Should We Think Hyperthyroidism in Supraventricular Tachycardia Patient?: A Case Report
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Background
Supraventricular Tachycardia (SVT) is a common arrhythmia found in emergency room. SVT can be caused by many diseases including hyperthyroidism. Although the association between thyroid dysfunction and SVT is not well elucidated, approximately 2-20% of hyperthyroid patients have SVT as heart rhythm disturbance.

Case Illustration
A 60 years old male presented to the hospital with dizziness and palpitation. He never takes any medicine before. There was no neck swelling, normal eyeballs, no cardiac murmur, and lungs were clear on physical examination. The electrocardiogram revealed SVT which was reverted to sinus rhythm with frequent supraventricular extrasystole after administration of intravenous digoxin. The laboratory findings revealed hyperthyroidism. He was treated with propylthiouracil and propranolol. The patient responded well to the treatment with no further recurrence of SVT.

Discussion
Sinus tachycardia is the most common form of arrhythmia in hyperthyroid patients. SVT has been reported less commonly. It is an umbrella term used to describe tachycardia, the mechanism of which involves tissue from the His bundle or above. Thyroid dysfunction affects the prevalence of SVT by similar mechanisms that increases the risk of atrial fibrillation. It is more common in men and elderly. Ectopic beats resulting in conduction delay can initiate re-entrant tachycardia. Increased autonomic tone also influence tachyarrhythmia associated with enhanced automaticity. The common symptom is palpitation. Guidelines are available for the treatment of SVT. These recommend a thyroid-function test (TFT) especially on the case of inappropriate sinus tachycardia or premature extra beats. It is most commonly done in elderly patients. An untreated hyperthyroidism can lead to persistent tachycardia. Correction of the thyroid dysfunction is crucial. Anti-thyroid drugs remained cornerstone in the management of hyperthyroidism.

Conclusion
TFT needs to be considered in patients with SVT considering tendency of clinically significant arrhythmia in those with thyroid dysfunction.

Keywords: supraventricular tachycardia, hyperthyroidism

Table 1. Thyroid function test results

<table>
<thead>
<tr>
<th>Test</th>
<th>Result</th>
<th>Normal Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>FT4</td>
<td>2.81 ng/dL</td>
<td>0.9-2.0</td>
</tr>
<tr>
<td>TSHs</td>
<td>&lt;0.005 uIU/L</td>
<td>0.4-7.0</td>
</tr>
</tbody>
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References