論 文 要 旨

Validity of a Novel Method for Estimating Low-Density Lipoprotein Cholesterol Levels in Cardiovascular Disease Patients Treated with Statins

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Aim: The Friedewald equation is the standard method for estimating low-density lipoprotein cholesterol (LDL-C) levels [LDL-C(F)] and fixes the ratio of triglyceride (TG) to very LDL-C at 5. However, this has been reported to underestimate LDL-C, particularly in patients with LDL-C <70 mg/dL. A novel method for LDL-C estimation [LDL-C(M)] using an adjustable factor instead of a fixed value of 5 has recently been proposed. The purpose of this study was to validate LDL-C(M) in Japanese patients with cardiovascular disease (CVD) treated with statins.

Methods: In 385 consecutive CVD patients treated with statins, LDL-C(M) and LDL-C(F) levels were compared with directly measured LDL-C [LDL-C(D)].

Results: Mean LDL-C(D), LDL-C(F), and LDL-C(M) were 81.7 ± 25.5, 76.4 ± 24.6, and 79.9 ± 24.5 mg/dL, respectively. In all patients, both LDL-C(F) and LDL-C(M) were significantly correlated with LDL-C(D) [LDL-C(F) vs. LDL-C(D): $R = 0.974$, $p < 0.001$; LDL-C(M) vs. LDL-C(D): $R = 0.987$, $p < 0.001$]. In patients with LDL-C(D) <70 mg/dL, LDL-C(M) showed a better correlation with LDL-C(D) compared with LDL-C(F) [LDL-C(M) vs. LDL-C(D): $R = 0.935$, $p < 0.001$; LDL-C(F) vs. LDL-C(D): $R = 0.868$, $p < 0.001$]. In contrast, the correlation of LDL-C(D) with LDL-C(M) or LDL-C(F) was similar in patients with LDL-C(D) ≥70 mg/dL.

Conclusions: In Japanese patients with CVD treated with statins, LDL-C level estimated by this novel method might be more accurate than those estimated using the Friedewald equation for LDL-C levels <70 mg/dL.