Abstract: P1386

High velocities in coronary arteries during transthoracic echocardiography can predict 3-year adverse outcomes

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Topic(s):
Echocardiography, Other

Citation:
European Heart Journal - Cardiovascular Imaging (2019) 20 (Supplement 1), i961

Background: Transthoracic visualization of long portions of the three major coronary arteries have previously been described in detail. However, there is a lack of information about the prognostic value of identifying local high velocity in coronary arteries measured during echocardiography at rest. The aim of the study was to determine the prognostic value of local high flow velocity in the left main (LM), left anterior descending (LAD) or circumflex (Cx) coronary arteries measured by Doppler method during routine echocardiography.

Methods: In a prospective, single-center study, we evaluated 316 consecutive patients (169 women, 57±13 years old) who underwent routine echocardiography with additional scans for coronary flow to be included in the study. Ninety-eight patients (Group 1) had sites of aliasing flow with a velocity of more than 65 cm/s in the proximal parts, 24 patients (Group 2) had high flow in the middle parts of the arteries. Group 3 consisted of 194 patients with normal flow in visualized sites. Eighty-eight patients (28%) had an established diagnosis of CAD before echocardiography. Stress-echo and coronary angiography were recommended as a clinical decision. All measurements were obtained off-line blind to other data. Death, nonfatal myocardial infarction (MI), and coronary bypass surgery were defined as major adverse cardiac events (MACE). The period of follow-up was 3 years.

Results: Over the follow-up period, the ability to contact twenty-six patients (8%) was lost. Deaths occurred more frequently in patients with a high local coronary velocity (6.3% vs. 1.7%; p<0.04). Patients in Group 1 had the highest rates of cardiac death or MI (18.6% vs. 8.7% vs. 1.7%; p<0.00001 between Group 1, 2, 3, respectively). The rates of MACE were 43% vs. 22% vs. 2%; p<0.0000001.

Conclusion: Patients with local acceleration in LM and/or proximal parts of LAD/Cx observed during non-invasive routine echocardiography at rest have a serious prognosis for death/MI, >6% per year.
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