Insufficient lipid lowering therapy could not bring favorable prognostic effect in high risk patients who were functionally deferred percutaneous coronary intervention

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Introduction: Deferral of percutaneous coronary intervention (PCI) of a functionally insignificant stenosis is associated with favorable long-term prognoses. However, previous reports revealed that patients with fractional flow reserve (FFR) 0.81–0.85 had higher cardiovascular adverse event rates than those with FFR >0.85. Numbers of large clinical trials established the lower, the better strategy for low-density lipoprotein cholesterol (LDL-C) management for patients after PCI. However, in the real clinical practice, the achievement rate of target LDL-C is often insufficient in patients with atherosclerotic risk factors who were functionally deferred PCI.

Purpose: We aimed to examine optimal LDL-C management for patients with intermediate coronary stenosis deferred PCI by FFR measurement.

Methods: This observational study included 293 consecutive patients with coronary stenosis deferred PCI due to greater FFR than 0.80. We separately analyzed 90 patients with 0.81–0.85 of FFR and 203 patients with >0.85. Patients in each group were further classified into 2 groups based on LDL-C level at one year after FFR measurement; the Lower LDL-C group (<100 mg/dL) and the Higher LDL-C group (>100 mg/dL). The primary endpoint was major adverse cardiovascular and cerebrovascular events (MACCE) including death, non-fatal myocardial infarction, ischemic stroke, heart failure hospitalization and unplanned revascularization.

Results: Patients with FFR 0.81–0.85 had a significantly higher MACCE rate than those with FFR >0.85 (hazard ratio (HR): 1.77, 95% confidence interval (CI): 1.02–3.07, p=0.043). In patients with FFR 0.81–0.85, the Lower LDL-C group (n-=53) had a significantly lower rate of the primary endpoint than the Higher LDL-C group (HR: 0.41, 95% CI: 0.18–0.97, Log-rank p=0.036, Figure A). Whereas, there was no significant difference in the event rate between 2 groups in patients with FFR >0.85 (Log-rank p=0.42, Figure B).

Conclusion: Uncontrolled LDL-C level was associated with higher MACCE rate in patients who were deferred PCI due to FFR 0.81–0.85. These results suggested that even in patients who were deferred PCI, those with coronary artery stenosis of lower FFR value should receive strict LDL-C lowering therapy with close monitoring.

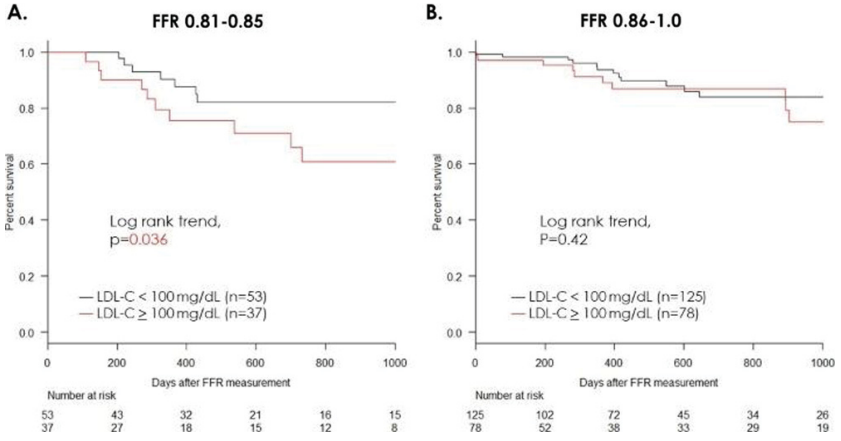

Figure 1