

92. The LDL-C/Apo B Ratio Predicts Coronary Artery Disease in Patients Younger Than 65 Years With Low LDL-C

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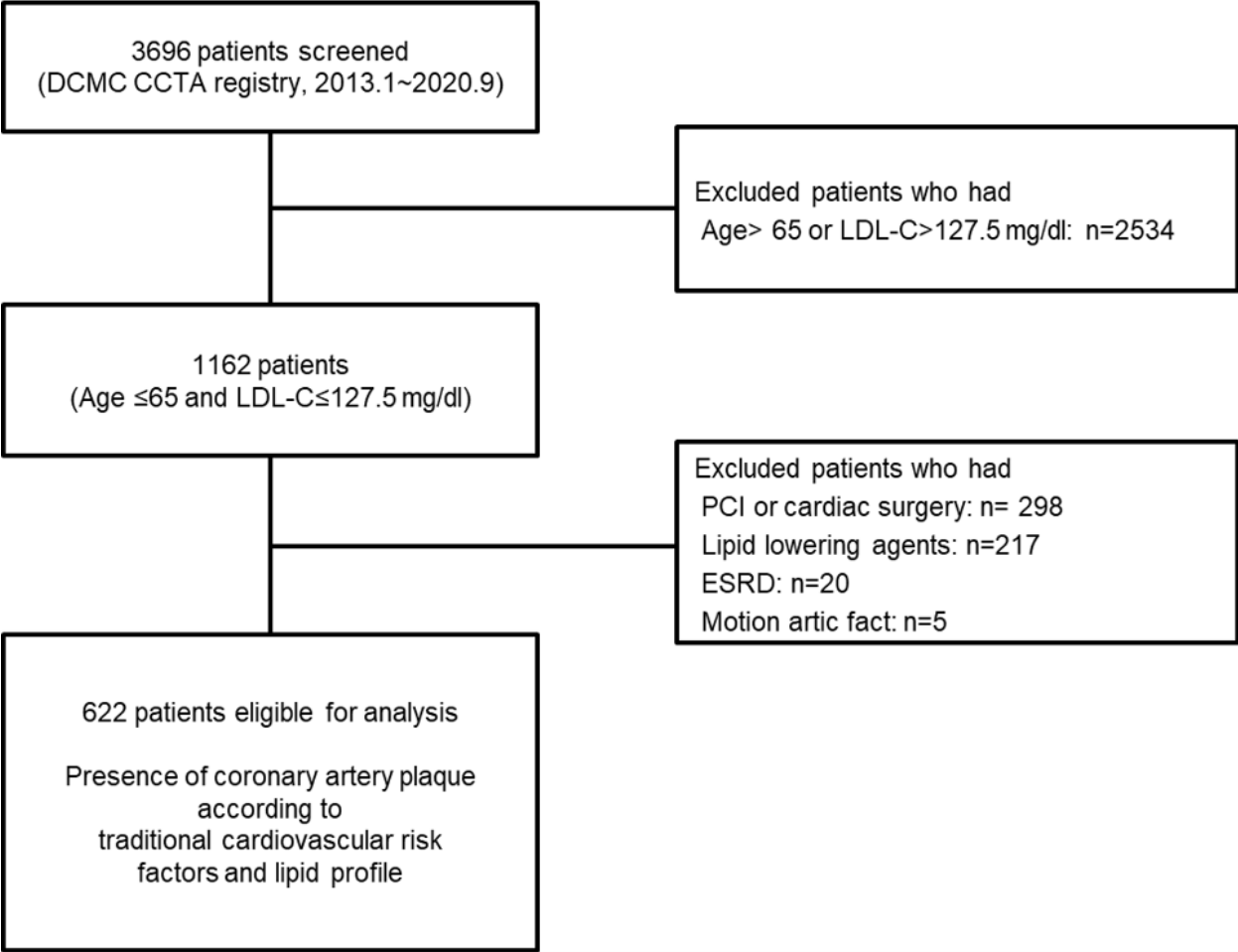
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Background: High low-density lipoprotein cholesterol (LDL-C) levels and old age are major risk factors for coronary artery disease. However, the risk factors for coronary artery disease in relatively young patients with low LDL-C levels have not been elucidated. Therefore, we performed this study to evaluate the risk factors of coronary artery disease, in patients younger than 65 years with low LDL-C (LDL-C <127.5 mg/dL).

Methods: This study included 622 statin naive patients <65 years with low LDL-C levels who underwent coronary computed tomographic angiography. We performed multivariate logistic regression analysis to evaluate the risk factors of atherosclerosis, defined as the presence of any coronary plaque. In addition to traditional cardiovascular risk factors, the covariate also included lipid profiles (LDL-C, high-density lipoprotein cholesterol, triglyceride, apolipoprotein B (Apo B)/apolipoprotein A1 (Apo A1) ratio, LDL-C/Apo B ratio, and lipoprotein (a)).

Results: The mean age of the 622 patients was 54.4 ± 8.9 years and the mean LDL-C level of 622 patients was 91.0 ± 23.1 mg/dL. Multivariate regression analysis showed that age (odds ratio [OR]: 1.108; 95% confidence interval [CI]: 1.076–1.140), male sex (OR: 3.912; 95% CI: 2.443–6.264), diabetes mellitus (OR: 2.354; 95% CI: 1.369–4.048), and hypertension (OR: 2.260; 95% CI: 1.446–3.532) were associated with atherosclerosis. A high LDL-C/Apo B ratio was a negative predictor of atherosclerosis (OR: 0.277; 95% CI: 0.077–0.994) (all $p < 0.05$).

Conclusion: A low LDL-C/Apo B ratio is associated with the development of coronary atherosclerosis in patients <65 years with low LDL-C levels.



Clinical Implications: In patients younger than 65 years with low LDL-C (LDL-C <127.5 mg/dL), the LDL-C/Apolipoprotein B ratio showed greater predictive accuracy for the development of coronary artery disease compared to other lipid profiles. These findings support the detection and treatment of a low LDL-C/apolipoprotein B ratio for preventing the development of atherosclerosis in relatively young patients with low LDL-C.