Association between thyroid dysfunction and venous thromboembolism in the elderly: a prospective cohort study

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BACKGROUND
Venous thromboembolism (VTE) and subclinical thyroid dysfunction (SCTD) are both common in elderly patients. SCTD has been related to a hypercoagulable state and increased thromboembolic risk. However, prospective data on the relationship between SCTD and VTE are lacking.

OBJECTIVES
To investigate the relationship between SCTD and recurrent VTE (rVTE), all-cause mortality, and thrombophilic biomarkers.

PATIENTS
Elderly participants with VTE.

METHODS
In a prospective multicenter cohort, thyroid hormones and thrombophilic biomarkers were measured 1 year after acute VTE, as both may be influenced by acute thrombosis. We defined subclinical hypothyroidism (SHypo) as elevated thyroid stimulating hormone levels (TSH=4.50-19.99 mIU/l), and subclinical hyperthyroidism (SHyper) as TSH<0.45, both with normal free thyroxine levels. Outcomes were incidence of rVTE and overall mortality during follow-up starting after the 1-year blood sampling.

RESULTS
Of 561 participants (58% with anticoagulation), 6% had SHypo and 5% SHyper. After 20.8 months of mean follow-up, 9% developed rVTE and 10% died. rVTE incidence rate was 7.2 (95% confidence interval: 2.7-19.2) per 100 patient-years in SHypo, 0.0 (0.0-7.6) in SHyper and 5.9 (4.4-7.8) in euthyroid participants. In multivariate analyses, the sub-hazard ratio [SHR] for rVTE was 0.00 (0.00-0.58) in SHyper and 1.50 (0.52-4.34) in SHypo compared to euthyroids, without increased thrombophilic biomarkers. SHyper (HR...
0.80, 0.23-2.81) and SHypo (HR 0.99, 0.30-3.29) were not associated with mortality.

CONCLUSION
In elderly patients, SHyper may be associated with lower rVTE risks. SHypo showed a non-statistically significant pattern of an association with rVTE, without increased mortality or differences in thrombophilic biomarkers. This article is protected by copyright. All rights reserved.