

High RDW and Increased Cardiovascular Events in Patients with Acute Coronary Syndrome

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Background: Red blood cell Distribution Width (RDW) might have a prognostic value in patients with heart failure and Acute Coronary Syndrome (ACS), possibly related to an increase inflammatory response.

Objectives:

- 1) To evaluate the association between RDW and one year MACE (major adverse cardiac events) rate among patients with ACS undergoing revascularization.
- 2) To assess the association between RDW and inflammatory markers among these patients.
- 3) To assess the impact of statins on this potential prognostic biomarker.

Methods and Results: A total of 1838 patients with ACS who underwent cardiac revascularization were included in the study. Of these patients, 814 were treated with statins prior to the acute event and 1024 were statin naive. We divided the cohort into 2 groups according to the median RDW values (group 1- RDW=12.9±0.45, group 2- RDW=14.8±1.9, $p<0.001$). There was a significant difference in the one year MACE rate among the 2 groups (4% vs. 10%, $p<0.001$). Among ACS patients who were treated with statins prior to the ischemic event, there was no correlation between RDW and MACE rate. There was a significant correlation between high RDW and inflammatory markers, such as high C-Reactive Protein ($R=0.17$, $p<0.001$), high fibrinogen level ($R=0.12$, $p<0.001$) and low Hemoglobin concentration ($R=0.15$, $p<0.001$).

Conclusion: High RDW is associated with an increased MACE rate and inflammatory markers. However, this correlation disappears in patients treated with statin therapy prior the ischemic event.

