Prof.Dr. Cemşid Demiroğlu | The relation between coronary flow rate, plasma endothelin-1 concentrations, and clinical characteristics in patients with normal coronary arteries

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BACKGROUND:

Coronary slow flow (CSF) is characterized by delayed opacification of epicardial arteries in the absence of occlusive disease. In the present study, we aimed to investigate the relation between coronary flow rate, plasma endothelin-1 (ET-1) concentrations, and clinical characteristics in patients with normal coronary arteries.

METHODS:

The study population included 77 patients with angiographically normal coronary arteries who underwent coronary angiography on suspicion of ischemic heart disease due to typical chest pain or ischemic findings on treadmill exercise test or myocardial scintigraphy. Based on the Thrombolysis In Myocardial Infarction frame count (TFC), patients were grouped into those with normal coronary flow and those with slow coronary flow.

RESULTS:

Forty-eight (61.5%) patients were found to have CSF. Plasma ET-1 concentrations were significantly higher with the presence of CSF (P=.03). There were significant differences between plasma ET-1 concentrations, and mean TFC, TFC for left anterior descending coronary artery (LAD), TFC for left circumflex coronary artery (CX), and TFC for right coronary artery separately in patients with and without CSF (P=.033, P<.001, P<.001, P<.001, and P<.001, respectively). Mean TFC, TFC for LAD, and TFC for CX, and ET-1 concentrations were significantly higher in smokers than in nonsmokers (P<.001, P<.001, P=.004, and P=.033, respectively). However, logistic regression analysis suggested that ET-1 concentration was not an independent determinant of CSF.

CONCLUSIONS:

Although there is a significant relation between ET-1 concentrations and coronary flow rate, ET-1 concentrations are not sufficient to determine the presence of CSF. Smoking is strongly associated with CSF, TFC, and increased ET-1 concentrations.PMID:18606377 [PubMed - indexed for MEDLINE]