

Impact of Lipid Profiles & Risk Factors on Coronary Artery Spasm as assessed by Ach Provocation test

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Background: Dyslipidemia can be associated with endothelial dysfunction and subsequent cardiovascular disease. We investigated whether the dyslipidemia and classical coronary risk factors can negatively impact on coronary artery spasm (CAS) by intracoronary acetylcholine (Ach) provocation test. **Methods:** A total 3,034 consecutive patients (pts) underwent Ach provocation test by incremental doses of 20, 50, 100 ug into the left coronary artery were enrolled. Significant CAS was defined as focal or diffuse severe transient luminal narrowing (>70%) with or without chest pain or ST-T change on ECG. Traditional coronary risk factors and lipid profiles were compared between the CAS negative group ($n=1789$) and CAS positive group ($n=1245$). **Results:** Baseline clinical characteristics showed that male gender, elderly, diabetes, smokers and myocardial bridge on angiogram were more frequently found in CAS positive group. Interestingly, HDL-cholesterol was associated with positive CAS, but not total cholesterol, LDL-cholesterol and triglyceride. In multivariate analysis, male gender, old age, diabetes, and myocardial bridge remained significant but there was a trend in impact of smoking on CAS. HDL-cholesterol was consistently associated with positive CAS (table). **Conclusions:** In our study, we found that male, elderly, diabetes, presence of myocardial bridge, and HDL-cholesterol were main predictors of endothelial dysfunction and subsequent CAS as assessed by Ach provocation test.

Table: Comparison of clinical characteristics and lipid profiles between Non-CAS and CAS.

Variables, N (%)	Non-CAS (n=1789)	CAS (n=1245)	P value	P value*	OR(95% CI)
Gender (male)	523 (42.0)	934 (52.2)	< 0.001	0.006	1.339(1.089-1.648)
Age, year	52.72±13.36	55.83±11.56	< 0.001	< 0.001	1.029(1.021-1.036)
Hypertension	560 (45.0)	853 (47.7)	0.142	0.391	0.933 (0.798-1.092)
Diabetes	141 (11.3)	244 (13.6)	0.060	0.048	1.314(1.003-1.723)
Smoking	321 (25.8)	579 (32.4)	< 0.001	0.060	1.249(0.991-1.574)
Current alcohol	347(28.1)	565 (31.8)	0.031	0.597	1.049(0.717-1.537)
Myocardial bridge	147 (11.8)	475 (26.6)	< 0.001	< 0.001	2.711(2.161-3.402)
Lipid panel					
Triglyceride, mg/dl	130.62±92.95	134.57±95.02	0.298	0.476	1.000(0.999-1.001)
LDL-cholesterol, mg/dl	115.95±32.10	114.41±34.90	0.293	0.544	0.999(0.997-1.002)
HDL-cholesterol-mg/dl	52.61±13.74	50.40±12.87	< 0.001	0.026	0.993 (0.987-1.000)

P value*: adjusted by gender, age, diabetes, smoking, current alcohol, myocardial bridge.