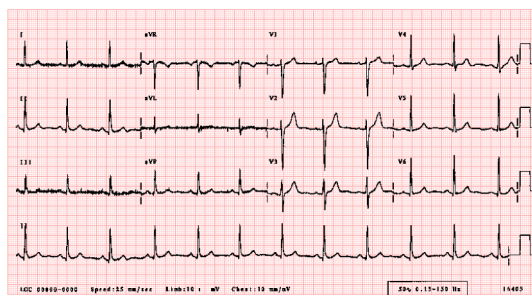


## Geriatric Medicine Board Review

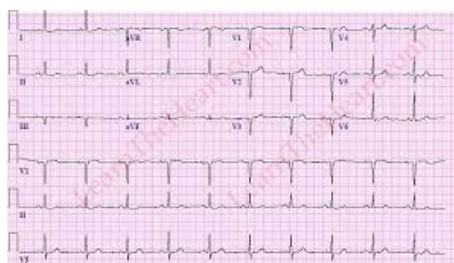
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1. You are a APP, in the office and your supervising MD asks you to go downstairs to the ER and visit a patient reportedly there for chest pain since the early am. Her ECG shows QS pattern in V1 V2 V3 and V4. She is diagnosed with acute MI. Which of these is the most likely location of the infarction?

- A) Anteroseptal
- B) Lateral
- C) Inferior
- D) Right Ventricular

QS V1, V2, V3



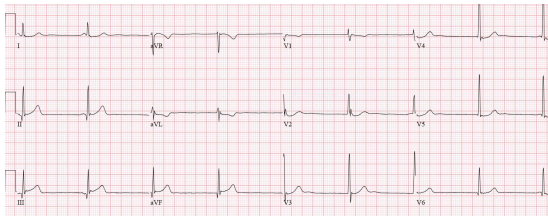
### 1. Answer is A

- Anteroseptal infarcts cause QS deflections in V1 – V3 and sometimes V4
- Lateral wall – I, aVL, V5-V6
- Inferior wall – which leads ?
- R Ventricular infarct alone is uncommon, think of it when there is an inferior wall MI ( ST elevation )

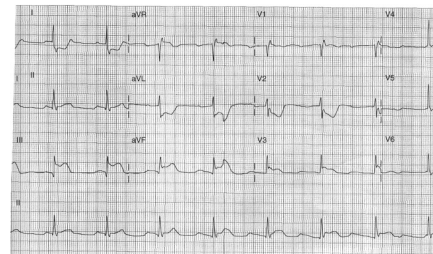
2. You are an MD at the nursing home, and your 80 year old Hispanic male patient complains of sudden chest pain. He always has this complaint, especially when he argues with his significant other, but he is mildly diaphoretic and his BP is lower than baseline so you get an ECG. He has new Q waves in 2, 3, and aVF and leads 1 and aVL. Where is the location of his MI?

- A) Right ventricular
- B) Anteroseptal
- C) Inferolateral
- D) True Posterior

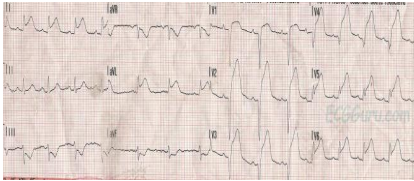
### 2. Answer is C



### 3. What type of MI?



## 4. What type of MI



## 5. Points to Remember

- Always compare an ECG to a previous one ( when available )
- Always know your patients vitals and physical exam and recent labs, when discussing an abnormal ECG result
- In LTC setting, know your patients GOC before sending them in and talk to family anyway when you have changes on the ECG.
- DNR does not mean Do Not Treat
- When in doubt, get an opinion

6. Your 73 year old patient is undergoing evaluation prior to initiation of a psychotropic medication. He was recently diagnosed with cancer, and he reports nausea from the chemotherapy. Which of these medications is most appropriate to avoid exacerbation of secondary GI effects of chemotherapy in this patient?

- Imipramine
- Sertraline
- Venlafaxine
- Haloperidol
- Aripiprazole

## 6. Answer is D

Haloperidol has antiemetic properties  
All the other listed medications have GI side effects

7. Your 77 year old male patient is brought to the ED after an episode of syncope. He was walking fast at the mall and experienced chest pain, then lost consciousness. He has SSCP associated with brisk walking for the past several weeks. Each episode was relieved with rest. He had multiple episodes of pharyngitis as a child.

His heart rate is 95, respiratory rate 15, and BP 120/90 mmHg.  
Palpation of the carotid upstroke discloses pulsus parvus et tardus.

Chest palpation shows an apical impulse that is laterally displaced and sustained.

A grade III/VI mid systolic murmur is heard loudest at the base of the heart and radiates to the neck. A grade 1/6 high-pitched, blowing diastolic murmur along the left sternal border is also heard. S4 is present. Lungs are clear on auscultation, there is no LE edema.

7. Which of these is the most likely diagnosis?

- A) Mitral Stenosis
- B) Mitral Valve prolapse
- C) Aortic stenosis
- D) Tricuspid stenosis

7. Answer is C

In aortic stenosis, the three common features are angina pectoris, syncope and heart failure.

Also typical are pulsus parvus and tardus, midsystolic murmur grade III/VI and a fourth heart sound.

A fourth heart sound is produced by an increase in stiffness of the left ventricle due to scar formation ( may be a manifestation of coronary artery disease.

S4 - heart sound can also be caused by a greatly thickened LV wall by hypertension, HOCM, CAD and aortic stenosis

S3 – occurs when the mitral valve opens allowing a large volume of blood from the left atrium to strike a very compliant LV. This blood suddenly decelerates. It is seen in systolic dysfunction

8. You are a physician assistant in a busy primary care practice. You see a new patient who is a 70 year old man, functionally independent, recently diagnosed with type 2 diabetes. He states he has been exercising and trying to cut down on soda consumption, and feels pretty well overall. Hemoglobin A1c is 8.7%, labs show serum Cr of 1.6mg/dl, otherwise labs are normal.

Which of these is the most appropriate management?

- A) SGLT-2 inhibitor ( empagliflozin, dapagliflozin, canagliflozin )
- B) Insulin
- C) Sitagliptin
- D) Metformin
- E) Glipizide

### 8. Answer is D ( Metformin )

- Metformin has traditionally been regarded as contraindicated in chronic kidney disease, though guidelines in the past few years have been relaxed to permit therapy if GFR is  $>30$  ml/min
- Within the last year, a study showed that empagliflozin, in patients with heart disease and DM, decreased one in three cardiac deaths

9. The previous patient is undergoing follow-up evaluation at 6 months. His A1c is still 8.7%. While discussing additional treatment options, he states he does not want an injectable and he is anxious about becoming hypoglycemic.

Which of these is the most appropriate addition to his treatment regimen?

- A) Linagliptin ( Tradjenta )
- B) Glipizide ( Glucotrol )
- C) Exenatide ( Byetta )
- D) Repaglinide ( Prandin )

### 9. Answer is A ( DPP4 Inhibitor )

- Linagliptin is metabolized and excreted through the Liver, making it perhaps ideal ( over sitagliptin ) in older patients with renal insufficiency.
- Other oral agents that do not cause hypoglycemia are colesevelam, alpha glucosidase inhibitors ( ie. Acarbose ), and thiazolidinediones ( ie pioglitazone )

### 10. Which of these is a common adverse effect of metformin?

- A) Diarrhea
- B) Lactic Acidosis
- C) Weight gain
- D) Pancreatitis

10. Answer is A

Diarrhea can develop shortly after, or months after starting metformin therapy

Lactic acidosis is rare

Can use if GFR over 30ml/min

11. Your 70 year old female patient is undergoing evaluation because of an exacerbation of bronchiectasis. A course of antibiotic therapy for which of these durations is most appropriate for this patient?

- A) 7 days
- B) 10 days
- C) 14 days
- D) 21 days

11. Answer is C ( 14 days )

- Start empiric antibiotics while waiting sputum culture, the standard is 14 days.
- Change antibiotics after several days if no clinical response
- Consider IV if still no response as pseudomonas must be considered
- Some Pulmonologists use macrolides to prevent recurrences

12. What percentage of all lung cancers in the elderly are non-small cell carcinomas?

- A) 10%
- B) 25%
- C) 65%
- D) 85%

## 12. Answer is D ( 85% )

Forty one percent of all non small cell cancers are adenocarcinoma  
 Twenty percent are transitional cell

The standard treatment for early stage non-small cell cancer is surgical resection. 33% of patients live five years even with this. Recurrence rates are high and many patients still die from this.

13. Which paraneoplastic syndrome is most commonly associated with small cell lung cancer ( SCLC )?

- A) SIADH
- B) Humoral hypercalcemia of malignancy
- C) Hypoglycemia
- D) Hyperthyroidism

## 13. Answer is A ( SIADH )

70% of paraneoplastic SIADH cases are associated with SCLC  
 Small cell is the most common type of cancer related to hypercalcemia  
 Insulin producing islet cell tumor is the best known cause of tumor associated hypoglycemia

14. Your 65 year old new office patient is undergoing evaluation because of rapidly progressing dementia, MRI diffusion weighted imaging changes in the basal ganglia, and the worsening ability to move and speak.

What is the likely diagnosis?

14. Which of these best describes the likelihood that this patient has Creutzfeldt-Jakob disease ( CJD )

- A) Definite
- B) Probable
- C) Possible
- D) Unlikely

14. Answer is B ( probable )

This patient meets the diagnostic criteria for probable CJD  
Definite is only when you get a biopsy or on autopsy

CJD

- a) rapidly progressive dementia
- b) myoclonus
- c) mute and akinetic in ~ 6 months
- d) Most die within 6 – 12 months
- e) 10 – 20% survive for 2 years or more

15. You see a 77 year old new patient in your office with a family concern for “parkinsons”. Which of these is most likely to distinguish Parkinson’s disease from other parkinsonian syndromes?

- A) Falls early in the disease course
- B) Improvement in response to levodopa
- C) Symmetry of motor symptoms
- D) Rapid disease progression

15. Answer is B (improvement in response to levodopa )

Falls early in the course of the disease, poor response to levodopa, symmetry of motor symptoms, and rapid disease progression are useful in identifying forms of parkinsonism OTHER THAN Parkinson’s disease.



16. Which of these nonmotor symptoms of Parkinson disease may be controlled using levodopa/carbidopa?

- A) Periodic limb movements of sleep
- B) Erectile dysfunction
- C) Constipation
- D) Anxiety

16. Answer is A ( PLMD )

17. Your 70 year old female patient reports progressive fatigue over the past few weeks. She is otherwise healthy. Lab studies show.....

|            |         |                      |
|------------|---------|----------------------|
| Hemoglobin | 8.8g/dL | ( normal 12 – 16 )   |
| MCV        | 77 fL   | ( normal 80 – 100 )  |
| RDW        | 15.5%   | ( normal 11% – 14% ) |

17. Results of iron studies are pending. Which of these results is most likely to support the diagnosis of iron-deficiency anemia in this patient?

- A) Low iron, elevated ferritin, low TIBC
- B) Low iron, elevated ferritin, elevated TIBC
- C) Elevated iron, elevated ferritin, low TIBC
- D) Low iron, low ferritin, elevated TIBC

17. Answer is D ( low iron, low ferritin, high TIBC )

Remember...

You can still have iron deficiency if the ferritin is high in cases of chronic disease or hepatitis

Older patients started on iron therapy tend not to absorb more than once a day dosing, and higher doses may cause side effects ( abdominal pain, nausea/emesis and constipation/diarrhea.

Can give iv iron sucrose ( Venofer ), or ferric carboxymaltose ( Injectofer )

18. Ferrous sulfate 325mg is started on the previous patient bid. After correction of the anemia, ferrous sulfate should be continued for approximately which of these times?

- A) 1 week
- B) 1 month
- C) 2 weeks
- D) 2 months

18. Answer is D ( 2 months )

After correction of the anemia and its cause, oral iron should be continued for 2 months to replenish body iron stores.

19. Your 76 year old female patient is undergoing evaluation because of chest pain.

Lab studies show

|            |        |                     |
|------------|--------|---------------------|
| Hemoglobin | 11g/dL | ( 12 – 16 )         |
| MCV        | 65 fL  | ( normal 80 – 100 ) |
| RDW        | 14%    | ( normal 11 – 14 )  |

19. Which of these is most likely in this patient?

- A) Iron deficiency anemia
- B) Sideroblastic anemia
- C) Thalassemia
- D) Anemia of chronic disease

19. Answer is C ( Thalassemia )

Patients with an elevated RDW need additional testing to distinguish thalassemia from other microcytic anemias.

The MCV is too low for this to be chronic disease

If you suspect thalassemia, check a hemoglobin electrophoresis.

20. Which of these hemoglobin concentrations is most likely to be the threshold for transfusion of RBC's in an adult patient?

- A) 7 g/dL
- B) 8 g/dL
- C) 9 g/dL
- D) 10 g/dL

20. Answer is A ( 7 g/dL )

If patients are symptomatic or actively bleeding, transfusion should be given at a higher level

21. Fresh frozen plasma ( FFP ) transfusion is most appropriate in a nonanticoagulated patient with active bleeding with an international normalized ratio ( INR ) of which of these?

- A) > 1.3
- B) > 1.6
- C) > 2.0
- D) >2.5

21. Answer is B ( INR of 1.6 )

Plasma transfusion is recommended for patients with active bleeding and an INR > 1.6

Often, FFP is inappropriately transfused to correct an elevated INR when there is no bleeding

22. Your 77 year old male patient decides to go along with his new YOUNG wife hiking up a mountain. She didn't tell him the mountain was 7,500 feet ! Which of these is the most appropriate treatment for high-altitude pulmonary edema?

- A) Supplemental oxygen
- B) Salmeterol
- C) Rest
- D) Immediate descent

22. Answer is D ( immediate descent )

When descent is not possible, limited evidence suggests that bed rest, supplemental oxygen and medications such as acetazolamide, nifedipine, salmeterol and PDE-5 inhibitors may improve oxygen saturation and pulmonary edema.

23. Your 78 year old male patient is undergoing evaluation because of excessive daytime sleepiness. His wife witnesses him gasp for air each night while sleeping. Polysomnogram testing is planned. A minimum of how many apneic or hypopneic events per hour of sleep is required for a diagnosis of obstructive sleep apnea in this patient?

- A) 2
- B) 5
- C) 15
- D) 30

24. Answer is B ( 5 episodes)

An apnea-hypopnea index of  
5 – 15 per hour indicates mild disease  
15 – 30 moderate disease  
>30 severe disease

25. Your 82 year old patient has a pacemaker and is going for a dental procedure in 1 week. His wife of 50 years is calling your office asking for an antibiotic to prevent infection of the device? He is penicillin allergic. What treatment should you give?

- A) Azithromycin
- B) Cephalexin
- C) Amoxicillin
- D) Ciprofloxacin
- E) No indication for antibiotics

25. Answer is E ( no antibiotics )

There is no scientific evidence demonstrating that antibiotics are needed for the prevention of device infection before routine invasive dental, gastrointestinal or genitourinary procedures

26. You are called by the nurse at the hospital because your 80 year old patient has been diagnosed with prosthetic valve endocarditis. Cultures show oxacillin-resistant staphylococci. The infectious disease attending is unavailable and family is concerned and upset no treatment has begun. What regimen do you start?

- A) Nafcillin, rifampin, and gentamycin
- B) Ampicillin and streptomycin
- C) Vancomycin, rifampin, and gentamycin
- D) Vancomycin, rifampin and nafcillin

26. Answer is C ( Vanc, Rifampin and Gent )

Because the staphylococci are oxacillin resistant, no beta-lactam antibiotic should be used.

Six weeks of vancomycin and rifampin are recommended, and gentamycin should only be used for the first 2 weeks of therapy

27. Your 80 year old female diabetic patient presents to your office with acute onset of excruciating pain of the right side of the jaw. She has no other symptoms. Exam shows a spherical swelling behind the angle of the jaw on the right side; the swelling has a well-defined border and no fixation to the overlying skin. There is localized tenderness and edema. No swelling on the left side. Which is the most likely diagnosis?

- A) Parotid neoplasm
- B) Acute suppurative sialadenitis
- C) Viral infection
- D) Pharyngitis

27. Answer is B ( acute suppurative sialadenitis )

Sudden onset of pain and swelling and a physical examination that shows localized tenderness and edema are typical presentations of this condition.

Treatment is with antibiotics, massage, hydration, warm compresses, sialagogues. Amoxicillin-clavulanic acid, if severe – ceftazolin ( anti-staph )

Diabetes is a predisposing factor, as is hypothyroidism, renal failure and Sjogrens syndrome.

Viral infections are typically bilateral

Neoplasms are painless, firm and slow growing

28. Which of these statements about the epidemiology of diverticular disease is true?

- A) Approximately 50% of people in the US have diverticulosis by age 80
- B) 80% – 85% of people with diverticulosis are asymptomatic
- C) 1% - 2% of symptomatic patients will require surgery
- D) All symptomatic patients have inflammation

28. Answer is B ( 80 – 85% are asymptomatic )

- By age 80, about 70% of people will have diverticulosis
- 15% - 20% have symptoms
- 1% - 2% will require hospitalization
- 0.5% will need surgery

29. Your 79 year old male patient is undergoing follow-up examination after a recent hospitalization for acute diverticulitis. This was his first episode, and it resolved completely. He does not have any continued pain or diarrhea. His disease is most likely which of these stages?

- A) Stage I
- B) Stage IIa
- C) Stage IIb
- D) Stage IIc
- E) Stage III

29. Answer is B ( Stage IIa )

- Stage I is asymptomatic disease
- Stage IIa is a single episode
- Stage IIb is recurrent episodes
- Stage IIc is chronic disease with pain, diarrhea
- Stage III is complicated disease ( abscess, phlegmon, obstruction, bleeding sepsis )
- 25 – 33% will have a second recurrence

30. Your 71 year old patient with CKD has a GFR of 40mL/min. This patient is most likely in which GFR category?

- A) 2
- B) 3a
- C) 3b
- D) 4
- E) 5

30. Answer is C ( Stage 3b )

- Stage 1 ( above 90 )
- Stage 2 ( 60 – 89 ) mild
- Stage 3a ( 45 – 59 ) mod
- Stage 3b ( 30 – 44 ) mod
- Stage 4 ( 15 – 29 ) severe
- Stage 5 ( < 15 ) end stage