



Acute Coronary Syndromes

LOW PLATELET COUNT AND FATAL MYOCARDIAL INFARCTION: A POPULATION BASED ANALYSIS

Poster Contributions

Poster Hall B1

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Background: High platelet count has been causally linked to increased risk of fatal myocardial infarction (MI). However, the data on the possible association of low platelet count with fatal MI are limited.

Methods: This cohort study used data from the Third National Health and Nutrition Examination survey, 1988-94 (NHANES III), with follow-up through 2006. We categorized the 14,196 study participants into quartiles and used the middle 2 quartiles as the reference group to calculate age-adjusted and multivariable adjusted hazard ratios (HRs) for those with platelet count in the 1st quartile for MI and other causes of death.

Results: Over a median follow-up period of 14.4 years, there were a total of 2,962 deaths out of which 1,216 deaths were due to MI. Age-adjusted and multivariable adjusted HRs for fatal MI for those with platelet count in the first quartile were 1.37 (95% CI, 1.12-1.67, $P < 0.01$) and 1.38 (95% CI, 1.12-1.70, $P < 0.01$) respectively. HRs for mortality due to other causes are provided in the table.

Conclusion: In this large, representative study of US adults, we observed a significant association between low platelet count and increased risk of fatal MI. Possible explanations for this association include the presence of other comorbidities associated with low platelet count such as increased risk of bleeding, sepsis, liver failure and malignancy. The causal mechanisms underlying the association between low platelet count and increased risk of fatal MI need further evaluation.

Cause of Death	1st Quartile	
	Multivariable adjusted HR* (95% CI)	P - value
All-Cause	1.21 (1.06 - 1.39)	0.008
Myocardial Infarction	1.38 (1.12 - 1.70)	0.002
Stroke	1.56 (1.04 - 2.32)	0.03
Neoplasms	0.97 (0.74 - 1.27)	0.82
Other Causes	1.25 (0.94 - 1.65)	0.12

1st quartile (n = 3,570; platelet count range: 14,500 to 227,000/ μ L)

2nd and 3rd quartiles (n = 7,068; platelet count range: 227,500 to 314,000/ μ L)

4th quartile (n = 3,558; platelet count range: 314,500 to 928,500/ μ L)

*HRs adjusted for age, gender, race/ethnicity, body mass index, smoking status, alcohol use, physical activity, hypertension, diabetes mellitus, hypercholesterolemia