Relationship between elevated leukocyte count and hospital clinical events in patients with acute coronary syndromes: findings from the Global Registry of Acute Coronary Events (GRACE)

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Background: Leukocyte count is a simple and universally available marker of inflammation. Patients with AMI or UA who present with an elevated leukocyte count are reported to be at high risk for the development of adverse outcomes. However, the association of this marker with in-hospital mortality in patients with 'other ACS' is unclear.

Methods and results: In this study, the association between admission leukocyte count and hospital mortality was examined in 3181 patients with ACS. Leukocyte count was divided into quintiles (Q) based on the distribution of the data. After controlling for age, sex and medical history, increasing leukocyte count was significantly associated with hospital mortality in patients with ACS. This association was seen irrespective of the type of ACS (Figure).

Conclusion: Initial leukocyte count is an independent predictor of hospital mortality in patients presenting with STEMI, NSTEMI, or UA.
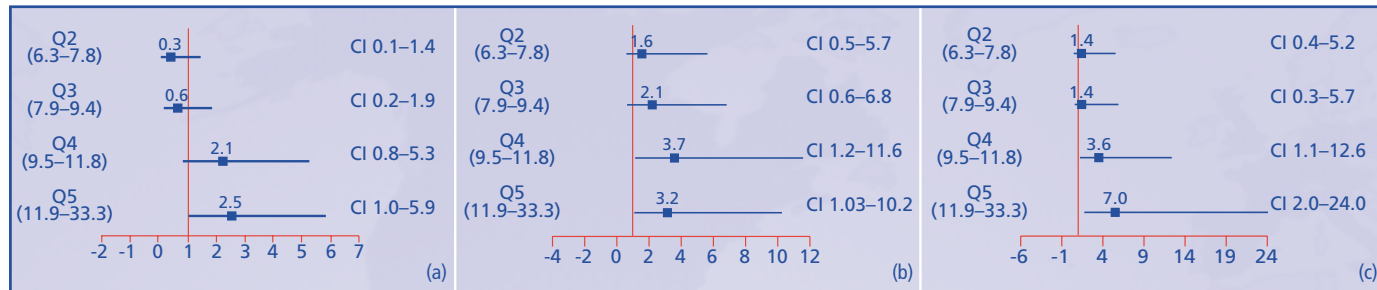

Figure. ORs and 95% CI for patients with a diagnosis of (a) STEMI (n=1098); (b) NSTEMI (n=980); (c) UA (n=1103). Q1 [1.0–6.2] = referent category