



# EM Shorts

By Stephanie Taft, MD

## Acute Decompensated Heart Failure

By Stephen Smalley, MD  
Regions Emergency Medicine Conference  
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- \* Precipitating events — important to identify
- 1. Patient-related factors
  - non-adherence to medicine
  - excessive salt intake
  - physical, emotional and environmental stress
  - cardiac toxins (etoh, cocaine)
- 2. Acute cardiac events
  - dysrhythmias such as afib — lose atrial kick, 30% drop in output
  - uncontrolled HTN
  - AMI, myocardial ischemia
  - valvular disease (e.g. progressive mitral regurg)
- 3. Acute noncardiac events
  - PE (low CO leads to hypercoagulable state)
  - anemia/bleeding
  - systemic infection such as pneumonia (patients with CHF are more susceptible)
  - thyroid disorder
- 4. Adverse effects of meds:
  - NSAID's (e.g. on diuretic or ACE-I and start taking ibuprofen)
  - Steroids
  - cardiac depressant meds
- \* BNP can be elevated in other conditions (e.g. PE, ESRD)

- \* Many conditions mimic heart failure (HF) -- diagnosis is harder than you think, need to integrate all the findings
- \* History: prior history of HF (LR 5.8, most sensitive/specific), PND (most specific), orthopnea, dyspnea on exertion (most sensitive), weight gain, increasing edema
- \* Physical Exam: Increased jugular venous pressure (JVP), edema, rales, S3, S4
- \* S3 -- most specific, not very sensitive
- \* JVP--best combination of sensitivity and specificity
- \* BNP < 100 -- high negative predictive value, > 400 consistent with HF; BNP 100-400 = gray zone
- \* NT Pro-BNP, cut off varies with age, BNP < 300 pg/mL excludes HF
  - age <50 BNP >450 pg/mL
  - age 50-75 BNP > 900 pg/mL
  - age > 75 BNP >1800 pg/mL
  - morbidly obese pts have lower BNP
  - BNP higher in renal patients
- \* Hospitalization: consider if worsened congestion (even without dyspnea); signs/symptoms of pulmonary or systemic congest

- tion, even in absence of weight gain; associated comorbid conditions (PE, Pneumonia, DKA), repeated ICD firings
- \* Tx: NTG actually helps facilitate diuresis in addition to reducing pressure, furosemide 40 mg = bumex 1mg = torsemide 20 mg
- \* PO diuretics don't work well because of gut edema -- poor absorption of meds
- \* Cardiogenic shock and presors
  - Dobutamine — beta-1 agonist, inotrope but causes drop in BP and tachycardia
  - Milrinone -- inotrope, decreases afterload and preload, may cause severe and sustained hypotension
  - Dopamine good for inotropy and increases BP but causes tachycardia
- \* "Wet and cold" — fluid overload but poor perfusion — dopamine/dobutamine
- \* "Dry and cold" -- overdiuresis but poor perfusion -- may need fluid challenge
- \* Wet and warm -- diuresis, if no response, may give metolazone (must be given 30 min prior to lasix)
- \* Dry and warm = goal

### Question of the Month:

Which city has more golfers per capita than any other city in the country?



### Question from Last Month:

When the German "blitz" began over England in WW2, what was done at the London Zoo to protect the general British population?

All the venomous snakes were killed to prevent any accidental escape\*



## Painful lump after arterial catheterization

By Autumn Erwin, MD  
Critical Case Conference  
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- Ultrasound is test of choice
- Hematoma -- can get symptoms of femoral nerve compression which takes longer period of time to improve than simple hematoma
- Pseudoaneurysm (continued flow in area from puncture site, confined by surrounding tissue, not wall thinning) -- most occur within 1-3 days, up to 7 days
- AV fistula (vein crosses in front of artery and

- gets punctured during cath) -- requires surgical repair (note bruit or thrill on exam)
- DVT or arterial thrombosis (usually from brachial approach)
- Infected hematoma a few days later
- Treatment: Consult IR — Thrombin injection under ultrasound into neck of pseudoaneurysm

- INR > 2 -- pseudoaneurysm may not close, repeat US 24 hours later, if not fully closed, will re-inject
- If neck is too wide, thrombin injection will not be successful and will need surgery
- May need conscious sedation for thrombin injection if large hematoma associated with site because can be very painful