Red Blood Cell Distribution Width and Cardiovascular Events in Patients with Stable Angina

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Background: Red blood cell Distribution Width (RDW) has an independent prognostic value in patients with heart failure and acute coronary syndrome. To date, no study had examined the correlation between RDW and MACE (major adverse cardiac events) rate among patient with stable angina pectoris and proven coronary artery disease.

Objectives:
1) To evaluate the association between RDW and one year MACE rate among stable angina patients.
2) To assess the association between the RDW and inflammatory markers among these patients.

Methods and Results: The data in this study was collected from the Tel Aviv Prospective Angiographic Survey (TAPAS). TAPAS is a prospective, single center registry which enrolls all patients undergoing cardiac catheterization at the Tel Aviv Medical Center (Tel Aviv, Israel). A total of 2414 patients with stable angina undergoing elective coronary angiography were included in our study. We divided the cohort into 2 groups according to the median RDW values (group 1 - RDW=12.9±0.47, group 2 - RDW=14.9±1.75, p<0.001). There was a significant increase in one year MACE rate among patients with high RDW (4% vs. 8%, p=0.001) There was a significant correlation between high RDW and inflammatory markers, such as high C-Reactive Protein (R=0.24, p<0.001), high fibrinogen level (R=0.19, p<0.001) and low Hemoglobin concentration (R= 0.18 p<0.001).

Conclusion: High Red blood cell Distribution Width is associated with an increased MACE rate and inflammatory markers among stable angina patients.