THYROID EMERGENCIES

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Disclosures

• Quantia - webinars
Our patient:

- 45 year old female presents to ER with shortness of breath.
- Pulse is 180, BP 175/60, Temperature 104.0 F
- She is confused
- Has visible goiter
- Stare and exophthalmos
Is she in thyroid storm?

• Described in 1926-Lahey
• “the crisis of exophthalmic goiter”
• Burch and Wartofsky Scoring system
• Mortality 10-30%


Signs & Symptoms:

• Bone loss
• Psychosis, Mania, Agitation
• Insomnia
• Hand tremor
• Excessive sweating
• Heat intolerance
• Weight loss despite increased appetite
• Diarrhea
• Fine hair and Hair loss
• Palpitations
• Atrial fibrillation
• Muscle weakness (due to inflammation of muscles)
• Exophthalmos aka proptosis
Think thyroid storm

- More common in women
- Underlying Grave’s disease
- Older patients with autonomous nodular disease
- Usually a precipitating cause


DDX of hyperthyroidism

- Iatrogenic
- Multinodular
- Thyroiditis
- Grave’s Disease
- Single nodule
- Thyrotoxicosis factitia
- Other
Triad of Grave's Disease

- Hyperthyroidism: (TSI, TRAB)
- Ophthalmopathy (50%): diplopia, conjunctival irritation, ophthalmoplegia (may need steroids)
- Dermopathy
- Look for other autoimmune diseases and exam findings
Laboratory Evaluation

- Suppressed TSH (<0.05 uU/ml)
- Elevated Free T4 and/or Free T3

<table>
<thead>
<tr>
<th>T3:T4</th>
<th>Condition</th>
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<tbody>
<tr>
<td>&gt; 20</td>
<td>Graves' Disease</td>
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<tr>
<td></td>
<td>Toxic MN Goiter</td>
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<tr>
<td>&lt; 20</td>
<td>Non-thyroid illness</td>
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<tr>
<td></td>
<td>Thyroiditis</td>
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<td>Exogenous thyroxine</td>
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Pathogenesis

- An autoimmune phenomenon – presentation determined by ratio of antibodies

<table>
<thead>
<tr>
<th>Antibody</th>
<th>Condition</th>
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<tbody>
<tr>
<td>Thyroid Stimulation Ab (TSAb)</td>
<td>Graves' Disease</td>
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<tr>
<td>Thyroid Stimulation Blocking Ab (TSBAb)</td>
<td>Autoimmune Hypothyroidism (Hashimoto’s)</td>
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### Treatment

- PTU: 500-1000mg load po or 400-600mg per rectum q6h
- SSKI 5 drops q6h
- B-blocker: esmolol 300mg iv then 100mg q 8 or propranolol 60-120mg q4-6 hours
- Hydrocortisone 100mg q8hours
- Cholestyramine 1-4 g twice a day
- Supportive care
- Address precipitating event


### Other options

- Plasma exchange
- Surgery (more common in iodine deficient areas)
- Slowly wean off antithyroid drugs
Next patient

- 75 year old male found unconscious on floor of home
- Brought to ER
- T 96, P 50, BP 90/60
- Unresponsive
- Sallow, edematous
- Reflexes delayed in upper extremities

What is the possible causes for his unresponsiveness?

- Stroke
- MI
- Overdose
- Adrenal insufficiency
- Seizure
- Hypothyroidism
- Other
Lab review

- TSH 90 ulU/ml (0.34-5.66 ulU/ml)
- FT4 0.1 ng/dl (0.52-1.21ng/dl)
- Na 125 mg/dl (135-145 mg/dl)

Myxedema Coma

- Stress Dose Steroids first
- 200-400mcg levothyroxine iv (lower dose if cardiac history)
- Then 1.6mcg/kg levothyroxine reduced by 25-50% if given iv.
- T3 5-20mcg with maintenance of 2.5-10mcg q 8 hours

References