trabzon, Turkey .

**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 in-hospital 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 ( $\leq 13.6$ ), 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 in-hospital mortality was  $\geq 15\%$  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.