



QUALITY OF CARE AND OUTCOMES ASSESSMENT

RED CELL DISTRIBUTION WIDTH PREDICTS ADVERSE LONG TERM OUTCOMES IN SUBJECTS WITH SUSPECTED CORONARY DISEASE

ACC Poster Contributions

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Background: Red cell distribution width (RDW) is a readily available estimate of circulating red cell size variation. High RDW has been associated with adverse outcomes in heart failure subjects and in a general population cohort. We hypothesized that RDW would be predictive of adverse outcomes in a population with suspected coronary disease

Methods: We studied 2584 patients undergoing coronary angiography (age 63 ± 11 years, 66 % male) and measured RDW as part of a blood panel. Patients were grouped as high or low RDW using the upper limit of normal value of 14.5% and were followed for the primary endpoint of all cause death for a mean period of 2.4 ± 1 years.

Results: There were 231 deaths during follow up. Patients with high baseline RDW (mean $16.0 \pm 1.9\%$) had worse prognosis compared to those with low RDW (mean $13.5 \pm 0.6\%$); (Kaplan Meier, log rank $p < 0.001$, Figure). Multivariate Cox regression analysis revealed that along with age, acute MI, treated hyperlipidemia, low EF ($< 40\%$), CAD severity and serum creatinine, RDW was an independent predictor of death with a HR of 1.29 (1.19-1.38) for each % point increase in RDW. Stratified analysis revealed that the effect of RDW on mortality persisted both in the presence (HR 1.28 (1.14-1.45)) and absence (HR 1.34 (1.17-1.54)) of anemia (Hb $< 12.5\text{g/dl}$).

Conclusion: Elevated red cell distribution width is predictive of long term mortality in patients undergoing investigation for coronary disease irrespective of anemia.

