University of CINCINNATI

Spacing AHD 2019

Agenda

1:00 – 1:10: Theory Burst

1:10 – 2:00: Small group with questions

2:00 – 2:10: Break

2:10 – 3:15: Small group with questions

3:15 – 3:30: Large group clarification; End AHD

The MegaCase

Ms Spacey is a 61-year-old female with h/o hypertension, HLD, schizophrenia with frequent medication noncompliance, and type 2 diabetes who presents with altered mentation and hyperglycemia. EMS was called to her home when her daughter found her at home combative and agitated. EMS found her POC glucose reading to be >600 and she was brought to the ED. When able to comply with examination, she complains only of nausea and lower chest / epigastric abdominal pain. She reports being out of her insulin for multiple days. Meds include: metformin 1000 mg BID, glipizide 5 BID, lantus 20 qHS, lisinopril 20 mg, ASA 81 mg, risperdone 1 mg BID

Vitals: T 98.1, HR 104, BP 153/79, RR 18, SPO2 97% RA

Gen: awake, alert, slow to respond to questioning, intermittently does not respond at all, intermittently drowsy

Head: normocephalic, atraumatic

Eyes: EOM intact, Conjunctiva normal, pupils equal and reactive to light

Neck: normal range of motion w/o tenderness; no lymphadenopathy

Cardiovascular: Tachycardic rate, without murmur

Pulm: CTAB, no w/r/r, slightly tachypnic

Abd: soft, non-tender, nondistended, +BS

Neuro: alert, oriented to self, city, situation. No CN deficit. Moves all 4 extrems 5/5 strength.

Skin: No rashes, lesions, wounds, edema

Labs:

80%Seg \ 12.7 / 129 | 87 | 62 /

16.1 ----- 250 ---------- 962

/ 35 \ 4.2 | 11 | 2.66 \

Prior Cre 1.2

1.) You are the ED resident in B pod. What is your initial working diagnosis and work up?

2.) What is your assessment and plan?

The patient has new vital sign changes:

T 101.4, HR 123, BP 94/58, RR 32, SPO2 100% RA

She continues to be drowsy on exam and intermittently responding to questions. Family states she is not at her baseline.

4.) Is this sepsis? What is your approach?

Is this ACS? Patient with HTN, T2DM has troponin elevation 0.75. She described upper chest/ epigastric discomfort and nausea. Repeat troponin 1 hour later is 1.74. What is your approach?

You initiated NSTEMI management for this patient with rising troponin. Troponin peaked at 1.74 and began to downtrend.

CTH demonstrated a new low attenuation infarction of unclear etiology.

Your lumbar puncture returns with the following:

OP: High

CSF Color: colorless

Clarity: slighly hazy

TNC: 796

RBC: 296

Neut %: 94

Glucose: 240

Total Protein: 83

Interpret these results.

What is your next step in management?

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Mini Question Time!

MiniQ Cases:

Syncope:

1. A 57 year old man presents to the emergency department after passing out while standing at church. After passing out he had shaking of both his arms and legs but he recovered completely within a couple of minutes. He does not recall the event, and does not know if he had symptoms before. He has a history of type 2 diabetes, hypertension, hypercholesterolemia, and hypothyroidism. His current medications are metformin, glyburide, hydrochlorothiazide, hydralazine, lisinopril, atorvastatin, and levothyroxine. His doctor recently increased hydralazine to better control his elevated blood pressure. Vitals pulse is 92 beats per minute, respirations 16/minute, blood pressure 132/76 mmHg, oxygen saturations 96% on room air. Physical exam is normal. Blood glucose is 104 mg/dl. Complete blood count, basic metabolic panel and urinalysis are all normal. Electrocardiogram is normal. Which of the following is the best next step in management?
    A. Intravenous normal saline
    B. Troponin and echocardiogram
    C. Admission to hospital and telemetrymonitoring
    D. Electroencephalography (EEG)
    E. Orthostatic vital signs

2. In a patient that presents with syncope what is the most high yield initial test after performing performing a thorough history and physical?

    Echocardiogram
    Carotid ultrasound
    Electrocardiogram
    CBC and Renal panel
    CT head

3. 42 year old woman is brought to the urgent care after she developed lightheadedness, diaphoresis and nausea in front of a large group while giving a presentation She reports her vision “blacked-out” and she collapsed to the ground. Her co-workers report that she recovered

within 1 minute, had no confusion but did have jerking of her right arm after collapsing. She denies any chest pain or palpitations prior or during the episode. She has a history of hypertension and type 2 diabetes. Vitals signs: pulse 86 beats per minute, blood pressure 125/82 mmHg in both arms and negative orthostatic changes. Physical examination is normal. Electrocardiogram is obtained which is normal sinus rhythm with no other abnormalities noted. What is the next appropriate step?

Electroencephalogram (EEG)
Discharge home with no additional work-up
Bilateral carotid Doppler
30-day event monitor
Continuous Holter Monitor

4. A 72 year old man presents to clinic with loss of consciousness. He has a history of ischemic cardiomyopathy, (ejection fraction 40%) hypertension and hyperlipidemia. He's had 3 similar syncopal episodes in the past 2 weeks. Two of the episodes occurred while he was seated at home, the third episode while mowing the lawn. In each case, he had palpitations immediately preceding the loss of consciousness but he denies diaphoresis, nausea, or shortness of breath. Vitals are temperature 98.8 F, pulse 75 bpm, respirations 12/minute, blood pressure 140/75 mmHg, pulse oximetry 100% on room air. Orthostatic blood pressure and heart rate in the office are normal. Physical examination shows normal S1, S2 without murmurs, rubs or gallops. Electrocardiogram shows sinus rhythm with no ST or T wave changes. Which of the following is the best next step?

Electroencephalography (EEG)
Outpatient echocardiogram
Outpatient cardiac stress
Reassurance
Hospital admission with telemetry

5. A 65 year old man presents to the emergency department after an episode of syncope at work. He has never had a history of syncope. He denies dyspnea on exertion, palpitations or chest pain. His family history is unremarkable for any sudden death or collapse. Physical examination reveals a III/VI crescendo-decrescendo systolic murmur at the right upper sternal border with radiation into the carotid arteries. Pulses are weak and have a slow upstroke. After confirming severe aortic stenosis with echocardiogram what is the next best step?

Echo every 6-12mo
Echo every 1-2 yrs
Echo every 3-5yrs
Aortic valve replacement
Aortic valve balloon dilation

PNA

1. 42 year old man with type 2 diabetes, COPD, and alcohol abuse presents to your office with cough for 3 days and subjective fevers at home. His cough is productive of green sputum. He is tolerating fluids. He did receive azithromycin 3 weeks prior and prednisone for a possible COPD exacerbation. His vitals are within normal limits. Physical examination shows right lower lobe crackles but no wheezes. You diagnose the patient with pneumonia. Which of the following is the best antibiotic regimen?

A. Levofloxacin 750 mg daily
B. Amoxicillin-clavulanate 2 grams BID
C. Amoxicillin-clavulanate 2 grams BID and azithromycin 500 mg daily
D. Doxycycline 100 mg BID

2. 44 year old man presents to your office with worsening productive cough over 4 days and fever to 102 F. He has been unable to go to work due to malaise. He denies rhinorrhea, headache, nausea, vomiting, or diarrhea. He is a non-smoker and has no past medical history.

Vitals temperature 102.4 F, pulse 96 beats/min, respiratory rate 18/min, blood pressure 110/70 mmHg, oxygen saturations 96% on room air. Physical exam shows an ill but nontoxic appearing male. He is breathing comfortably with crackles noted over the right lung base with deep inspiration. There is no egophony or increased fremitus. What is the most appropriate treatment plan for this patient?"

A. Observation and close follow up
B. Outpatient treatment, Azithromycin
C. Outpatient treatment, Amoxicillin plus Azithromycin
D. Outpatient treatment, Levofloxacin
E. Inpatient treatment, Ceftriaxone plus Azithromycin
F. Inpatient treatment, Piperacillin-tazobactam plus Vancomycin

3. 68-year-old homeless man presents to the emergency department with 3 days of right-sided pleuritic chest pain, subjective fevers, and productive cough. His past medical history includes hypertension, hyperlipidemia, and alcohol abuse. Vital signs are 100.7 F, blood pressure 118/78 mmHg, pulse 98/min, respiratory rate 24/min, oxygen saturation 92% on 2L. Physical examination reveals decreased breath sounds and dullness to percussion in lower third of the right lung. Chest x-ray shows right basilar consolidation and a right-sided pleural effusion. A diagnostic thoracentesis is performed, results are as noted. What is the most likely cause of this pleural effusion?

Serum

Protein 7.1 g/dL

LDH 165 IU/L (normal 140 - 200)

Pleural Fluid

Protein 4.7 g/dL

LDH 146 IU/L

Glucose 20 mg/dL

pH 7.24

Red Blood Cells 564/microL

Total Nucleated Cells 12,568/microL

Neutrophils 85%

Lymphocytes 10%

Monocytes 5%

Gram Stain none

A. Heart failure

B. Tuberculosis
C. Small cell lung cancer
D. Alcoholic cirrhosis
E. Bacterial pneumonia

Liver Disease

1. A 52-year-old man comes to the emergency department because of abdominal pain and fever for the past 2 days. Past medical history is significant for chronic hepatitis C and cirrhosis. His temperature is 38 °C (100.4 °F), pulse is 95/min, respirations are 16/min and blood pressure is 98/60 mmHg. Physical examination shows spider angiomata, palmar erythema, and sclera icterus. He has a distended abdomen with a positive fluid wave and diffuse tenderness to palpation. Mental status examination is normal. Laboratory tests are shown below;

White blood cells - 14,000 cells/mircoL
(AST/SGOT) 70 Units/L
(ALT/SGPT) 79 Units/L
Albumin 2.8 g/dL
Total bilirubin 5 mg/dL
International normalized ratio (INR) 1.9
Creatinine 1.2 mg/dL

A diagnostic paracentesis is performed. Laboratory results are shown below:
Total cell count 600 cells/mm3
Neutrophils 50 %

Albumin <1.5 g/dL

Which of the following is indicated at this time?

A. Prednisone
B. Cefotaxime plus albumin
C. Lactulose
D. Furosemide
E. Propanolol

2. A 40 year old man presents to the emergency department with ascites. A diagnostic paracentesis is performed and they are now calling for admission. The results are the following. Which of the following is the most likely etiology of this patient's ascites?

Serum: Albumin 3.2 g/dL, Protein: 5.6 g/dL
Ascitic fluid: Albumin 1.0 g/dL, Protein: 2.0 g/dL

A. Cardiac ascites
B. Tuberculous ascites
C. Peritoneal carcinomatosis
D. Nephrotic syndrome
E. Alcoholic cirrhosis

3.A Fourth Year Medical Student presents to his PCP office for new jaundice. He denies recent illness, pruritis, confusion, travel, or substance abuse. He states that he has recently completed a strenuous surgical acting internship. Exam shows scleral icterus with faint jaundiced skin. No HSM. Labs reveal: Hgb 14, PLT 150, AST 21, ALT 19, AP 45, Tbili 2.1, indirect 1.8, albumin 3.5, INR 1.0.

Next step in management?

Peripheral blood smear

Osmotic fragility test

Annual follow up

G6PD testing in 4-6 weeks

Can you answer all of these learning objectives? We just went through the majority of 1-6; Skim through topics 7-14. Which topics/learning objectives does your group need to refresh?

Topic	Learning Objectives
1. Acid Base	Review Acid Base Calculations Understand indications for toxic alcohol work up
2. ACS	Define typical chest pain Differentiate forms of ACS Utilize resource to risk stratify patients Initiate treatment of ACS Define contraindications and goals for early reperfusion therapy Define indications for urgent catheterization
3. Sepsis	Define sepsis Use qSOFA to screen for sepsis Review the golden hour of sepsis Initiate adequate fluid resuscitation
4. Endocarditis	Review Duke's Criteria for IE Initiate empiric treatment for suspected IE Know the high risk features of IE on echo Indications for surgical intervention on left sided IE Indications for IE prophylaxis
5. Meningitis	Discuss the prognostic utility of Kernig and Brudzinski. Indications for CT prior to LP Know the time loss of obtaining CT prior to LP Interpret CSF studies Initiate empiric treatment for meningitis. Indications for dexamethasone in meningitis treatment
6. Diabetes	Review diagnostic criteria for diabetes Review types of insulin Initiate insulin regimen based on total daily dose Titrate insulin with 50/30 rule to goal (what is goal?)

	Differentiate DKA v HHS Initiate treatment of DKA/HHS Treat hypoglycemia
7. Syncope	State the definition of syncope State the 3 classifications of syncope Identify key clinical features that separate syncope from seizure Identify signs and symptoms that make a patient higher risk for Cardiogenic Syncope
8. Liver	Initiate work up of abnormal LFTs Diagnose Gilbert syndrome Diagnose and manage alcoholic hepatitis Recognize acute liver failure Diagnose Wilson's disease Manage chronic liver disease Diagnose and treat SBP Manage hepatic encephalopathy
9. Heart Failure	Manage Acute Decompensated Heart Failure Practice Guideline Directed Therapy for Chronic Heart Failure
10. Hem/Onc Emergencies, Liquid Tumors, Anemia	Define and treat neutropenic fever. Recognize the presentation of Tumor Lysis Syndrome. Understand indications for allopurinol, rasburicase, and dialysis in management of TLS. Recognize and treat acute cord compression. Work up hypercalcemia. Manage acute symptomatic hypercalcemia. Recognize and manage acute SVC syndrome. Recognize and treat leukostasis. Develop a differential work up for microcytic and macrocytic anemias. Prescribe iron replacement in IDA. Recognize and manage TTP. Develop a differential work up for thrombocytosis
11. COPD	Identify an obstructive and restrictive pattern on a pulmonary function test

	Define the diagnostic criteria for COPD Apply GOLD Assessment tool to initiate treatment for stable COPD patients Manage an acute COPD exacerbation
12. Pneumonia	Define pneumonia based on the IDSA definition Explain the difference between CAP, HAP, and VAP. Use clinical decision tools to determine treatment location. Choose the appropriate initial work-up and antibiotic regimen for community acquired pneumonia based on patient risk factors and clinical setting.
13. AKI	Discuss the diagnostic criteria for AKI based on KDIGO Explain three mechanisms of acute kidney injury Develop initial diagnostic and treatment plans for acute kidney injury
14. Hyponatremia	Initiate a systematic work-up of hyponatremia Recognize when hypertonic saline is indicated Understand brisk correction complications – cerebral edema and CPM. Explain the different treatment options for SIADH