

## Red Cell Distribution Width as a Predictor of Severity of Acute Pancreatitis

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### ABSTRACT

**Introduction and Objective:** Acute Pancreatitis (AP) is one of the most common surgical emergencies, a third of which becomes severe. Mortality rate of severe AP can reach up to 40%. Identification of those at risk of severe AP would allow early intervention to improve outcome Red cell distribution width (RDW), an indicator of systemic inflammation has been show to be effective at predicting mortality in AP. The objective of this study was to determine whether admission RDW can predict severity of AP.

**Materials and Methods:** A total of 74 patients admitted to Surgery Department in TUTH were included in this prospective study. Demographic data, admission time and laboratory parameters including RDW---CV were obtained from each patient at admission. Reassessment was done at 48 hours. The patients were followed up till discharge. Severity of AP was classified by the 2012 revised Atlanta criteria.

**Results:** A positive correlation between admission RDW---CV and severity of AP was found (Spearman's rho 0.246, p value 0.034). ROC analysis revealed that admission RDW was accurate at predicting severe AP (AUC 0.733, 95% CI 0.612 to 0.854, p value 0.001) but was not accurate at differentiating mild from moderate AP ( AUC 0.510, 95% CI 0.291 to 0.729, p value 0.932). The cut off value for detecting severe AP was 13.7% with sensitivity of 66.7%, specificity 68.1%, PPV of 54.5 and NPV of 78.

**Conclusion:** Admission RDW is as predictor of severe acute pancreatitis.

**Keywords:**Acute pancreatitis, severity, red cell Distribution width, Revised atlanta criteria.