Academic Half Day: Endocarditis
Facilitator Guide

1:00-1:05 Theory Burst
1:05-2:25 Cases
2:25-2:30 Questions for the expert

Educational Objectives (at the end of this AHD you will be able to…)

- Compare and contrast different populations at risk for Endocarditis
- Recognize patients who require surgical intervention for Endocarditis
- Assemble a plan for a patient with endocarditis
- Initiate appropriate prophylaxis for a patient at increased risk of endocarditis

Case 1: Mr. Stephan Bovis is a 48-year-old male with h/o IVDU presents with "passing out". He reports he was just watching TV when he lost consciousness. He denies any symptoms prior to episode and has never happened before. He reports mild SOB for last week. SOB present at all times but worse with exertion. Also has noticed 3 weeks of increased fatigue, intermittent fevers, and chills. He currently uses IV heroin daily, binge drinks ETOH and smokes 1 ppd. No other PMH, PSH, and no meds.

Physical Exam:
Vitals: T 101, BP 95/45, HR 105, RR 20, 98% RA
Gen: Diaphoretic, mild discomfort
HEENT: PERRL, normal conjunctivae, MMM, multiple dental caries
CV: Tachycardic, regular rhythm, nl S1/S2, no murmur appreciated, no JVD, no edema
Resp: CTAB
Abd: Soft, NT/ND, +BS
Skin: Track marks present with no surrounding erythema or warmth

1. **What is syncope and how might this patient have syncopized? Why are you worried about endocarditis? What else is on your differential diagnosis?**

2. **Why does IVDU create risk for endocarditis? What other patients are at risk for endocarditis?**

3. **What else would you look for on physical exam?**

<u>General:</u>

<u>HEENT:</u>

<u>CV:</u>

<u>Abd/Renal:</u>

<u>MSK:</u>

<u>Skin</u>:

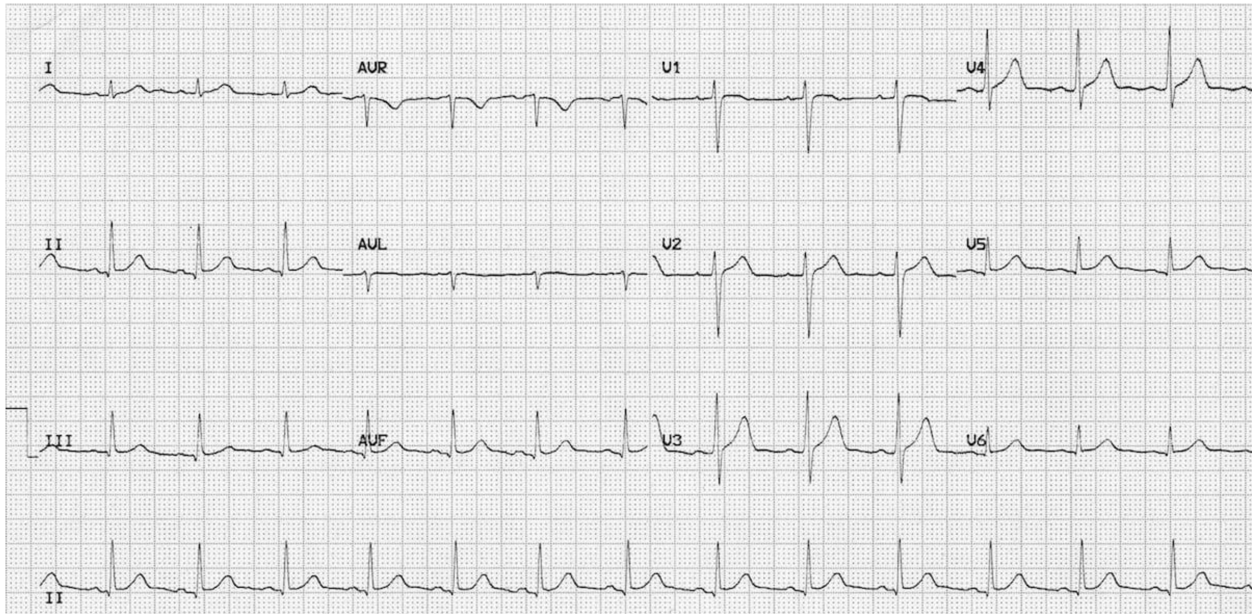
<u>Neuro</u>:

4. **You are admitting this patient to general medicine service. What work-up do you do?**

5. **What organisms are you concerned about? What empiric antibiotics would you start?**

Case Continued:

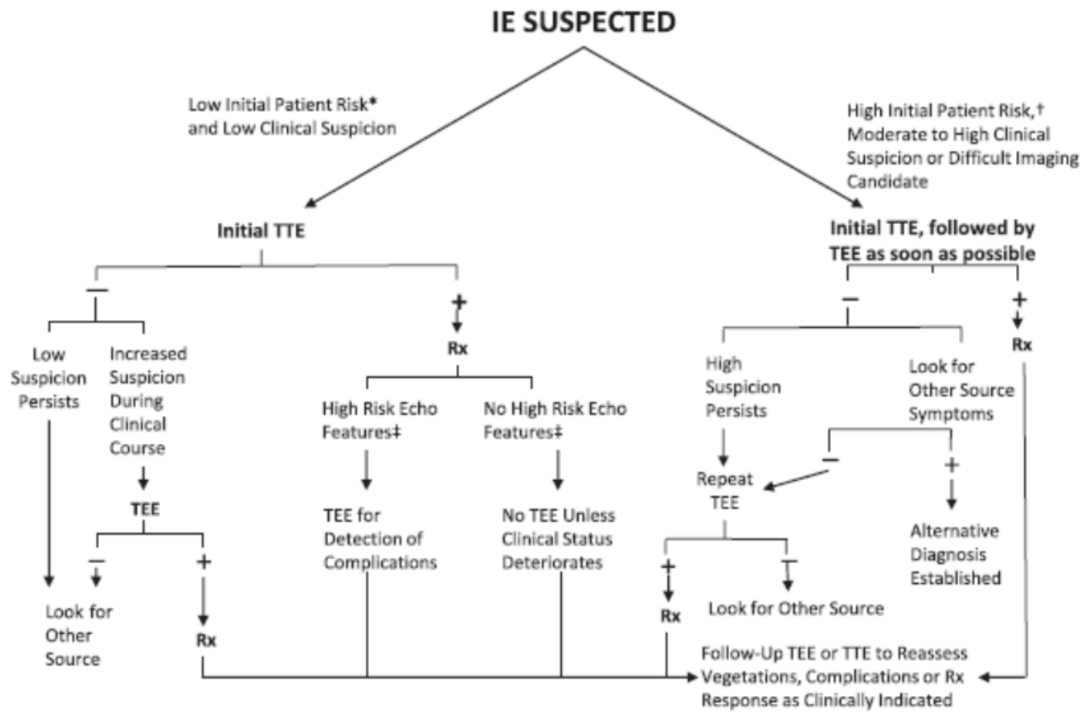
CXR was normal. UA was negative for blood, RBCs, WBCs, LE and nitrites. ECG below. It's the next morning and you are seeing your patient on pre-rounds. In the quiet of the 7W bed you now notice a murmur (see QR code for audio link). The patient has just come back from TTE but the results aren't up yet.



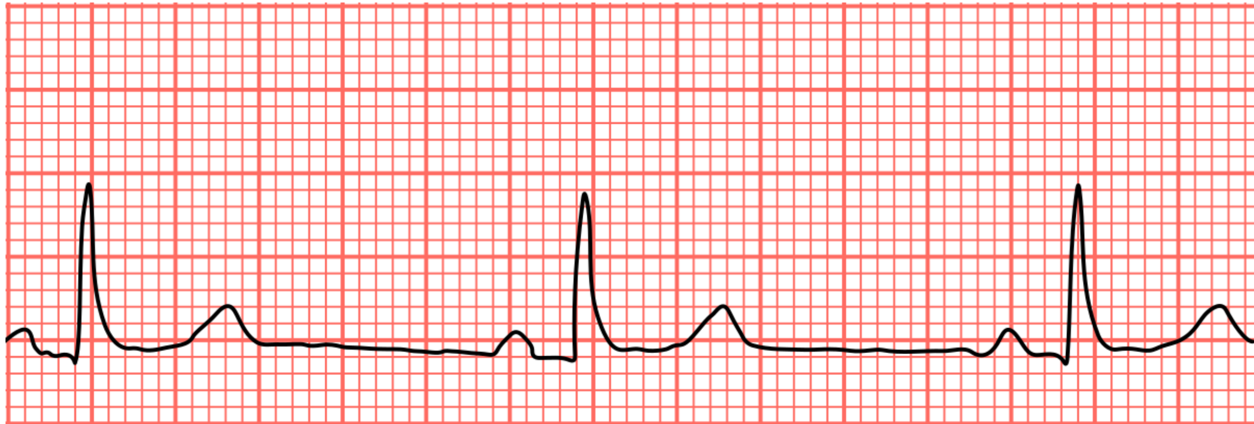
Murmur (Heard at 3rd left ICS which increases with isometric hand grip):

6. **How does this change your plan?**

7. **What if instead of hearing a murmur, the TTE returns with findings of an 11 mm oscillating vegetation on the anterior leaflet of aortic valve? What is your next step?**



Case Continued: Patient undergoes TEE for the new murmur. TEE shows a 7 mm vegetation on the aortic valve with moderate aortic regurgitation and EF of 55%. Then on hospital day 3 the team gets called because of the finding below seen on telemetry.



8. **What are your next steps?**

9. **Should this person have surgery? What are the indications for early surgery in left-sided endocarditis?**

Indications for Early Surgical Intervention	
Cardiac	1. 2. 3.
Infectious	1. 2. 3.
Vegetation size/Embolic complications	1. 2.

10. **What if instead the patient had right-sided endocarditis with septic pulmonary emboli? Is surgery indicated, why or why not?**

11. **What if instead the patient already had a prior history of endocarditis with a mechanical AVR on Coumadin and he presented with recurrent endocarditis with the emboli to brain as above? What would you do with his anticoagulation?**

Case Continued: Patient undergoes AVR and does well post-operatively. His cultures grew MSSA.

12. **If the patient had prosthetic valve would this change your antibiotics?**

He completes a 6 week course of nafcillin. He is then seen in the Lenox Hill Medicine clinic to establish care with a new PCP. He hasn't seen a dentist in years so you refer him to a dentist who recommends deep cleaning and tooth extraction.

13. **Does the patient need antibiotic prophylaxis? If so, why and with what antibiotic? What are the indications for antibiotic prophylaxis prior to dental procedures?**

QUESTIONS FOR THE EXPERT. IF THERE IS STILL TIME PROCEED TO QUESTIONS BELOW

What is your differential diagnosis for culture negative endocarditis?

Which antibiotic would you choose in the following cases?

25 yo IVDU with tricuspid valve endocarditis and right leg weakness. MRI shows small abscess. Blood culture with MSSA.	
68 yo M presenting with 4-6 weeks of fevers and weight loss. Blood cultures + for *Strep gallolyticus*	
40 yo F with history of fistulizing Crohn's on TPN. Blood cultures with Candida albicans.	