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HIGHER THROMBUS BURDEN IN PATIENTS WITH SUBCLINICAL HYPOTHYROIDISM AFTER NON ST ELEVATION ACUTE CORONARY SYNDROME

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Introduction After an acute coronary syndrome, presence of subclinical hypothyroidism (SCH) has been associated with increased risk of further thrombotic events. We aimed to evaluate platelet dependent thrombus (PDT) formation in patients after non-ST elevation acute coronary syndrome (NSTE-ACS) in relation to their thyroid status.

Methods We studied 70 patients 1 week after troponin positive NSTE-ACS. They were all treated according to current AHA/ESC guidelines including 300 mg loading dose followed by 75 mg each of aspirin and clopidogrel. Patients with known thyroid disease were excluded. All patients underwent ex-vivo Badimon chamber assay to assess PDT. TSH, FT4 and FT3 were measured in all individuals. Those with TSH >4.0 mU/l and normal FT4 were classed as having SCH (n=12) whereas individuals with normal TSH and FT4 were classed as being euthyroid (n=58).

Results Baseline characteristics like age, gender, BMI, history of diabetes mellitus, blood pressure and previous vascular disease were similar between the groups. The SCH group had increased PDT (thrombus area μ^2/mm: mean±SD, 23 608±10 498 vs 16 661±10 902, p=0.02) when compared to the euthyroid group. Serum TSH (β co-efficient 0.28) and presence of diabetes (β co-efficient 0.29) were the only independent predictors of PDT in multiple regression analysis (p<0.005).

Conclusions Patients after NSTE-ACS demonstrated increased thrombus formation in the presence of SCH despite optimal recommended secondary prevention therapy. This may explain the increased risk of further thrombotic events. Future trials need to be performed to assess the effect of individualised anti-thrombotic as well as thyroid hormone replacement therapy to reduce atherothrombotic risk in this population.

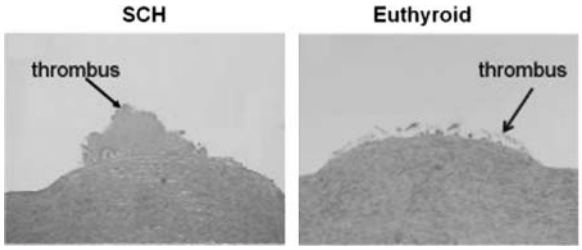

Figure 1 Post NSTE-ACS presence of SCH is associated with Higher thrombus formation when compared to euthyroid status.