Epicardial fat thickness, measured by cardiac MRI, might be a predictor of myocardial ischemia in subjects with type 2 diabetes

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Background and Objectives: Epicardial fat (EF) is the true visceral fat situated on the free wall of the heart and seems to contribute to coronary atherosclerosis. Although several studies revealed that echocardiographically measured EF thickness was associated with prevalent myocardial infarction, ultrasonographical measurement may be not the optimal technique for the quantification of EF. This study investigates whether EF thickness, measured by cardiac MRI, could be a predictor of silent myocardial ischemia in asymptomatic type 2 diabetic subjects. **Methods and Results:** 48 patients (28 males and 20 females), with a mean age of 53.96±7.5 years, were studied. An experienced radiologist performed an EF thickness measurement using cardiac MRI and an EF area calculation. Silent myocardial ischemia was defined as myocardial perfusion abnormality in cardiac MRI. Carotid arterial IMT was also measured. A strong positive correlation between measured EF thickness and calculated EF area (r=0.581, $p<0.001$) was found. The patients were divided into 2 groups according to the fourth quartile of EF thickness (Group I <13.3 mm; Group II>or=13.3 mm). No significant differences in demographic characteristics were found between the two groups. Between the two groups, the mean and maximal carotid IMT ($p=0.015$ and $p=0.029$, respectively) as well as the presence of myocardial ischemia ($p=0.025$) were statistically different. Significant correlations were demonstrated between EF thickness and waist hip ratio (r=0.308, $p=0.033$). EF thickness was the best predictor of myocardial ischemia ($p=0.063$, odds ratio 5.752) despite no independent determinant of silent myocardial ischemia analyzed by multivariate logistic regression analysis. **Conclusion:** Epicaridal fat thickness is a good indicator of visceral fat on the heart wall and might be an independent predictor of myocardial ischemia.

Risk of Coronary Heart Disease according to Diabetes Duration in Korea: the Korean National Health and Nutrition Examination Survey, 2005

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Introduction: Many studies have suggested that coronary heart disease (CHD) may developed more frequently in people with diabetes of longer duration. However, there have been some debates about this issue and there have been few studies about diabetes duration and CHD in Far-East Asian population. **Population and Methods:** This study was based on the data obtained from the third Korea National Health and Nutrition examination Survey (KNHANES III) among non-institutionalized civilians in the Republic of Korea, which was conducted by the Korean Ministry of Health and Welfare in 2005. A total of 34,145 individuals from these sampling frames were included in the health interview survey; among them, 5,531 persons aged 18 to 99 years were identified as participants in our study, with laboratory test and nutritional survey data. Trained interviewers visited participant's homes and administered a standardized questionnaire on daily life style. The participants were, also, asked to recall a physician's diagnosis of CHD (angina or myocardial infraction). **Results:** Study population was 45 (18-99) years-old, including 2,368 men and 3,163 women. Relative risk for CHD was 1.51 (0.64-3.59) (not significant) in diabetes with duration of 0-1 year, 2.27 (1.14-4.54) ($p=0.020$) in diabetes with duration of 1-5 years, and 3.29 (1.78-6.08) ($p<0.001$) in diabetes with duration >5 years with non-diabetes as a control after adjusting for age and sex. Even after adjusting for age, sex, current smoking, waist circumference, presence of hypertension, triglyceride, and HDL-cholesterol, relative risk for CHD was 2.89 (1.55-5.42) ($p=0.001$) in diabetes with duration >5 years with non-diabetes as a control. **Conclusions:** The data showed that with increase of diabetes duration, CHD prevalence increased in Korean men and women. Recently detected diabetes (duration, 0-1 year) did not show the difference in CHD prevalence compared to non-diabetes. However, diabetes with duration >5 years showed about 2.9-fold increase of CHD compared to non-diabetes after adjusting for several cardiovascular risk factors.