

## Relation between Red Blood Cell Distribution Width and Mortality in Patients With Acute Myocardial Infarction

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**Background:** Increased red blood cell distribution width (RDW), a measure of the variability in size of the circulating erythrocytes, has been shown to be associated with adverse outcomes in patients (pts) with heart failure and with coronary disease. However, there is no information regarding the prognostic significance of RDW in the acute phase of acute myocardial infarction (AMI).

**Methods:** We performed a post hoc analysis of data from a prospective study. Baseline RDW was measured in 2095 pts admitted with AMI and followed for a median of 19 months. We used Cox proportional hazards models to examine the association between quintiles of RDW and all-cause mortality, adjusting for the Global Registry of Acute Coronary Events (GRACE) risk score and baseline hemoglobin.

**Results:** During the follow period 362 pts died. There was a graded positive association between increased RDW and mortality across quintiles of RDW (Figure). In a Cox model, the adjusted HRs of pts with RDW in the 5th, 4th, 3rd, and 2nd RDW quintile compared with pts in the 1st quintile were 1.0 [95% CI, 0.6 to 1.7], 1.5 [95% CI, 1.0-2.3], 1.9 [95% CI, 1.2 to 2.9] and 2.7 [95% CI, 1.8 to 4.0], respectively ( $P$  for trend  $< 0.0001$ ). The association between increased RDW and mortality remained highly significant in sensitivity analyses that excluded pts with anemia (Hb  $< 12$  g/dl) and pts with abnormally low ( $< 82 \mu\text{m}^3$ ) or high ( $> 96 \mu\text{m}^3$ ) mean corpuscular volume.

**Conclusions:** There is a graded independent relation between increased RDW and the risk of death in pts with AMI.

