



HYPERTHYROIDISM

Transesophageal echocardiograms (TES) can predict risk of blood clots in the heart in hyperthyroid patients with atrial fibrillation

BACKGROUND

Hyperthyroidism is a risk factor for the development of atrial fibrillation, a common rhythm disturbance of the heart. Atrial fibrillation may result in blood clots forming in the upper chambers of the heart, and these clots may travel from the heart (embolization) to other organs such as the brain, where the clots may cause a stroke. Often patients with atrial fibrillation will be placed on blood thinner medications (anticoagulants) to reduce the risk of strokes, but the anticoagulants may increase the risk of major bleeding episodes. Therefore, a method that can detect the blood clots in the heart before they embolize would allow anticoagulants to be used more selectively in patients with atrial fibrillation. Transesophageal echocardiography (TES), in which an ultrasound probe is threaded through the mouth into the esophagus where it passes next to the heart, is a sensitive method for detecting blood clots in the heart. The goal of this study was to see if TES correlated with clinical risk factors for clot embolization and could better determine which patients would benefit from anticoagulation.

THE FULL ARTICLE TITLE

De Souza MV et al. Atrial fibrillation & hyperthyroidism: relation between transesophageal markers of a thrombogenic milieu and clinical risk factors for thromboembolism. *Clin Endocrinol*. September 26, 2011 [Epub ahead of print]. doi: 10.1111/j.1365-2265.2011.04232.x.

SUMMARY OF THE STUDY

A total of 31 patients, aged 18-65 years, with severe hyperthyroidism and atrial fibrillation were studied. About half of the patients had atrial fibrillation for 6 or more months. High blood pressure and a history of congestive heart failure, both independent risk factors for atrial

fibrillation, were present in 68% and 58% of the patients, respectively. Clinical risk for blood clots independent of the hyperthyroidism was based on a scoring system called CHADS2 (Congestive heart failure, Hypertension, Age >75 years, Diabetes, previous Strokes). Based on this score, 23% of the patients were in a low risk group for blood clots, 19% moderate risk and 58% were at high risk. The scores in the individual patients were compared to the results of the TES. Using strict criteria for who should be treated with anticoagulants to reduce the risk of embolization of blood clots, 45% of the patients required anticoagulants. There was no correlation between the CHADS2 score and the risks determined by TES. There was a strong correlation with the duration of atrial fibrillation, as the risk for embolization increased the longer the patient had atrial fibrillation.

WHAT ARE THE IMPLICATIONS OF THIS STUDY?

TES is a sensitive technique for determining the risk for clot embolization in patients with hyperthyroidism and atrial fibrillation. The use of TES may be helpful in this regard, but it is expensive and there are potential risks to the procedure. Also, TES only looks at the heart at one point in time and a blood clot may develop at a later time. Therefore, it is unlikely that this procedure will become the standard of care in the decision as to whether anticoagulants should or should not be used in a patient with atrial fibrillation associated with hyperthyroidism.

— Glenn Braunstein, MD

ATA THYROID BROCHURE LINKS

Hyperthyroidism: http://thyroid.org/patients/patient_brochures/hyperthyroidism.html

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HYPERTHYROIDISM, continued

ABBREVIATIONS & DEFINITIONS

Atrial fibrillation: an irregular heart rhythm due to abnormal electrical impulses passing from the upper chamber of the heart (atria) to the lower chamber (ventricles). It is one of the most common arrhythmias that occur in patients with hyperthyroidism.

Hyperthyroidism: a condition where the thyroid gland is overactive and produces too much thyroid hormone. Hyperthyroidism may be treated with antithyroid meds (Methimazole, Propylthiouracil), radioactive iodine or surgery.

Transesophageal echocardiography (TES): a procedure in which a small ultrasound probe is put down the

esophagus in order to visualize the chambers of the heart, especially the left atrium where blood clots can form.

Embolization: when a clot forms in a vein, there is a risk of a piece of the clot breaking off and ending up blocking off another blood vessel. This is called embolization and is most concerning with it happens in the brain, causing a stroke.

Anticoagulants: blood thinning drugs that help to avoid clots. The most common oral anticoagulant is Coumadin.