

## 論 文 要 旨

### Validity of a Novel Method for Estimation of Low-Density Lipoprotein Cholesterol Levels in Diabetic Patients

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**Aim:** Low-density lipoprotein cholesterol (LDL-C) is routinely estimated using the Friedewald equation [LDL-C(F)]. A novel method for LDL-C [LDL-C(M)] estimation recently proposed by Martin et al. was reported to be more accurate than the Friedewald formula in subjects in the United States. The validity of LDL-C(M) in different races and patients with diabetes mellitus (DM) has not been elucidated. The purpose of this study was to validate the LDL-C(M) estimates in Japanese population with type 2 DM by comparing with LDL-C(F) and directly measured LDL-C [LDL-C(D)].

**Methods:** Both LDL-C(M) and LDL-C(F) levels were compared against LDL-C(D) measured by selective solubilization method in 1,828 Japanese patients with type 2 DM.

**Results:** On linear regression analysis, LDL-C(M) showed a stronger correlation than that shown by LDL-C(F) ( $R = 0.979$  vs.  $R = 0.953$ , respectively) with LDL-C(D). We further analyzed the effect of serum triglyceride (TG) concentrations on the accuracy of LDL-C(F) and LDL-C(M). Although LDL-C levels showed a positive correlation with TG levels, the LDL-C(F) levels tended to show a greater divergence from LDL-C(D) levels than that shown by LDL-C(M) with changes in TG levels.

**Conclusion:** We for the first time demonstrated a more usefulness of LDL-C level estimated by Martin's method than that estimated by the Friedewald equation in Japanese patients with DM.