

The predictive role of early C-reactive protein values for long-term mortality among patients with acute coronary syndrome

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Introduction

The role of inflammation is known in genesis of atherosclerosis and consequently atherosclerotic cardiovascular disease (ASCVD) events. Data from previous research exposed significant relation between elevated plasma level of C-reactive protein (CRP) and prevalence of underlying atherosclerosis as well as risk of recurrent adverse cardiovascular events among patients with established ASCVD.

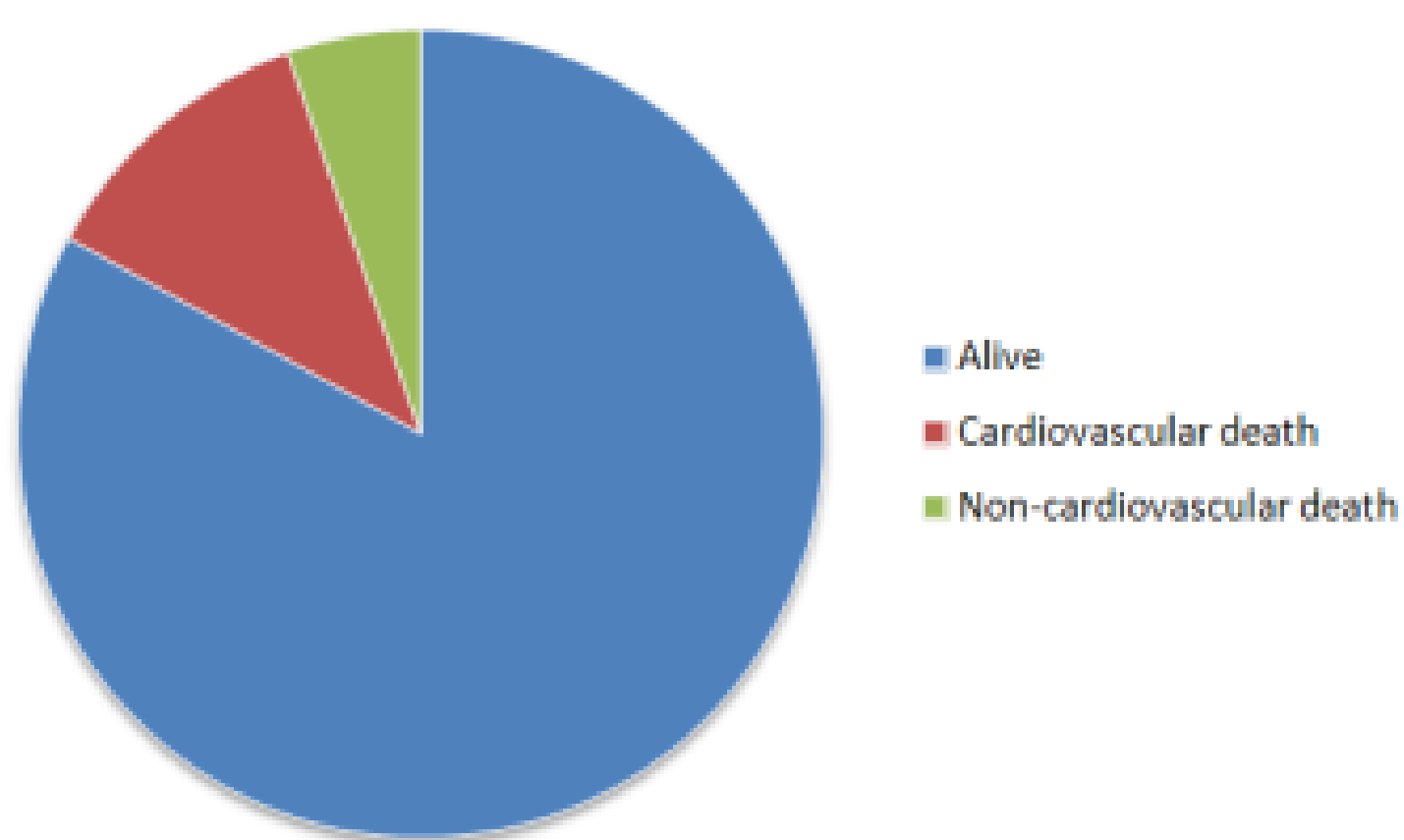
Goal

The primary aim of this study is to examine relation of early CRP values and all-cause mortality among patients with acute coronary syndrome (ACS) as well as difference in early CRP values among patients with cardiovascular and non-cardiovascular death.

Material and Methods

This single-center registry-based prospective research included 2536 patients with acute coronary syndrome who were hospitalized between January 2017 and December 2023 and had long-term follow up. Early CRP values were evaluated among 2303 of them at admission to the hospital (90.8%). The primary composite end point was all-cause mortality, contained of cardiovascular and non-cardiovascular mortality. We used Mann-Whitney U test to examine relation of early CRP values among this groups of patients. All the participants were exposed to percutaneous coronary intervention (PCI). Patients with proven infection were excluded.

Material and Methods



Results

A total of 462 patients (18.2%) died during the long-term follow up. Early CRP values were measured among 409 of them (88.5%); 289 (70.7%) of whom died due to cardiovascular death and 134 (29.3%) of whom died due to non-cardiovascular death. This study showed no significant difference in observed values of CRP between mortality groups (7.2 vs 7.0, $p=0.825$).

Results

However, results showed significant difference in observed values of CRP in group of patients with any-cause of mortality compared with the control group (median of CRP values: 7.6 vs 4.2, IQR 2.6 to 25.6 and 1.8 to 9.5, $p<0,0001$).

Conclusion

While some previous studies showed significant difference for risk-prediction following ACS due to early measured CRP values, this observational study showed no significant difference in observed CRP values between mortality groups. However, results showed significant difference in observed values of CRP among deceased patients compared with the control group. The disadvantage of this study is the non-uniform blood sampling according to pain onset. Furthermore, there are other inflammatory markers which should be measured at the admission to the hospital and compared among tested groups.

Reference

1. Alkouri A, Cybularz M, Mierke J, Nowack T, Biedermann J, Ulbrich S et al. The predictive role of early CRP values for one-year mortality in the first 2 d after acute myocardial infarction, Biomarkers.2022;27:3,293-298
2. Oprescu N, Micheu MM, Scafa-Udriste A, Popa-Fotea NM, Dorobantu M. Inflammatory markers in acute myocardial infarction and the correlation with the severity of coronary heart disease. Ann Med.2021 Dec;53(1):1041-1047.

