Imaging

YOUNG PATIENTS WITH A FAMILY HISTORY OF CORONARY ARTERY DISEASE HAVE HIGHER PREVALENCE, INCREASED SEVERITY, AND WORSE PROGNOSIS OF CORONARY ATHEROSCLEROSIS: RESULTS FROM 6308 PATIENTS IN THE PROSPECTIVE MULTINATIONAL CONFIRM REGISTRY (CORONARY CT ANGIOGRAPHY EVALUATION FOR CLINICAL OUTCOMES: AN INTERNATIONAL MULTICENTER REGISTRY)

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Background: Although family history (FH) of premature coronary artery disease (CAD) has been shown to imply worsened prognosis, the prevalence, severity and prognosis of coronary atherosclerosis in young patients with FH of CAD has been inadequately studied to date.

Methods: From 27125 consecutive patients undergoing coronary computed tomography angiography, 6308 young patients--defined as male <55 and female <65 years of age--without known CAD in the CONFIRM registry were identified. Obstructive CAD was defined as >50% luminal stenosis in a coronary artery >2mm diameter. Risk-adjusted logistic regression and Cox proportional hazards models were employed to compare patients with and without FH of CAD for risk of subsequent myocardial infarction (MI)(n = 42).

Results: As compared to individuals without FH of CAD (FH-)(n = 4327), those with FH of CAD (FH+)(n = 1981) were younger (49+8 vs. 50+9 years, P < 0.001) with higher prevalence of dyslipidemia (55% vs. 51%, P = 0.007) and smoking (22% vs. 15%, P < 0.001). Compared to FH- patients, FH+ patients exhibited higher frequency of any coronary atherosclerosis (40% vs. 30%, P < 0.001) and obstructive CAD (11% vs. 7%, P < 0.001), with multivariable odds of FH+ increasing the likelihood of obstructive CAD (odds ratio = 1.71, 95% confidence interval (CI) = 1.42-2.07, P < 0.001). At a follow-up of 2.3+1.2 years, FH+ was the strongest risk-adjusted clinical predictor of incident MI (hazard ratio = 2.60, 95%CI = 1.41-4.79, P = 0.002).

Conclusion: Young patients with FH of CAD possess higher prevalence of coronary atherosclerosis, obstructive CAD and incident MI. Compared to other clinical variables, FH in young patients is the strongest clinical predictor of future unheralded MI.