Endocrinological Emergencies

Barbara Kilian, MD
UCSF

Top 4

Why these four?
- not easily recognized
- If missed, high morbidity and mortality

“"It's quite modern what I do and it may feel a little strange at first, but I think, if you're open, then you might enjoy it.""
Case 1 (cont)

“ABC’sVO2Monitor”
EKG
FS
IVF
Bloodwork
CXR
Temperature
History
Physical Exam
CT head/ Chest /Abd/pelv
V/Q,
Pressors
Central Line
CVP monitor
Antibiotics
**Differential Diagnosis**

- Adrenal Crisis
- Anticholinergic Toxicity
- Anxiety
- CHF/APE
- DT’s
- DKA
- Heat Stroke
- Munchausen
- NMS
- Panic Disorder
- Pheochromocytoma
- Septic Shock
- SSRI Toxicity
- Sympathomimetic Toxicity
- Thyroid Storm
- Withdrawal Syndromes

**Labs**

- Sodium: 11.2
- Creatinine: 1.3
- Urea: 273
- Glucose: 139
- Total Bilirubin: 4.7
- Calcium: 108
- MCV: 22
- MCH: 0.9
- Ca++: 10.8
- Mg+: 2.0
- Phos: 2.9

- Utox: negative
- Upreg: negative
- Udip: negative
- TSH, T3, T4: Pending

**3 Tenets Therapy**

I. Supportive

II. Treat Precipitating Event

III. Block circulating thyroid hormone

**Medications**

- **Dosing:**
  - **PTU:** 600-1000mg loading dose, then 300mg qid.
  - **Methimazole:** 60 mg, then 5-15mg daily.
  - **Iodine:** 0.5-1 gram NaI, IV over 12 hours.
  - **Propanalol:** 80-120mg q 6hr
  - **Propylthiouracil (PTU)**
  - **Methimazole**
  - **Iodine**
  - **Propanalol**
  - **Beta Blockers**
  - **End Organ**
**What about**

Inhibits TH release
Association with Adrenal Crisis
Improved Outcomes*
Little Harm

**Key Points:**

- Early recognition key.
- Don’t wait for labs
- Adrenal Insufficiency
- Start treatment early
- PTU is DOC
- Only give iodine ONE HOUR after PTU has been given.
- Apathetic thyroidism (Masked hyperthyroidism)

**Case 2**

32 yo HIV+ male, last CD4 825 with undetectable viral load p/w 4 days of crampy abdominal pain, with n/v/d, now worse in flanks.

VS: 80/42 119 12 98% RA, afebrile

**What to do first?**

“ABCsIVO2monitor”

“ABCsIVO2monitorCXRUalabsEKGFSLNES”
Progress:

2L NS bolus → 82/47 115

Labs

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<thead>
<tr>
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<td>31</td>
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</table>
Ca++: 9.2
Mg+: 3.1
Phos: 2.1

Differential Dx

- Adrenal Insufficiency
- Anorexia
- Appendicitis
- Cholecystitis
- Gastroenteritis
- HIV-related
- Medication
- Metabolic (Glucose, Na, Ca, etc)
- Sepsis
- UTI’s
- ..........
Treatment

I. IVF (NS or D5NS)

II. Correct electrolyte imbalance

III. Hydrocortisone (100mg IVP q 6h) Or Dexamethasone (4-10mg IVP)

IV. Fludrocortisone (0.1mg QD)

V. Treat underlying cause, if known

Caveats

- High index of suspicion
- Replace steroids
- Look for underlying causes
- Aggressive IV fluids
- Check glucose frequently
- Remember to check TSH/T4/T3

Case 3

69 yo F BIBEMS for ?AMS

110/89  59  9 98% NRB
Differential Diagnosis

- Euthryoid Sick syndrome
- Hypothermia
- Hypoventilation Syndrome
- Sepsis
- Mental disorder

Labs

Ca++: 8.9
Mg+: 2.8
Phos: 2.2

<table>
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<th>Parameter</th>
<th>Value</th>
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<td>Trop:</td>
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<tr>
<td>CK-MB:</td>
<td>1.9</td>
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<td>CPK:</td>
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Therapy

Replace thyroid hormone: 500-800mcg IV levothyroxine, then 50-100mcg/day.

- Low vs High dose?
- IV T3?
- Stress steroids? Hydrocortisone 10-15mg/hour
- Warming

Caveats

- Carpal Tunnel Syndrome
- Unknown frequency= high index of suspicion
- Don’t forget stress steroids
- Don’t forget the left shift
- Hypercapnia=intubation*
- Adjust any meds for decreased metabolism
- Coumadin adjustment

Case 4

66 yo M with DM, HTN, BPH, CAD p/w polyuria, polydipsia, frequency and generalized weakness.

VS: 152/79 105 14 97% RA 100.1
FS: High
Labs

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<tr>
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<td>Phos</td>
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<tr>
<td>Acetone</td>
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ABG: 7.034/7.9/128/2.1/2.1/-28.6
Udp: LE, glucose, protein +; otw neg
CXR: negative

UA: Pos LE, protein, glucose, 25-50 WBC, <5 RBC's

Therapy

I. IVF
II. Causes of DKA
III. Insulin

IVF:
NS vs ½ NS vs D5 NS

Abx:
Use local antibiogram.

Insulin:
Bolus*: .1U/Kg
Drip: .1U/Kg/hour
Caveats

• Ketones vs betahydroxybuterate
• Potassium: 20-40 mEq/L to each L of IVF
• Check labs frequently
• ABG vs VBG
• Bicarbonate
• Don’t forget to look for underlying causes!