

Supplementary Materials

Table S1. Odds Ratios (ORs) and 95% Confidence Interval (95%CI) of severe coronary artery disease (defined as Gensini score ≥ 50) according to categories of 25-hydroxyvitamin D (25(OH)D).

	Very Low (< 12 ng/ml) (n = 169)	Low (12–20 ng/ml) (n = 273)	Marginal (20–30 ng/ml) (n = 284)	Normal (≥ 30 ng/ml) (n = 289)	P for trend
Median Levels (ng/ml)	9	16	25	37	
Cases/Non-cases	104 / 65	141 / 132	150 / 134	112 / 177	
Model a (Age, sex)	1.00 (Reference)	0.67 (0.45– 1.00)	0.71 (0.48– 1.05)	0.40 (0.27–0.59)	<0.001
Model b (Full adj.)	1.00 (Reference)	0.75 (0.50– 1.14)	0.72 (0.47– 1.09)	0.45 (0.29–0.68)	<0.001

^a Adjusted for age and gender^b Additionally adjusted for body mass index (BMI), smoking status, opium use, work type, neutrophil-to-lymphocyte ratio (NLR), total daily energy intake, physical activity, HDL-C, having a history of hypertension, prediabetes, and type 2 diabetes mellitus, or dyslipidemia, as well as use of antidiabetic, anti-inflammatory, antihyperlipidemic, antihypertensive, or anticoagulant medications.**Table S2. Odds Ratios (ORs) and 95% Confidence Interval (95%CI) of severe coronary artery disease (defined as Gensini score ≥ 70) according to categories of 25-hydroxyvitamin D (25(OH)D).**

	Very Low (< 12 ng/ml) (n = 169)	Low (12–20 ng/ml) (n = 273)	Marginal (20–30 ng/ml) (n = 284)	Normal (≥ 30 ng/ml) (n = 289)	P for trend
Median Levels (ng/ml)	9	16	25	37	
Cases/Non-cases	65 / 104	99 / 174	105 / 179	75 / 214	
Model a (Age, sex)	1.00 (Reference)	0.92 (0.62– 1.37)	0.95 (0.64– 1.41)	0.57 (0.38–0.85)	0.004
Model b (Full adj.)	1.00 (Reference)	1.03 (0.68– 1.57)	0.97 (0.64– 1.47)	0.63 (0.41–0.96)	0.010

^a Adjusted for age and gender^b Additionally adjusted for body mass index (BMI), smoking status, opium use, work type, neutrophil-to-lymphocyte ratio (NLR), total daily energy intake, physical activity, HDL-C, having a history of hypertension, prediabetes, and type 2 diabetes mellitus, or dyslipidemia, as well as use of antidiabetic, anti-inflammatory, antihyperlipidemic, antihypertensive, or anticoagulant medications.

Table S3. Mediation Analysis of Serum 25-Hydroxyvitamin D (25(OH)D) Levels and Severe Coronary Artery Disease (CAD) (defined as Gensini score ≥ 50) odds according to the impact of Cholesterol Levels.

Biomarker	Proportion of total effect mediated (mean (95% CI))
Serum HDL-C (mg/dL)	12.22% (8.67%, 23.47%)
Serum LDL-C (mg/dL)	1.13% (-0.79%, 2.10%)
Serum Total Cholesterol (mg/dL)	1.06% (-0.74%, 1.97%)
Serum triglyceride (mg/dL)	0.10% (-0.07%, 0.18%)

Table S4. Mediation Analysis of Serum 25-Hydroxyvitamin D (25(OH)D) Levels and Severe Coronary Artery Disease (CAD) (defined as Gensini score ≥ 70) odds according to the impact of Cholesterol Levels.

Biomarker	Proportion of total effect mediated (mean (95% CI))
Serum HDL-C (mg/dL)	26.07% (16.46%, 65.75%)
Serum LDL-C (mg/dL)	2.57% (-1.59%, 6.64%)
Serum Total Cholesterol (mg/dL)	1.27% (-0.78%, 3.21%)
Serum triglyceride (mg/dL)	0.34% (-0.21%, 0.90%)