

25-Hydroxyvitamin D Serum Levels and Acute Coronary Syndromes - A pilot study

litvac, Shelly¹; Katz, Amos²; Yosefey, Chaim²; Schlacover, Vladimir²; Fytlovich, Shlomo³; Gefel, Dov⁴

¹School of Nutritional Sciences, Faculty of Agriculture, Food and Environment, Hebrew University of Jerusalem, Rehovot, Israel; ²Barzilai Medical Center, Cardiology, Faculty of Health Sciences, Ben Gurion University of the Negev, Ashkelon, Israel; ³Barzilai Medical Center, Medical Laboratory Division, Ashkelon, Israel; ⁴Barzilai Medical Center, Department of Medicine C, Faculty of Health Sciences, Ben Gurion University of the Negev, Ashkelon, Israel

Background: The association between 25-hydroxyvitamin D [25(OH)D] serum levels and ischemic heart disease is controversial. Objective: To evaluate the association between serum vitamin D levels and acute coronary syndromes (ACS).

Methods: Prospective case control study of consecutive patients with ACS. Consecutive age matched non cardiac patients comprise the control group. A blood sample for 25-hydroxyvitamin D level was drawn for each patient during the first 3 days of the hospitalization.

Results: 40 ACS patients and 40 control patients were included in the study; mean age of both groups was 57 years, male gender - 82%. Patient distribution: ACS pts - unstable angina (UA) - 9, non ST elevation myocardial infarction (NSTEMI) - 14, ST elevation myocardial infarction (STEMI) - 17. Mean 25(OH)D level was 24.8 + 7.8 ng/ml, (range # - # ng/ml), 74% of ACS cases had hypovitaminosis D (<30 ng/ml). Mean 25(OH)D among ACS cases was significantly lower than the control group: 22.4 + 6.6 ng/ml vs. 27.1 +8.3 ng/ml respectively (P = 0.007) .

Subjects with hypovitaminosis D were at increased risk for ACS compared to those with normal 25(OH)D levels (odd ratio [OR], 3.9; 95% CI, 1.26-12.16; P = 0.02) using a conditional logistic regression adjustment for conventional risk factors. Subjects with deficiency levels (<21 ng/ml) were at significantly higher risk for ACS after adjusting for conventional risk factors (OR, 7.2; 95% CI, 1.8-29.06; P = 0.005). For each 1ng/ml increment in 25(OH)D level, there was a significant decrease in risk only in the NSTEMI patients (multivariable-adjusted OR, 0.828; 95% CI, 0.72-0.94; P = 0.004).

Conclusions: Hypovitaminosis D is associated with increased risk for ACS, even after adjustment for traditional risk factors for IHD. There is association between Hypovitaminosis D and NSTEMI rather than with UA or STEMI patients. Further studies are warranted.