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The role of diabetes mellitus in the composition of coronary thrombi in patients presenting with acute ST-segment elevation myocardial infarction undergoing primary percutaneous coronary intervention.

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Abstract

BACKGROUND: Although diabetes mellitus (DM) is a predictor of poor outcomes in patients with ST-segment elevation myocardial infarction (STEMI), few studies have analyzed the impact of DM on the constituency of coronary thrombi.

OBJECTIVES: Comparing morphologic and histopathologic aspects of coronary thrombi in STEMI patients with and without DM who underwent primary percutaneous coronary intervention.

METHODS: All consecutive patients with STEMI admitted to our institution between April 2010 and December 2012 (n = 1,548) were considered for inclusion. Thrombus material was obtained by aspiration thrombectomy; morphologic and histopathologic aspects were assessed by 3 independent pathologists blinded to clinical characteristics and outcomes. Patients with DM were compared with those without DM. A sensitivity analysis was performed using a propensity score.

RESULTS: During the study period, coronary thrombi material from 259 patients was obtained, of whom 19% (n = 49) had diabetes. Diabetic patients were older (P = .10), had a higher frequency of hypertension (P < .01) and dyslipidemia (P = .03), and had a trend to a longer time from the onset of chest pain to hospital arrival (P = .08). The number of retrieved fragments, the size of the thrombi and its composition (leukocytes, fibrin, and erythrocytes percent), and thrombus age and color were similar between patients with or without DM. There were also no statistically significant differences in thrombus constituency of the propensity score-matched patients (n = 92).

CONCLUSIONS: In this study, morphologic and histopathologic constituency of coronary thrombi in the setting of a ST-elevation myocardial infarction was not significantly different between patients with or without DM. This finding was intriguing and deserves further investigation.

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