

Combination of low free testosterone and low vitamin D predicts mortality in older men referred for coronary angiography.

CONTEXT: Low levels of 25-hydroxyvitamin D (25(OH)D) and free testosterone (FT) are both associated with increased mortality. This study explores a complex interplay of vitamin D and androgen metabolism suggesting that a deficiency of both hormones may be associated with a poor clinical outcome.

OBJECTIVE: To evaluate the impact of parallel FT and 25(OH)D deficiency in a large cohort of older men.

DESIGN: We measured total testosterone (TT), SHBG, and 25(OH)D levels in 2069 men who were routinely referred for coronary angiography.

MAIN OUTCOME MEASURES: Cox proportional hazard ratios (HRs) (with 95% confidence intervals) for mortality from all cardiovascular causes according to combined deficiency of FT and 25(OH)D.

RESULTS: In multivariate adjusted analyses, we found an increased risk for all-cause mortality, cardiovascular and non-cardiovascular mortality in the lowest FT (HR 1.26 [1.03-1.54], 1.24 [0.96-1.60], and 1.39 [1.00-1.93], respectively) and 25(OH)D quartile (HR 1.77 [1.41-2.14], 1.89 [1.38-2.60] respectively) compared to men in higher FT and 25(OH)D quartiles. There was no independent association between FT and 25(OH)D. Multivariate adjusted HRs progressively increased with the number of hormones (FT and 25(OH)D) in the lowest quartile (0-1): 1.60 [1.60-2.79] for all cause, 1.77 [1.23-2.55] for cardiovascular, and 2.33 [1.45-3.47] for non-cardiovascular mortality respectively.

CONCLUSION: A combined deficiency of FT and 25(OH)D is significantly associated with fatal events in a large cohort of men referred for coronary angiography. © 2012 Blackwell Publishing Ltd.

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