Relation of severe deficiency of vitamin D to cardiovascular mortality during acute coronary syndromes.

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Abstract

Vitamin D deficiency is associated with risk for a first cardiovascular event in the general population, possibly because of inflammation, insulin resistance, and neurohumoral activation. However, its relation with outcomes in acute coronary syndromes has not been reported. To test the hypothesis that severe deficiency of vitamin D is independently associated with cardiovascular mortality during ACS, 206 patients admitted for unstable angina, non-ST-segment elevation myocardial infarction, or ST-segment elevation acute myocardial infarction had 25-hydroxyvitamin D serum levels measured at admission. Severe vitamin D deficiency was defined a priori as a value \( \leq 10 \text{ ng/ml} \). The average concentration of vitamin D was \( 20 \pm 8.2 \text{ ng/ml} \), and 10% of patients were severely deficient (95% confidence interval 6.6% to 15%). Cardiovascular mortality during hospitalization took place in 14 patients, an incidence of 6.8%. Patients with severe vitamin D deficiency had in-hospital cardiovascular mortality of 24%, significantly higher than the 4.9% observed in the remaining patients (relative risk 4.3, 95% confidence interval 1.8 to 10, \( p = 0.001 \)). After adjustment for Global Registry of Acute Coronary Events (GRACE) score, Gensini angiographic score, and potential confounding variables, severe deficiency of vitamin D remained an independent predictor of in-hospital cardiovascular mortality (odds ratio 14, 95% confidence interval 1.2 to 158, \( p = 0.03 \)). In conclusion, severe vitamin D deficiency is independently associated with in-hospital cardiovascular mortality in patients with acute coronary syndromes.

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