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Mock Board Test 2019

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Question 1. (Gen Med #64)

D; 23-Valent Pneumococcal polysaccharide vaccine

Pneumococcal vaccine

	Conjugate 13	Polysac. 23	Revac. PPS 23 in 5 yr.
Smoker Alcoholic Chronic liver disease Chronic heart disease Chronic lung disease Diabetic		X	
> 65	X → 1 yr	X	
CKD Immune def./HIV Immune suppression Leuk./lymphoma/MM Asplenia (fxn/anatomic)	X → 8 wks	X	X
CSF leak / cochlear implant	X	X	

patient require vaccination with both PCV13 and PPSV23 and who have already received PPSV23 should be administered a single dose of PCV13 no sooner than **1 year** after receiving the most recent PPSV23.

Question 2. (Pulmonary #73)

A; Complicated parapneumonic effusion

Pleural effusion

Transudative vs exudative
Light's criteria
Pleural protein/serum protein ratio > 0.5, or Pleural LDH/serum LDH ratio > 0.6, or Pleural LDH > 2/3 the upper limits normal serum LDH
Two-test rule
Pleural cholesterol > 45 mg/dL Pleural LDH > 0.45 times the upper limit normal serum LDH
Three-test rule
Two-test rule or Pleural protein greater than 2.9 g/dL

ParaPn. Effusion Sampling
Any effusion >10 mm in depth on lat. decub. film with a pneumonic illness.

Drainage (Chest tube)
Complicated : pH is < 7.2.
Empyema
free flowing (≥1/2 hemithorax), loculated , or thickened parietal pleura on CT (empyema)

Para Pneumonic effusion
Uncomplicated: exudative effusion in the settings of pneumonic process
Complicated: **PH < 7.2, Gluc < 60, LDH often > 1000.** *" anaerobic utilization of glucose by the neutrophils and bacteria --> pleural fluid acidosis."* is often loculated.
Empyema: pus or the presence of bacterial organisms on Gram stain

Instillation of intrapleural tPA-deoxyribonuclease lower the rate of surgical referral, and decrease hospital stay of patients with empyema.

Question 3. (Pulmonary #86)

D; Switch to parenteral nutrition

parenteral nutrition

- **Enteral nutrition:**
  - is preferred unless a contraindication
  - should be started in 24-48 hrs of admission in pts anticipated to have prolonged critical illness.

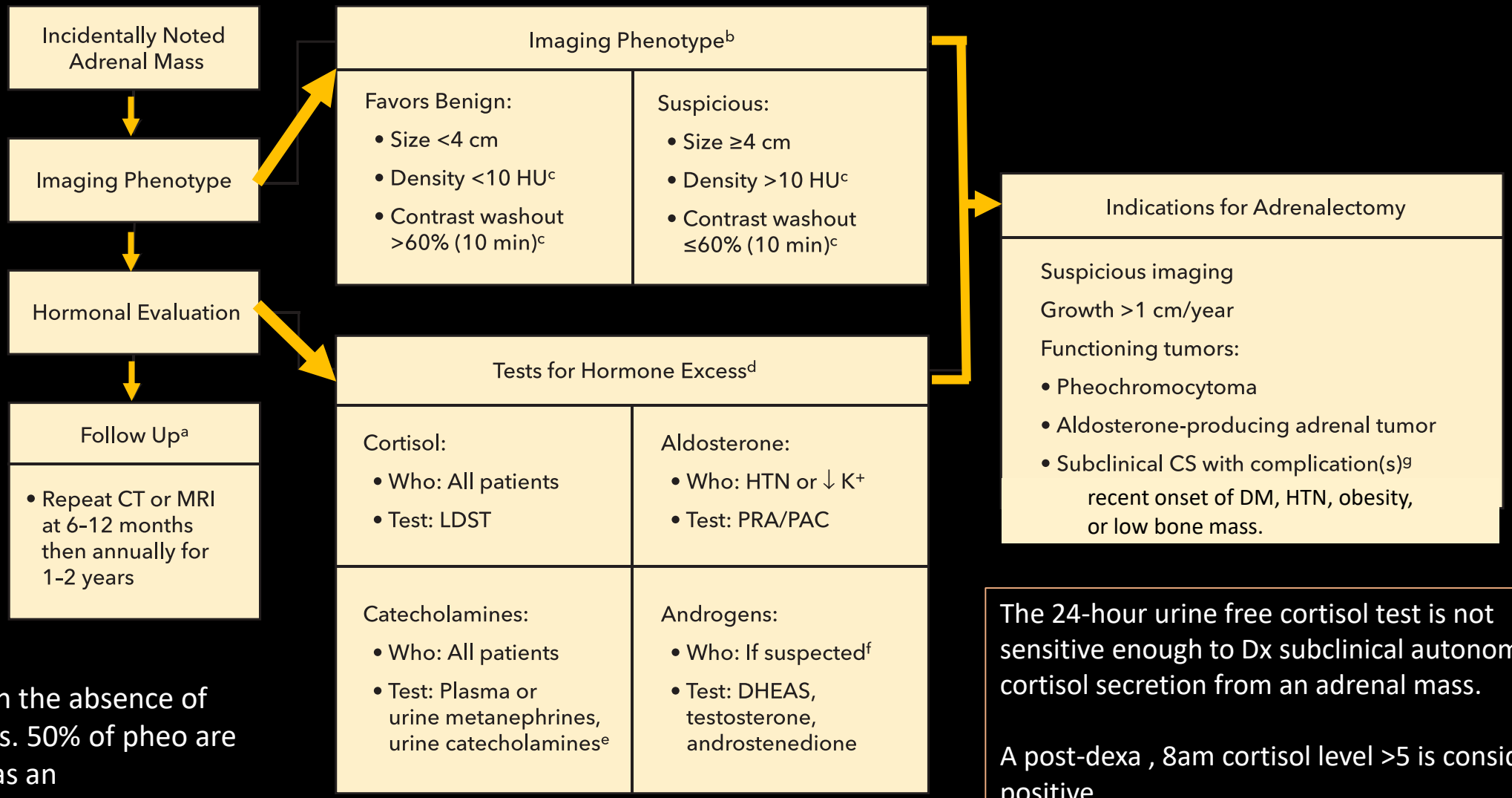
- **Parenteral nutrition**
  - if contraindications (ileus), or intolerance of enteral nutrition.
  - considered only after 7 to 10 days of not meeting more than 60% of energy and protein requirements by the enteral route alone. early parenteral nutrition may increase the risk of infection.

- Metoclopramide and other prokinetic agents are contraindicated in the presence of mechanical small bowel obstruction.

Question 4. (Endocrine #39)

B; 24-Hour urine total metanephrine measurement

Adrenal Incidentaloma



Pheo may exist in the absence of typical symptoms. 50% of pheo are first discovered as an incidentaloma.

The 24-hour urine free cortisol test is not sensitive enough to Dx subclinical autonomous cortisol secretion from an adrenal mass.

A post-dexa , 8am cortisol level >5 is considered positive.

plasma metanephrines has a false-positive rate of 11%, measure only if radiographic appearance is typical for a pheochromocytoma; otherwise measure 24-hour urine metanephrines and catecholamines.

Question 5. (Gen Med #132)

C; Hydromorphone

Pain control with kidney failure:

- Hydromorphone is the preferred opioid to treat cancer-related pain in patients with **chronic kidney disease**.

- Morphine, codeine, Tramadol and meperidine are all contraindicated in patients with kidney failure (GFR<30), due to accumulation of active metabolites.

- Tramadol is a poor analgesic in the setting of cancer-related pain also has significant drug interactions.

- A transdermal fentanyl patch does not have active metabolites that would accumulate in the setting of ESRD.

  it should be used only in opioid-tolerant patients.

- Opioid naïve patients should not be started on a long-acting agent until total daily opioid needs are identified and an appropriate equianalgesic dose is calculated.

Question 6. (Rheum #79)

A; Captopril

Scleroderma renal crisis

- Clinical features include:

  hypertensive emergency,

  headache,

  microangiopathic hemolytic anemia (schistocytes),

  thrombocytopenia,

  elevated serum creatinine levels,

  proteinuria.

- can be seen in **both limited and diffuse** forms of SSc but more often in those with rapidly progressive diffuse disease.

Treatment :
ACE inhibitor (typically **captopril**) should be initiated **promptly** in SSc patients with even mild HTN or otherwise unexplained AKI, and should be continued even in the presence of a rising serum creatinine and the need for dialysis, as **late improvement may occur.**

ACEi is believed to reduce the effect of interstitial fibrosis and vascular dysfunction in the glomerular arterial bed.

prophylactic use of an ACE inhibitor has not been shown to offer protection and may increase mortality.

Glucocorticoids, are implicated as potential risk factors for the development of scleroderma renal crisis.

Question 7. (ID # 106)

A; Initiate isoniazid plus pyridoxine

Latent TB

Definition: asymptomatic patient with a positive TST or QuantiFERON with no clinical or radiographic manifestations of active TB.

Recommended treatment:
INH (daily or twice weekly) for 9 or 6 mo, INH + rifapentine weekly for 3 mo, or rifampin daily for 4 mo.

Criteria for Tuberculin Positivity by Risk Group

≥5 mm Induration	≥10 mm Induration	≥15 mm Induration
HIV-positive persons	Recent (<5 years) arrivals from high-prevalence countries	All others with no risk factors for TB
Recent contacts of persons with active TB	Injection drug users	
Persons with fibrotic changes on chest radiograph consistent with old TB	Residents or employees of high-risk congregate settings: prisons and jails, nursing homes and other long-term facilities for the elderly, hospitals and other health care facilities, residential facilities for patients with AIDS, homeless shelters	
Patients with organ transplants and other immunosuppressive conditions (receiving the equivalent of ≥15 mg/d of prednisone for >4 weeks)	Mycobacteriology laboratory personnel; persons with clinical conditions that put them at high risk for active disease (silicosis, diabetes mellitus, severe kidney disease, certain types of cancer, some intestinal conditions); children aged <4 years or exposed to adults in high-risk categories	

Question 8. (GI # 68)

B; Age 40 years

colon cancer screening:

Patient criteria	Screening age	Interval	Modality
FDR <60 years old or two or more FDRs at any age	age 40 years or 10 years earlier than age of youngest FDR at diagnosis, whichever comes first	repeat every 5 yrs	colonoscopy
FDR >60 years old	age 50 years	repeat every 10 yrs	any modality
Personal history of CRC	At time of diagnosis	repeat at 1 yr, 3 yrs, and, if normal, every 5 yrs thereafter	colonoscopy
Familial adenomatous polyposis	age 10-12 years	rept every 1-2 years until colectomy	flex sig or colonoscopy
Lynch syndrome	age 20-25 years or 10 years earlier than youngest cancer in family	repeat every 1-2 yrs	colonoscopy
Inflammatory bowel disease CD or UC	after 8 years of chronic colitis	repeat every 1-2 yrs	colonoscopy with biopsies

Question 9. (Gen Med # 138)

C; Prompted voiding

Functional incontinence

- There are four main classifications of urinary incontinence:

  urgency, stress, mixed, and overflow incontinence.

- Functional incontinence, occurs in patients who cannot reach and use the toilet in a timely manner, may occur in patients with significant cognitive or mobility impairments.
- Functional incontinence is treated with Providing assistance and scheduled toileting through prompting.

Question 10. (Rheum #94)

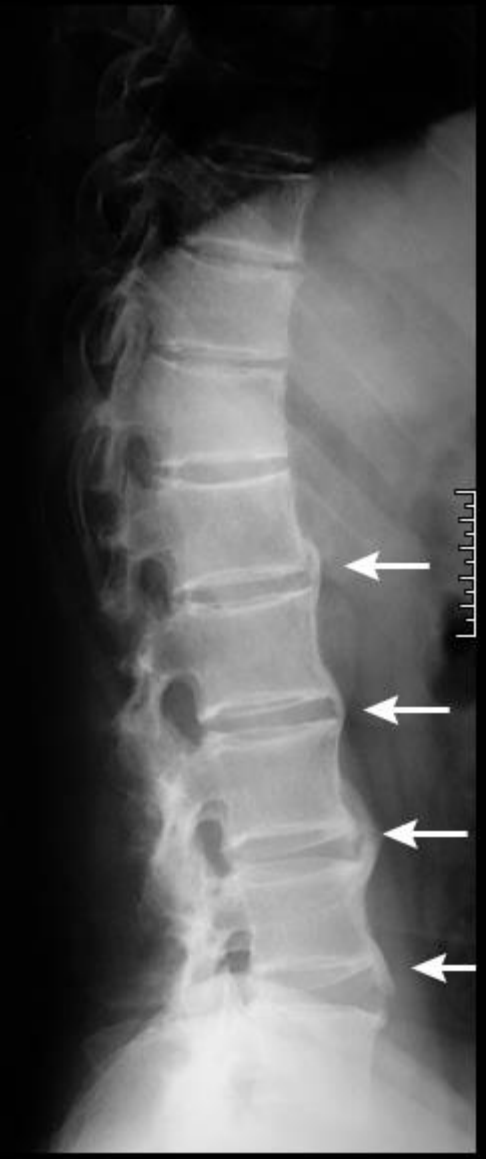
D; Radiograph of the sacroiliac joints

Radiographic evidence of sacroiliitis

- erosions begin on the iliac side .
- Larger erosions - irregular bony margins - "pseudo-widening" of the joint space.
- sclerosis
- ankylosis: SI joint is fused, the joint space disappears.

In the spine, bony proliferation between vertebral bodies can result in formation of syndesmophytes (bony bridges) that can lead to a “bamboo spine”.

MRI is more sensitive for detecting early spine and sacroiliac joint inflammation when plain radiographs are negative.



Question 11 . (Cardiology # 78)

C; Transesophageal echocardiograph

Perivalvular abscesses

- may be present in 30% to 40% of patients with IE
- risk increased with a bicuspid aortic valve.
- **New conduction defect**
- persistent bacteremia despite appropriate Abx.

Indications for TEE to Dx IE:
- high suspicion for IE when TTE is not diagnostic. - intracardiac device leads or prosthetics - Suspected abscess.

Indications of Surgery:
(1) symptomatic heart failure and valvular dysfunction; (2) left-sided IE caused by fungal infections, Staph aureus, or highly-resistant organisms; (3) associated complications, such as aortic abscess, destructive penetrating lesions, or heart block (4) may be considered with large (>10-mm), left-sided vegetation. (5) reasonable in patients with recurrent emboli
When infective endocarditis is associated with a pacemaker or defibrillator, the entire system (generator and leads) must be removed.

Question 12. (GI # 91)

D; Tenofovir

Hepatitis B

	HBsAg	HBsAb	HBcIgM	HBcIgG	HBeAg	HBeAb	Viral load	ALT
Acute Hepatitis B	+	-	+	-	+	-	> 20,000	High
Resolved infection	-	+	-	+	-	+	Undetected	N
Immunity in vaccinated	-	+	-	-	-	-	Undetected	N
Immune tolerant	+	-	-	+	+	-	>1 million	N
Immune active	+	-	-	+	+	-	**>10,000**	**High**
Immune control, Inactive	+	-	-	+	-	+	<10,000	N
Reactivation	+	-	-	+	-	+	**>10,000**	**High**

Liver injury
Inflammation and fibrosis

Chronic hepatitis B – treatment

- **Indication:**

  1- acute liver failure,

  2- immune-active phase + ALT >2x upper limit N + viral load > 20,000

  3- reactivation phase + ALT >2x upper limit N + viral load > 2000

  4- cirrhosis

  5- immunosuppressed patients.

  6- polyarteritis nodosa or cryoglobulinemia

- First-line treatment is **entecavir or tenofovir**, both decrease hepatic inflammation and the risk for progression to fibrosis.

- **Treatment goals:**

  - **immune-active phase**: seroconversion HBe Ag to HBeAb, followed by an additional 12 months of Rx.

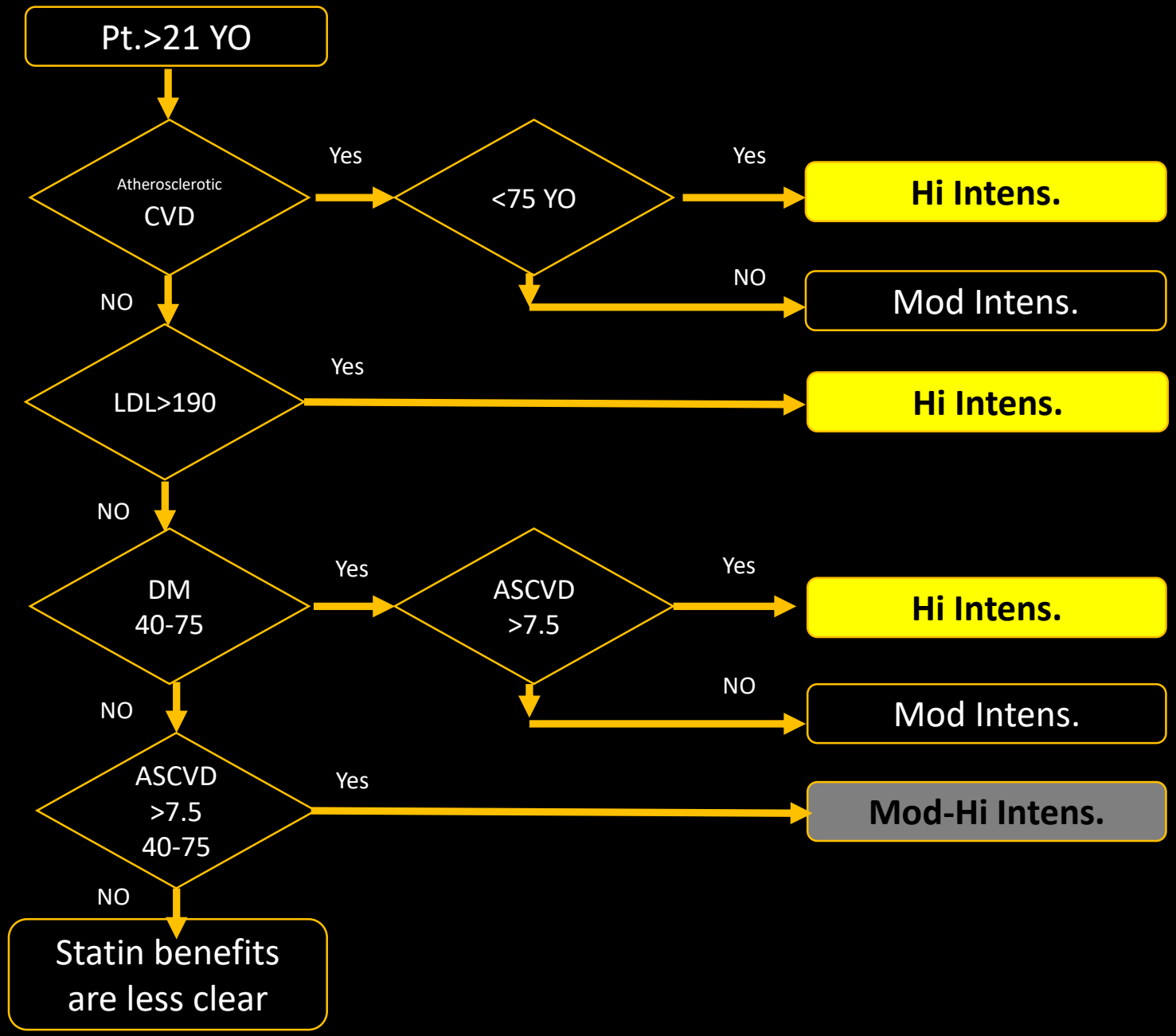
  - **reactivation phase**: HBV DNA suppression and ALT normalization; oral antiviral continued indefinitely.

  - Patients with **cirrhosis** should continue oral antiviral medications indefinitely

Question 13. (Gen Med #1)

B; High-intensity rosuvastatin

The 2013 ACC/AHA cholesterol treatment guidelines



an initial fasting lipid panel then at 4 to 12 weeks after initiation of therapy to determine adherence and response.

check ALT at baseline before initiating statin therapy. Further hepatic monitoring is unnecessary if the baseline ALT is normal

Question 14. (ID #48)

B; Cefazolin and rifampin

Osteomyelitis

- **imaging** : start w plain radiograph, if not diagnostic, → MRI, w/wo IV CON,if CI → CT w IV CON, if CI → Nuclear medicine studies.

- **bone biopsy** to direct ABx,

  not required in persons with positive bld Cx (hematogenous OM such as vertebral OM),

  except in IV drug users because they have frequent bacteremias, and the organism in the blood culture may not represent the pathogen in the bone.

- Unless systemic signs of sepsis or concomitant soft tissue infection or bacteremia are present, empiric antibiotics should be **withheld** until a bone biopsy is obtained.

- Orthopedic hardware should be removed, if possible, to increase the chance of therapeutic success.

- **Hard ware associated staph OM:**

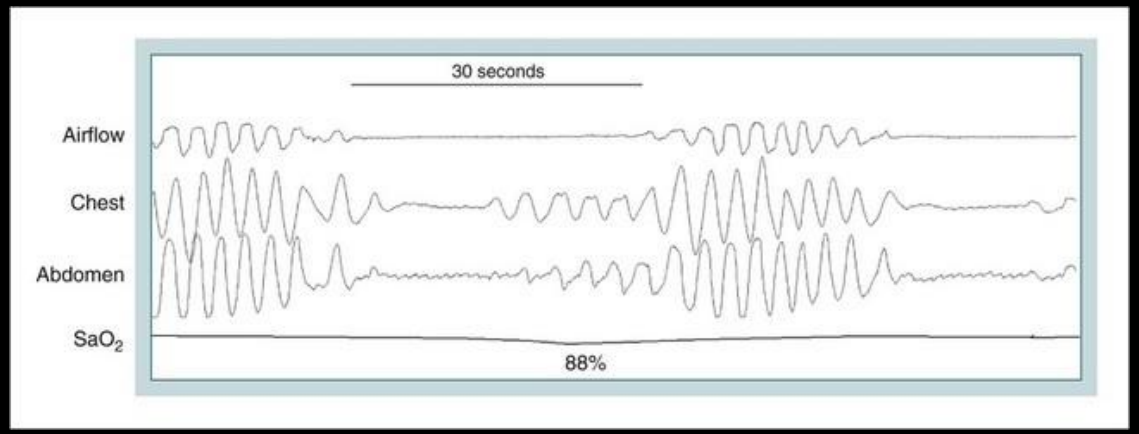
  Rifampin should be used for its activity against micro-organisms biofilms in combination with another antistaph agent if the hardware cannot be removed.

Question 15. (Pulm # 25)

C; Furosemide

Central sleep apnea

Cheyne-Stokes breathing: cyclic crescendo-decrescendo respiratory effort, in the absence of upper airway obstruction. Apnea accompanying the decrescendo effort defines central sleep apnea.



Dx:

- gold standard: in-lab polysomnography
- Home sleep testing is diagnostically similar in otherwise **uncomplicated patients** (without underlying cardiopulmonary or neuromuscular disease) who are felt to have at least **moderate to severe OSA** (to minimize false negatives that may occur in milder disease).

Treatment of central sleep apnea
Initial Rx- target modifiable risk factors: - heart failure - Atrial fibrillation - opioid analgesics
Adaptive servo-ventilation *However, a large multicenter trial unexpectedly showed increased mortality in pts with systolic heart failure (EF<45%) and central sleep apnea treated with adaptive servo-ventilation.*

Question 16. (Gen Med #68)

B; Fluid aspiration

Prepatellar Bursitis

- **Acute** prepatellar bursitis are caused by **infection** with skin bacteria and less commonly by trauma and gout.

- **Chronic** prepatellar bursitis is usually caused by repetitive trauma, although gout and infection are possible.

- All patients with prepatellar bursitis regardless of duration should undergo **fluid aspiration** and analysis.

- Prepatellar bursitis due to repetitive trauma is managed with activity modification (avoidance of kneeling), in addition to oral NSAIDs.

Most patients with hyperuricemia do not have gout.
serum urate level may be low during some acute attacks.

Question 17. (Rheum #35)

A; Duloxetine

Chronic osteoarthritic knee pain

- **Duloxetine** is FDA approved for chronic musculoskeletal pain and has been shown to have analgesic efficacy for chronic low back pain and knee osteoarthritis pain.

- Recent systematic reviews and meta-analyses suggest that acetaminophen provides **NO** benefit for hip or knee OA.

- A 2018 randomized controlled trial demonstrated that **opioids were not superior to nonopioid** medications for improving pain-related function for chronic back pain or OA-related hip or knee pain; pain intensity was significantly improved in the nonopioid group.

- Gabapentin and pregabalin are more effective than placebo in the treatment of neuropathic pain conditions such as postherpetic neuralgia and diabetic neuropathy.

Question 18. (Nephrology #79)

D; Sevelamir

The vicious cycle

- ↓ 1,25-diOH vit D and resultant ↓ Ca → secondary hyperPTH.
- PTH activate of osteoclast → releasing Ca and Phos.
- PTH increases phos. excretion by the kidneys

- as CKD progresses (GFR <30), PTH mediated phos. excretion becomes overwhelmed and the **kidney is unable to compensate for the increased release of phos. from bone**, and phosphorus levels rise.

- hyperphosphatemia stimulates PTH production.

Treatment of secondary hyperPTH in CKD 3-5:

- Initial Rx: correction of serum Ca, phos., and 25-OH vit. D levels.
- calcitriol - if hyperPTH persists after normalization of the above.
- Calcimimetics (Cinacalcet):

  FDA approved only for use in dialysis pt,

  off-label for vitamin D analogues has led to hypercalcemia.
- parathyroidectomy : definitive Rx for Tertiary hyperPTH, symptomatic refractory hyper PTH.

- KDIGO guidelines now recommend **restricting calcium-based phosphate binders** (calcium carbonate and calcium acetate) in CKD stages G3a to G5, rather than restriction only in those with hypercalcemia. based on :

  - published trials suggesting that **exogenous calcium is harmful in terms of vascular calcification**,

  - data suggestive of lower mortality risk with non–calcium-containing phosphate binders.

Question 19. (Pulm #11)

A; Beclomethasone

Assessment	Intermit.	Persistent		
		Mild	Mod	Severe
Symp	2 d/w 2 N/M	>2d/w >2 N/M	Daily >1 N/W	Throughout the day Nightly
	None	Minor	Some	Extreme **limitation of daily activities**
Risk	FEV1 >80	FEV1>80	60-80	**FEV1**< 60%
		Normal	<5%	**FEV1/FVC** reduced > 5%
	0-1 x/yr	2 or more **exacerbations** / year		
Rec. step for initiating **treatment**	Step 1 **SABA** PRN	Step 2 **LD ICS** Alt: Cromolyn, LTRA or Theo	Step 3 LD ICS **+ LABA** Or MD ICS Alt: LD ICS + Either: LTRA, theo or zileuton	Step 4 **MD** ICS +LABA Alt: MD ICS+ Either: LTRA, theo or zileuton	Step 5 **HD** ICS + LABA Omalizumab for pt with allergies	Step 6 HD ICS + LABA + **PO steroids** Omalizumab for pt with allergies
	Each step: PT education, environmental control & Rx of comorbidities					
	Step 2-4: consider SQ allergen immunRx for Pt w allergic asthma					
Assess & adjust Rx	In 2-6 wks, evaluate level of control and adjust therapy accordingly.					
	use of SABA >2 d/w **indicates inadequate control** and need to step up.					
	Check adherence, environment & comorbidities control before step up.					
	Step down if well controlled for at least 3 months.					

Common Comorbidities:
GERD
Sinus disease
OSA
vocal cord dysfunction
Obesity

omalizumab ind:
mod.-severe persis.asthma with:
(1) inadequate control w ICS
(2) perennial allergies
(3) IgE levels 30 -700 U/mL

Mepolizumab and reslizumab are Ab to IL-5, reduce exacerbations of severe asthma in patients w **bld eos**. of 150/µL or 300/µL, respectively, or higher.

Question 20. (Gen Med #100)

C; Symptom control

Pharyngitis

- mostly viral

  only 5-15% are bacterial, most often group A Strep. pyogenes (GAS).

- the High Value Task Force of the ACP recommends that pts with **fewer than three Centor criteria** (fever by history, tonsillar exudates, tender anterior cervical lymphadenopathy, and absence of cough) need not be tested for GAS pharyngitis; and should be treated conservatively.

- Antibiotic treatment is reserved for pts with a positive rapid Ag detection test or throat culture; amoxicillin and penicillin are first-line therapy.

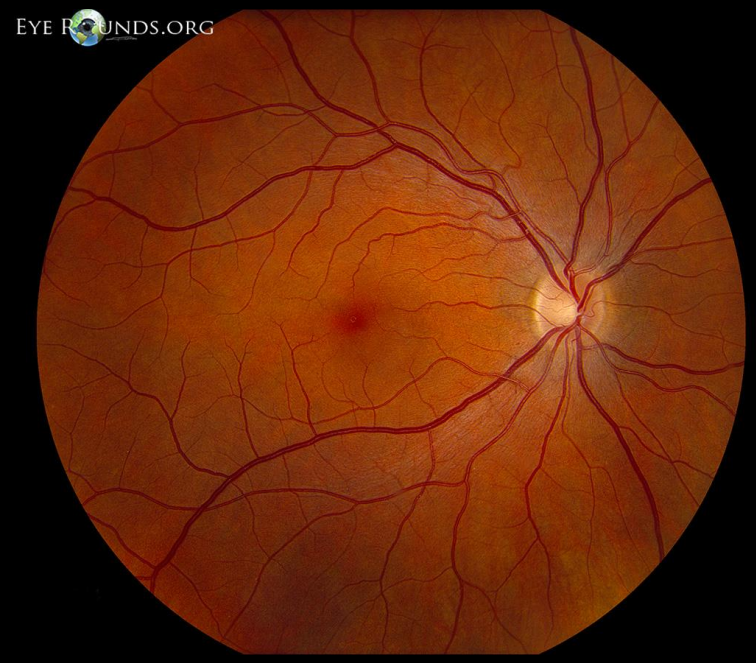
Question 21. (Gen Med #76)

B; Central retinal artery occlusion (CRAO)

Eye Emergencies Requiring Immediate Ophthalmology Evaluation

- Optic Neuritis*
- Retinal detachment*
- Central retinal artery occlusion*
- Central retinal vein occlusion*
- Acute angle-closure glaucoma
- Keratitis
- Scleritis
- Uveitis
- Chemical injury
- Corneal ulcers
- Endophthalmitis

* PICTURE OF FUNDUS



NORMAL FUNDUS EXAM

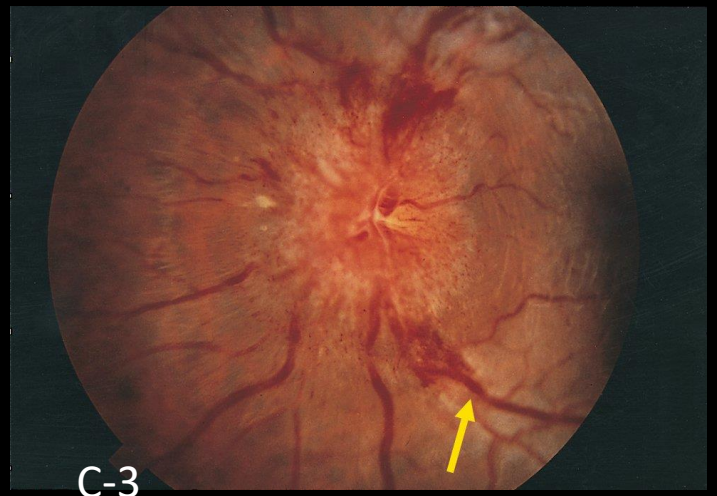
Fundoscopy

A. Central retinal artery occlusion (CRAO)
B. Central retinal vein occlusion (CRVO)
C. Optic nerve papillitis
D. Retinal detachment

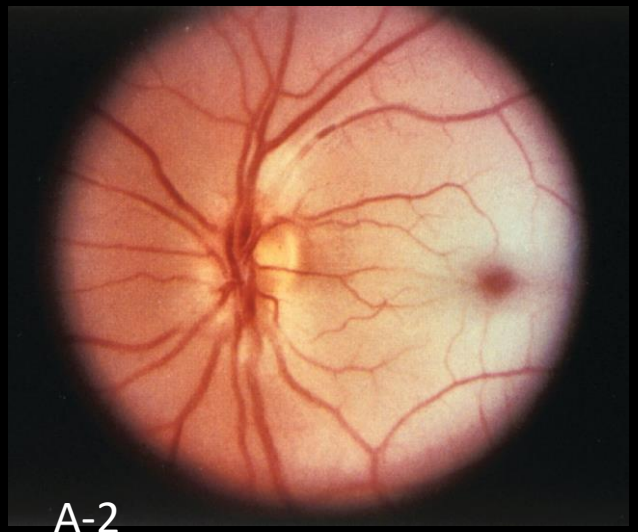
1. Acute onset of blurred, painless monocular vision
2. Acute onset of profound, painless monocular vision loss associated with carotid atherosclerosis, GCA, or cardiac embolism
3. Pain with eye movement associated with color vision loss occurring over hours to days
4. Sudden appearance of floaters drifting through the visual field with a curtain-like shadow

D-4

B-1



C-3



A-2

Question 22. (Cards #43)

C; Discontinue hydrochlorothiazide and diltiazem and start furosemide

Heart failure with preserved EF

Classic presentation:

- Elderly woman
- Long-standing hypertension
- LVH

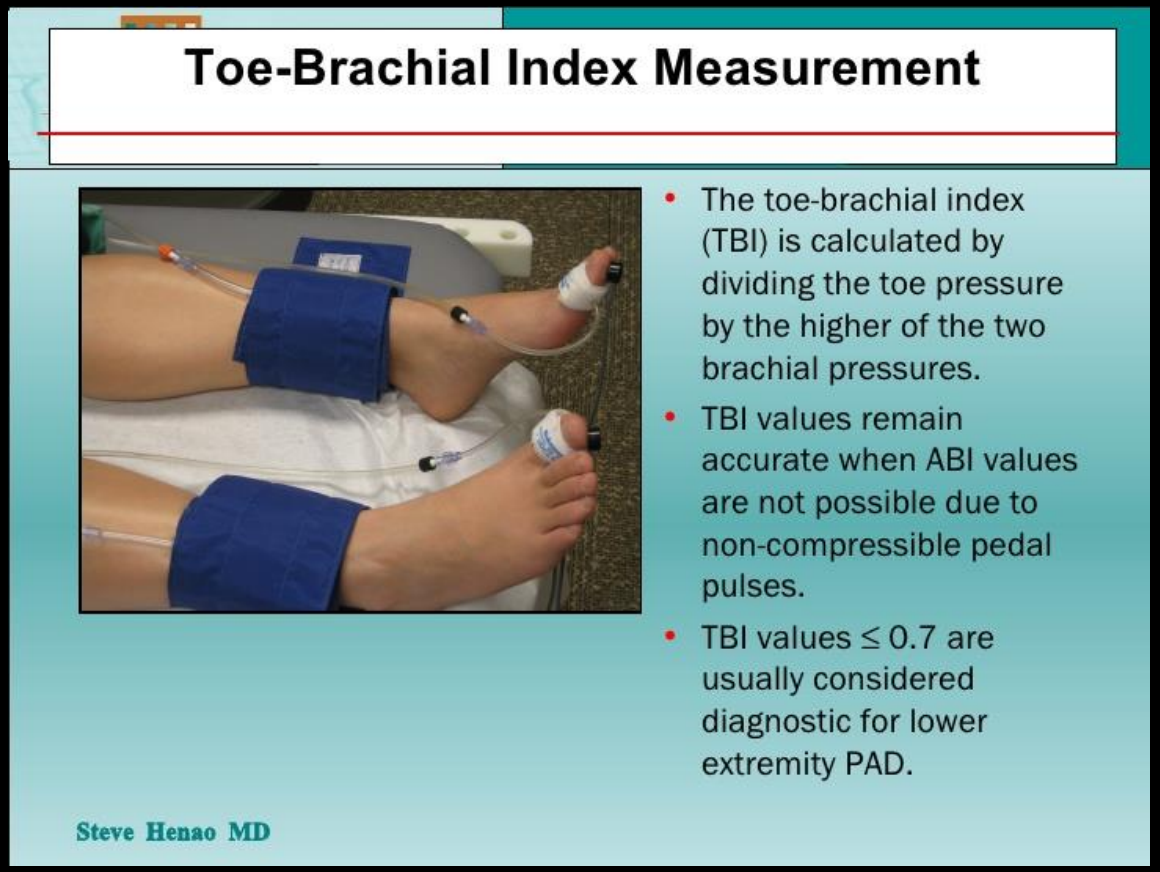
Primary therapies:

- Diuretics for euvolemia
- Antihypertensives BP target <130
- Restoration of sinus rhythm (afib)

- No good evidence for spironolactone in HFpEF
- Ivabradine is for <EF 35% with HR ≥ 70 in sinus rhythm on b-blocker (not AV node blocker, HCN channel blocker)

Question 23. (Cards #24)

C; Toe-brachial index



Peripheral Artery Disease:

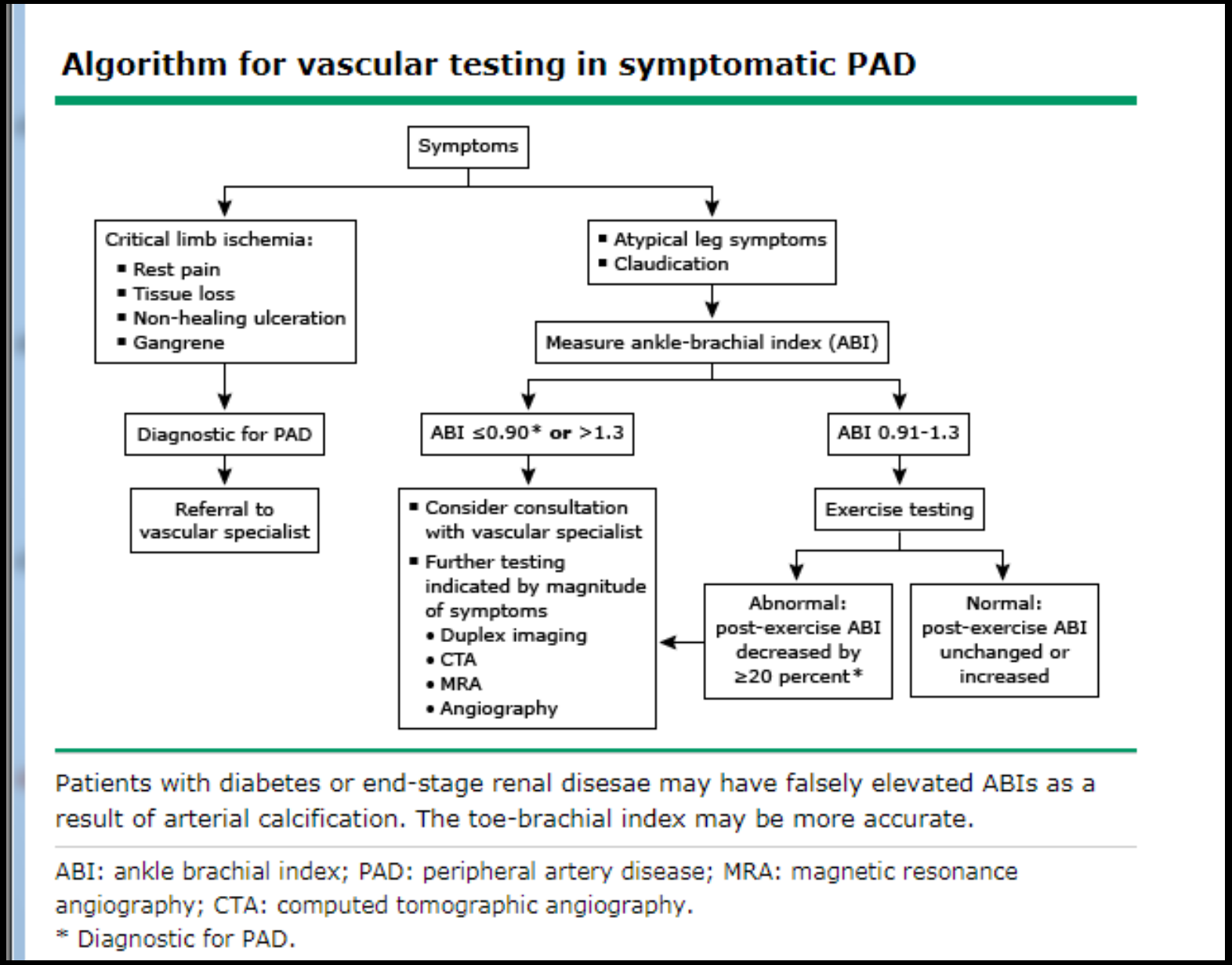
ABI Values:

≤ .90 = PAD

.90-1.29 Normal ***or*** Exercise-induced PAD

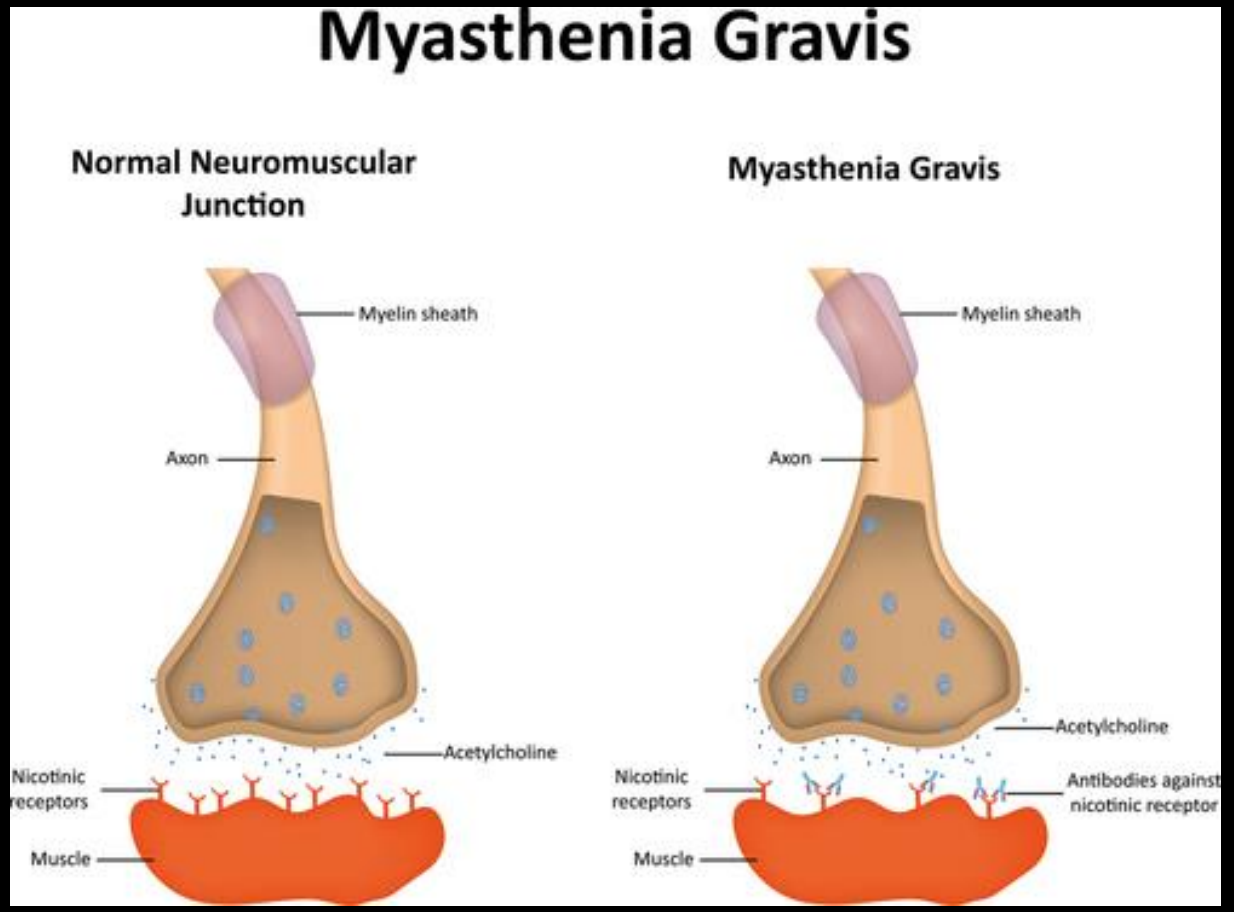
>1.3 =Uninterpretable

> 1.3 Toe-brachial index more accurate



Question 24. (Neuro #23)

D; Myasthenia gravis



Myasthenia Gravis

Clinical presentation:

- Women: 30's Men: 50's
- 66% Ptosis and diplopia
- 10 % Bulbar/cervical weakness

Diagnosis:

- 90% disease specific antibodies
  - 85% acetylcholine receptor abs
  - 5% anti-muscle specific kinase (MuSK) More likely cervical/bulbar disease
- EMG decremental response to repetitive stimulation

Associated diseases:

- Thymoma: screen with chest CT

Treatment:

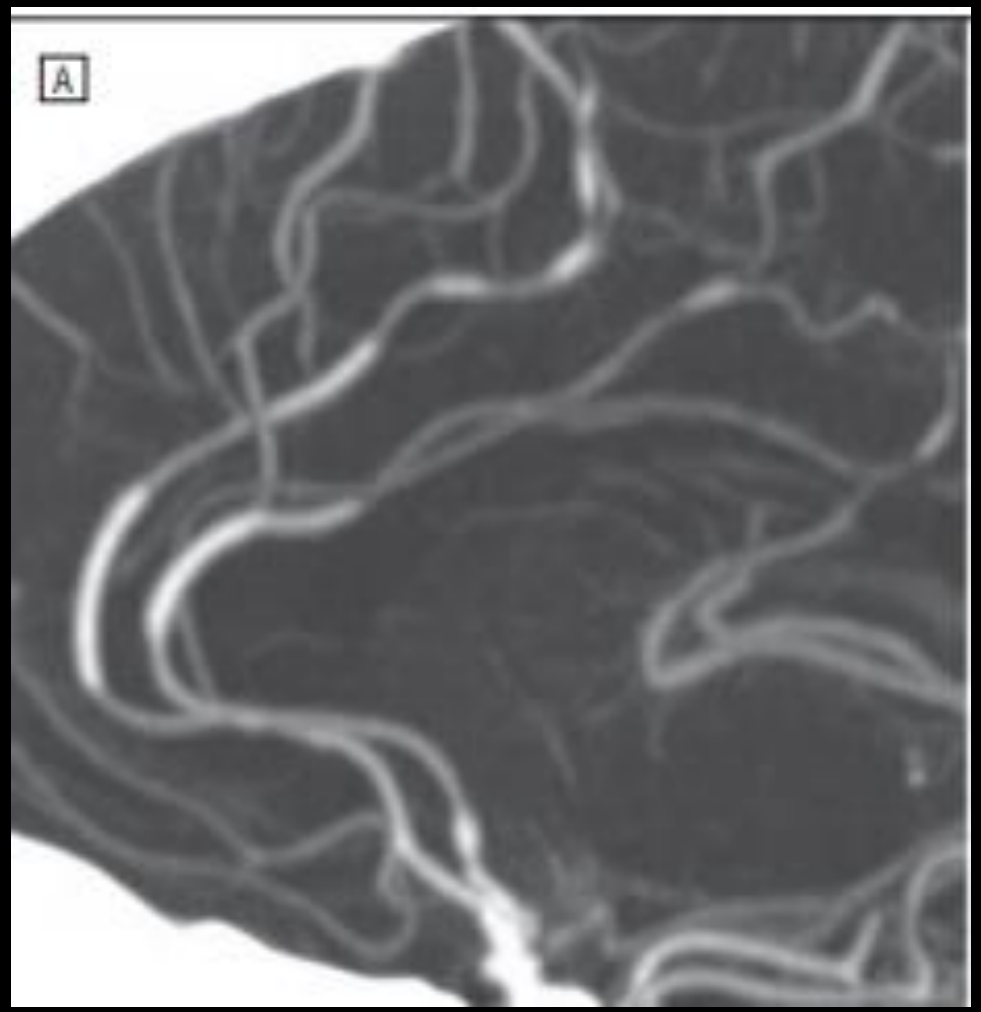
- Plasmapheresis/IVIG/steroids in crisis
- Pyridostigmine in mild cases
- Immunosuppression
- Thymectomy if thymoma

Myasthenia Gravis

Drugs that may unmask or worsen myasthenia gravis
Anesthetic agents
Neuromuscular blocking agents[¶]
Antibiotics
Aminoglycosides[¶] (eg, gentamicin, neomycin, tobramycin)
Fluoroquinolones (eg, ciprofloxacin, levofloxacin, norfloxacin)
Ketolides[◇] (eg, telithromycin)
Macrolides (eg, azithromycin, clarithromycin, erythromycin)
Cardiovascular drugs
Beta blockers (eg, atenolol, labetalol, metoprolol, propranolol)
Procainamide
Quinidine
Other drugs
Anti-PD-1 monoclonal antibodies (eg, nivolumab and pembrolizumab)
Botulinum toxin
Chloroquine
Hydroxychloroquine
Magnesium
Penicillamine
Quinine

Question 25. (Neuro #10)

B; MRA of the brain



Headaches: Primary vs. Secondary

Primary Headache

- Migraine without/with aura
- Chronic Migraine (> 15 day/mo)
- Status migrainosus (> 72 hours)
  - NO ESTROGEN OCP in migraine
- Tension Headache
- Trigeminal autonomic cephalgia
  - Cluster, chronic paroxysmal hemicrania
- Cough and ice-pick headache

Secondary Headache

- Thunderclap headache
  - Emergency! Non contrast CT
  - SAH most common cause
  - RCVS second most common
    - Multifocal constriction of vessels on MRA/CTA
- Idiopathic Intracranial Hypertension
- Intracranial hypotension
- Trigeminal neuralgia
- Medication induced headache

Reversible Cerebral Vasoconstriction Syndrome (RCVS)

Table 1. Summary of Critical Elements for the Diagnosis of RCVS[a]

Elements
1. Transfemoral angiography or indirect (CT or MRI) angiography documenting segmental cerebral artery vasoconstriction
2. No evidence for aneurysmal subarachnoid hemorrhage
3. Normal or near-normal cerebrospinal fluid analysis (protein level <80 mg/dL, white blood cell count <10/μL, normal glucose level)
4. Severe, acute headache, with or without additional neurological signs or symptoms
5. The diagnosis cannot be confirmed until reversibility of the angiographic abnormalities is documented within 12 wk after onset, or if death occurs before the follow-up studies are completed, autopsy rules out conditions such as vasculitis, intracranial atherosclerosis, and aneurysmal subarachnoid hemorrhage, which can also manifest with headache and stroke.

Abbreviations: CT, computed tomography; MRI, magnetic resonance imaging; RCVS, reversible cerebral vasoconstriction syndromes.
[a] From Calabrese et al.[7]

Question 26. (Cards #40)

A; Advise the patient that he should not play basketball

Epidemiology:

- 1: 500 persons (600,000 in US)

Current guidelines:

- Restrict competitive sports to low-static/low-dynamic sports such as golf and bowling.

King's heart: Baylor freshman playing with defibrillator

AP Published 5:46 p.m. ET March 15, 2016

Hypertrophic Cardiomyopathy: What makes the obstruction WORSE…

	Increase or Decrease	Maneuver	Drugs	Condition
Preload	Decrease	Squat to Stand Valsalva	Diuretics Nitrates	Dehydration Hemorrhage
Contractility	Increase		Dobutamine Dopamine	Exercise
Afterload	Decrease	**Isometric hand grip**	Sodium nitroprusside ACE-inhibitors ARBS	Sepsis Anaphylaxis

Question 27. (Heme/Onc #118)

D; No imaging studies

Staging and Prognosis of Invasive Breast Cancer

Stage	Definition	5-Year Relative Survival[a] Rates
0	Ductal carcinoma in situ (negative lymph nodes)	99%
I	IA: Tumor ≤2 cm and negative lymph nodes IB: Tumor ≤2 cm and 1 to 3 micrometastatic positive lymph nodes (0.2-2 mm)	95%
IIA	Tumor ≤2 cm with 1 to 3 positive lymph nodes (>2 mm) ***OR*** Tumor 2-5 cm with negative lymph nodes	85%
IIB	Tumor 2-5 cm with 1 to 3 positive lymph nodes ***OR*** Tumor >5 cm with negative lymph nodes	70%
IIIA	Tumor ≤5 cm with 4 to 9 positive lymph nodes ***OR*** Tumor >5 cm with 1 to 9 positive lymph nodes	52%
IIIB	Tumors with skin or chest wall involvement with 0 to 9 positive lymph nodes	48%
IIIC	Tumors with 10 or more positive lymph nodes	Not stated
IV	Distant metastatic disease	22%

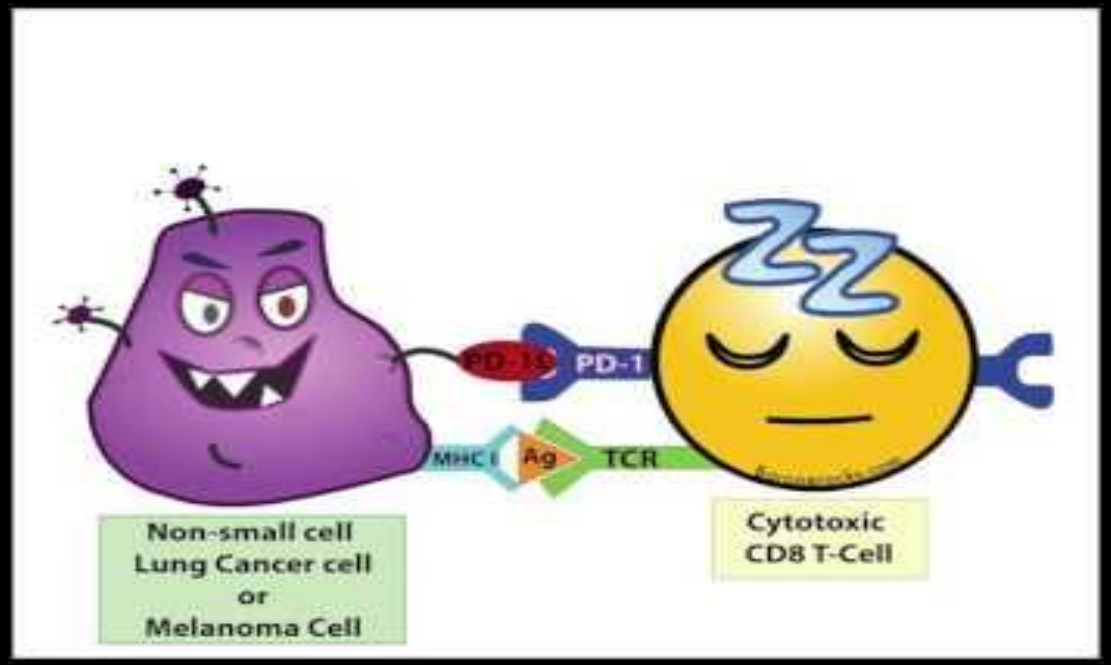
Breast Cancer Staging

- Clinical Staging
  - Symptoms
  - Exam Findings
  - Abnormal lab findings
- Pathologic Staging
  - Biopsy specimens
  - Lymph node specimens

- Stage 0-2 "Early Stage"
  - NO imaging such as PET/CT/bone scan or tumor markers if clinical staging is negative (ASYMPTOMATIC)
- Stage 3-4 "Late Stage"
  - Imaging studies indicated for stage 3 or any clinical symptoms as above

Question 28. (Heme/Onc #140)

B; Programmed cell death ligand 1 expression



Metastatic Non-Small Cell Lung CA

- Ultimately, incurable so get palliative care on-board early!

- Optimal treatment includes
  - Define histology
  - Assess for molecular alterations
  - Determine performance status

- ALK or ROS1 = crizotinib (Xalkori)
- EGFR = erlotonib (Tarceva)
- None of above + good performance status = platinum based doublet (+ bevacizumab)

- Immunotherapy with PD-L1 inhibitor (if >50% of the tumor expresses this biomarker) is superior to chemo for first line *and* second line therapy

Immune Checkpoint Inhibition for Cancer

- CTLA-4 (1987)
  - CTLA-4 acts as a “brake” on T-cells
  - Ipilimumab (Yervoy) inhibits the “brake”
- PD-1 (Programmed cell death- 1) transmembrane protein on T cells, B cells, and NK cells
  - Pembrolizumab (Keytruda)
  - Nivolumab (Opdivo)
- PD-L1/L2 (Programmed cell death- ligand 1 and 2)
  - Atezolizumab (Tecentriq)
  - Avelumab (Bavencio)
  - Durvalumab (Imfinzi)

Question 29. (Cards #35)

C; Coronary CT angiography

Typical Anginal Chest Pain:

1) Substernal
2) Brought on by exertion or emotional stress
3) Relieved with rest or nitroglycerin

Atypical Anginal Chest Pain:

2 of 3 above

Nonanginal Chest Pain:

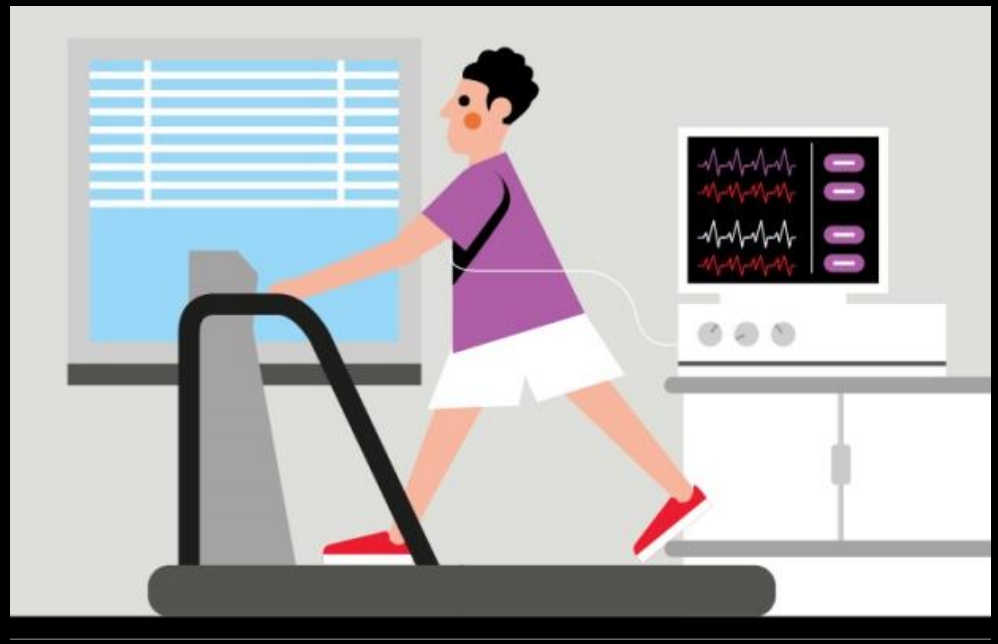
1 or 0 of above

Table 4. Pretest Probability of Coronary Artery Disease (CAD) Based on Age, Sex, and Symptoms

Age, yr	Sex	Nonanginal Chest Pain	Atypical Angina	Typical Angina
30–39	Male	Low	Intermediate	Intermediate
	Female	Very low	Very low	Intermediate
40–49	Male	Intermediate	Intermediate	High
	Female	Very low	Low	Intermediate
50–59	Male	Intermediate	Intermediate	High
	Female	Low	Intermediate	Intermediate
60–69	Male	Intermediate	Intermediate	High
	Female	Intermediate	Intermediate	High

NOTE: Probability levels are defined as follows: high, > 90% pretest probability of CAD; intermediate = 10%–90% pretest probability of CAD; low = < 10% pretest probability of CAD; very low = < 5% pretest probability of CAD.

Testing for CAD: The stress portion



Exercise Contraindications:

- Unable to get to 85% predicted HR
- ST- segment abnormality
- LBBB
- Pre-excitation

Vasodilator Contraindications:

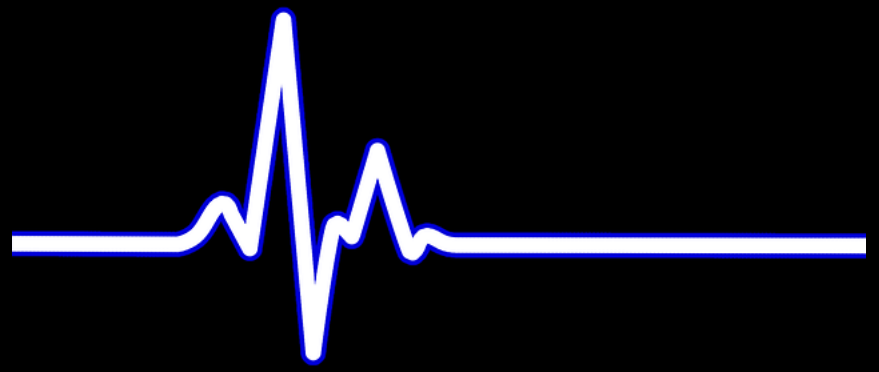
- Severe COPD/wheezing
- Second or third degree heart block
- Oral dipyridamole
- Caffeine use

Dobutamine Contraindications:

- B-blocker use (relative)
- Pre-excitation

Question 30. (Neuro #9)

B; Outpatient cardiac telemetry



Cryptogenic stroke

Definition of Cryptogenic stroke:

- No lacunar infarct
- Arterial imaging normal
- No clear cardioembolic source

- Underlying comorbidities and neuroimaging characteristics guide further work up

Potential Evaluation

- Hypercoagulable work up
- Patent foramen ovale
- Cerebral vasculitis
- Paroxysmal atrial fibrillation
  - Prolonged cardiac monitoring

Question 31. (Gen Med #90)

D; Varenicline

Smoking cessation:

- Combining behavioral counseling with pharmacotherapy is more effective than either modality alone.

- **NRT:**

- combining short and long-acting is more effective than monotherapy.

- **Caution in pts with unstable cardiac disease**, life-threatening arrhythmias, or a recent cardiac event.

- **Bupropion:**

- should **not be used** with a history of seizure disorders, stroke, brain tumor, brain surgery, or head trauma.

- BP should be monitored carefully, as severity of hypertension may increase.

- **Varenicline:**

- **Superior** to single forms of NRT and bupropion

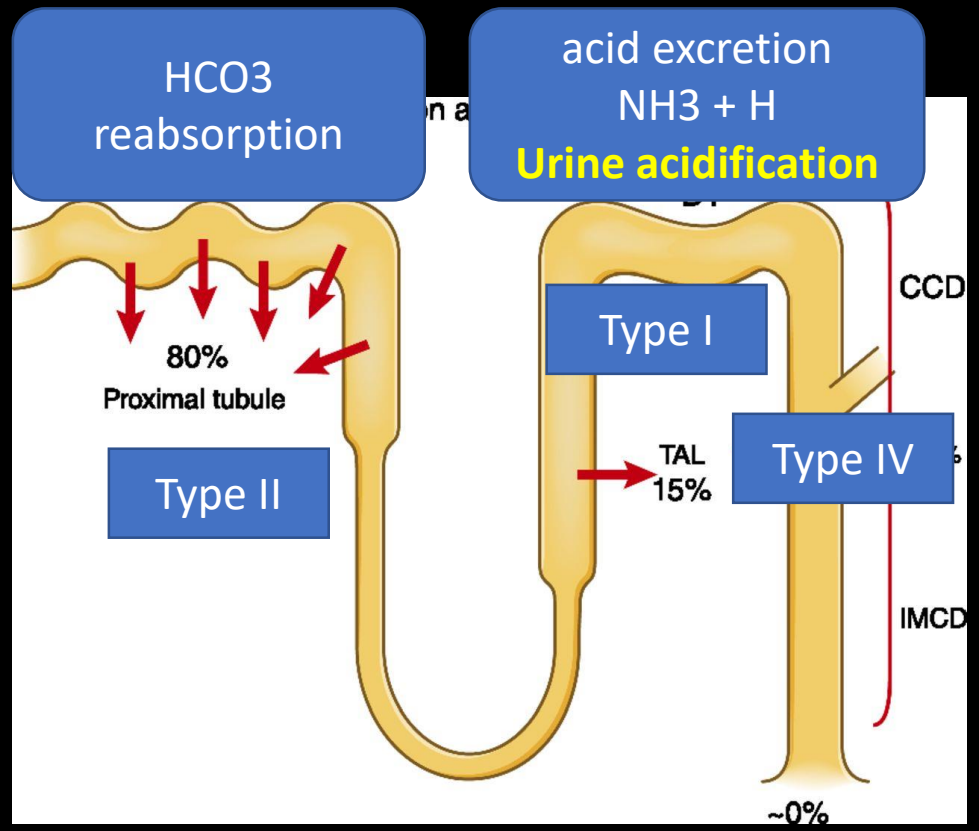
- FDA drug labeling information does not list recent CV events as a CI.

- FDA recently removed the black box warning related to serious mental health adverse reactions with varenicline use.

- Used with caution in kidney failure.

Question 32. (Nephrology #41)

- B; Type 1 (hypokalemic distal) renal tubular acidosis



- Can't measure U.NH4 but can measure the other cations

Urine AG= (U.Na + U.K) – U.Cl

Hypothetically speaking:

U.Na+ K+ NH4 = Cl

Any change in U.NH4 will be on expense of Na

- **U.AG is a function of acid excretion.**

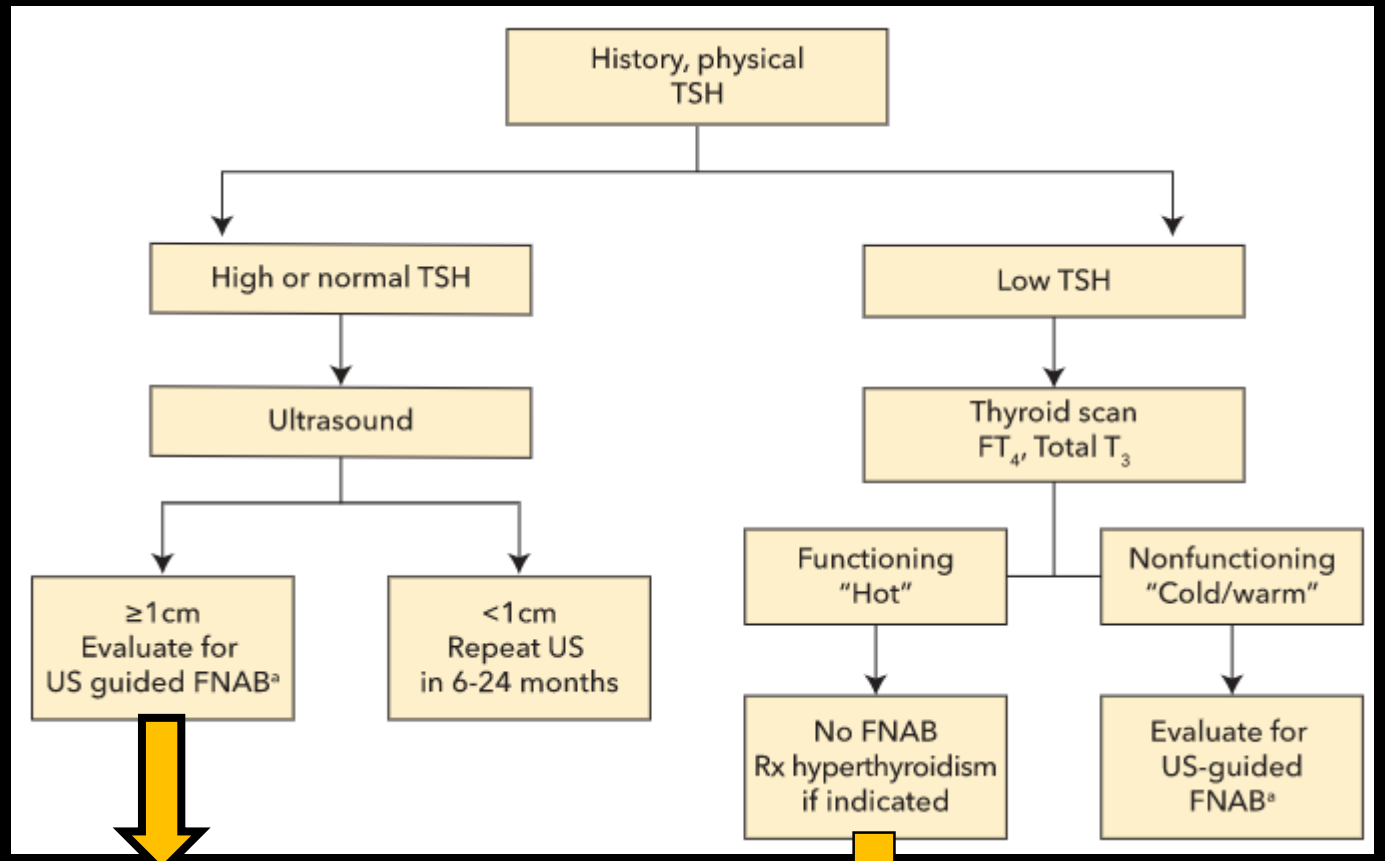
Which RTA is associated with nephrocalcinosis? Why?

Diarrhea	RTA II	RTA I	RTA IV
Extra renal HCO3 loss Distal H excretion is normal **U.Na < U.NH4**	Proximal renal HCO3 loss Distal H excretion is normal **U.Na <U.NH4**	impaired excretion of acid by the distal nephron **U.Na > NH4**	aldosterone def. / resistance HyperK decr. NH3 prod.
U.AG is NEG	U.AG is NEG	**U.AG is POS**	**UAG is POS**
U. PH < 5.5	U.PH < 5.5	**U.PH > 5.5**	U.PH < 5.5
Normal or Hypo K	Hypo K	Hypo K	**Hyper K**

Question 33. (Endocrine #61)

D; Radioactive iodine (I-131) therapy

Thyroid nodules



Hypoechoic solid nodules with one or more suspicious feature:
Microcalcifications,
taller than wide in the transverse plane,
irregular margins,
extrathyroidal extension or pathologic lymph nodes

First-line therapy for toxic adenoma is radioactive iodine (131I) or surgery

Question 34. (Nephrology #47)

E; Preeclampsia

Hypertension in pregnancy:

	Definition	Treatment
Chronic HTN:	SBP ≥140 or DBP ≥90 starting **before 20 weeks** or persisting longer than 12 weeks postpartum.	First-line: methyldopa and labetalol nifedipine can be added
Gestational HTN:	**after 20 wks** W/O proteinuria or end-organ damage and resolves within 12 weeks of delivery.	close attention to HTN in the postpartum period.
Preeclampsia :	new-onset HTN and **proteinuria** (≥300 by U.P/Cr) after 20 wks or new-onset HTN with new-onset end-organ damage (liver or kidney injury, pulmonary edema, cerebral or visual symptoms, or thrombocytopenia)	Definitive treatment: delivery Mild: monitor Severe >160/110 → immed. delivery
Eclampsia:	preeclampsia + generalized tonic-clonic seizures	delivery
HELLP	(hemolysis, elevated liver enzymes, and low platelets) complicates 10%-20% of cases of preeclampsia.	delivery

Question 35. (Nephrology #13)

B; Add losartan

Hypertension

2017 ACC / AHA HTN high BP guidelines

BP Thresholds for and Goals of Pharmacologic Therapy in Patients with Hypertension According to Clinical Conditions

Clinical Condition (s)	BP Threshold mm Hg	BP Goal mm Hg
General		
Clinical CVD or 10 year ASCVD risk ≥ 10%	≥130/80	<130/80
No clinical CVD and 10 year ASCVD risk <10%	≥140/90	<130/80
Older persons (≥65 years of age; non-institutionalized, ambulatory, community-living adults)	≥130 (SBP)	<130 (SBP)
Specific Comorbidities		
Diabetes mellitus	≥130/80	<130/80
Chronic kidney disease	≥130/80	<130/80
Chronic kidney disease post-renal transplantation	≥130/80	<130/80
Heart failure	≥130/80	<130/80
Stable ischemic heart disease	≥130/80	<130/80
Secondary stroke prevention	≥140/90	<130/80
Peripheral arterial disease	≥130/80	<130/80

Nonblack, including pts w DM initial Rx: thiazides,CCB,ACEi/ARB

In **black pts**, initial Rx should include: a thiazide or CCB.

ACEi / ARBs may be considered as first line
- DM + **albuminuria.**
- **CKD G 3 or higher** or stage 1 or 2 with albuminuria ≥300

Loop diuretics preferred in symptomatic HF or CKD GFR <30

there is a **nonlinear BP–lowering effect** when titrating from 50% maximal dose to 100% maximal dose of any agent.

75% of an agent's BP–lowering effect may be achieved with 50% of its max dose.

If BP control requires an additional >5–mm Hg reduction, it is unlikely to be achieved by increasing the single agent from 50% to 100% maximal dose. The better strategy is to add a second drug or a third drug to a two-drug regimen.

Question 36. (Rheum #87)

C; Increase allopurinol

Gout – Urate lowering therapy

Indications for urate lowering Rx:
(1) ≥ stage 2 CKD
(2) ≥2 acute attacks per year
(3) one or more tophi
(4) uric acid nephrolithiasis.

The 2016 European League Against Rheumatism (EULAR) ***"treat-to-target"*** Uric acid < 6.0 in pts w/o tophi and <5.0 in pts w tophi. *urate crystalizes at a levels >7*

The 2016 American College of Physicians guideline ***"treat to avoid symptoms"*** approach without specifically considering the serum urate levels.

Contrary to prior practice, urate-lowering therapy can be initiated **during an acute** attack if **adequate anti-inflammatory** therapy is concurrently started (improve compliance).

anti-infl. prophylaxis when starting ULT:
Colchicine 0.6 mg, low-dose NSAIDs or glucocorticoids.
W/O tophi: at least 6 mo and 3 mo after achieving target Ua.
w tophi: 6 mo after achieving target Ua and resolution of tophi.

Three classes of ULT:

xanthine oxidase inhibitors (reduce urate production), recommended **first-line** therapy.

Allopurinol : approved for doses up to 800 mg/d.
AE hypersensitive rash and DRESS

Febuxostat : less likely to cause hypersensitivity
increased risk of heart-related death

uricosuric agents (decrease renal urate resorption), less effective than XOi
avoid in CKD or nephrolithiasis.

pegloticase (a uricase).
Ind: intolerance or resistance to standard therapies.
30-50% of pts develop antibodies to the drug within a month, rendering it ineffective and increasing the likelihood of infusion reactions.

Prophylaxis of acute flares while ULT:

- ULT will mobilize uric acid crystals from the joints can provoke acute attacks.
- Lowering serum urate **slowly** (1-2 mg/dL per month) to minimize the occurrence of gout flares.
- Use colchicine, 0.6 mg (once or twice daily);

  if intolerant (diarrhea) -> use low-dose NSAIDs or glucocorticoids.
- Duration:

  pts w/o tophi: cont prophy for at least 6 months and **3 months** after achieving the target serum urate levels

  pts with tophi: cont prophy for **6 months** following achievement of the target serum urate level and resolution of tophi.

Question 37. (Gen Med #85)

B; Discontinue sertraline and initiate bupropion

sexual side effects of SSRIs:

- SSRI are generally well tolerated among patients with major depressive disorder, but **sexual side effects** (such as anorgasmia, delayed orgasm, and reduced libido) are common.

- Bupropion is an appropriate alternative, as is cognitive behavioral Rx.

Question 38. (GI #66)

B; Ciprofloxacin

SBP Prophy

- infection occurs in 30% to 40% of patients within 1 week of variceal bleeding. Most commonly SBP, as well as bacteremia, UTI, and pneumonia.

Indication for SBP prophy	**Rx**
one or more episodes of SBP.	Daily Bactrim, Cipro or norfloxacin
advanced cirrhosis (Child B or C) **+ GI bleeding**	ceftriaxone 1 g IV daily , **switch to PO** (Bactrim 1 DS tab BID, or cipro mg BID or Norfloxacinmg daily) once bleeding has been controlled and the patient is stable and eating. **Seven days** of total antibiotic treatment are given.
ascitic fluid protein is <1.5 with either : - impaired renal function (defined as a cr. ≥1.2, BUN ≥25, or Na ≤130), or - liver failure (defined as a Child score ≥9 and a bili ≥3).	long-term primary prophylaxis with a fluoroquinolone antibiotic

Question 39. (GI # 26)

A; Initiate enteral feeding

Enteral nutrition in acute pancreatitis

- **Enteral nutrition is preferred** in acute pancreatitis because it maintains a healthy gut mucosal barrier to prevent translocation of bacteria into necrotic pancreatic tissue.

- Mucosal barrier is not maintained when NPO for prolonged periods, so NO TPN.

- Enteral feeding should begin **within 72 hours** if oral feeding is not tolerated.

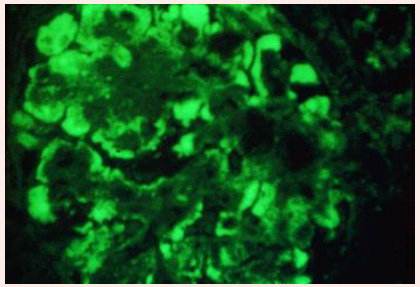
- Both **nasogastric** and nasojejunal enteral feeding are safe and have comparable effectiveness. Studies show nasogastric tube feeding is well tolerated, and NG placement is easier, more cost effective.

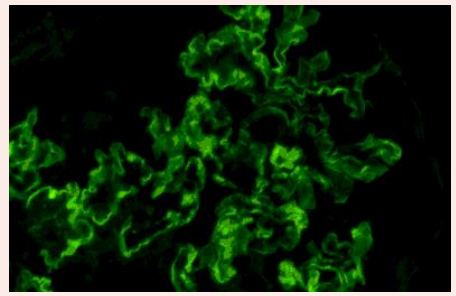
Question 40. (Nephrology #77)

A; Staphylococcus aureus

Categorization of Glomerulonephritis

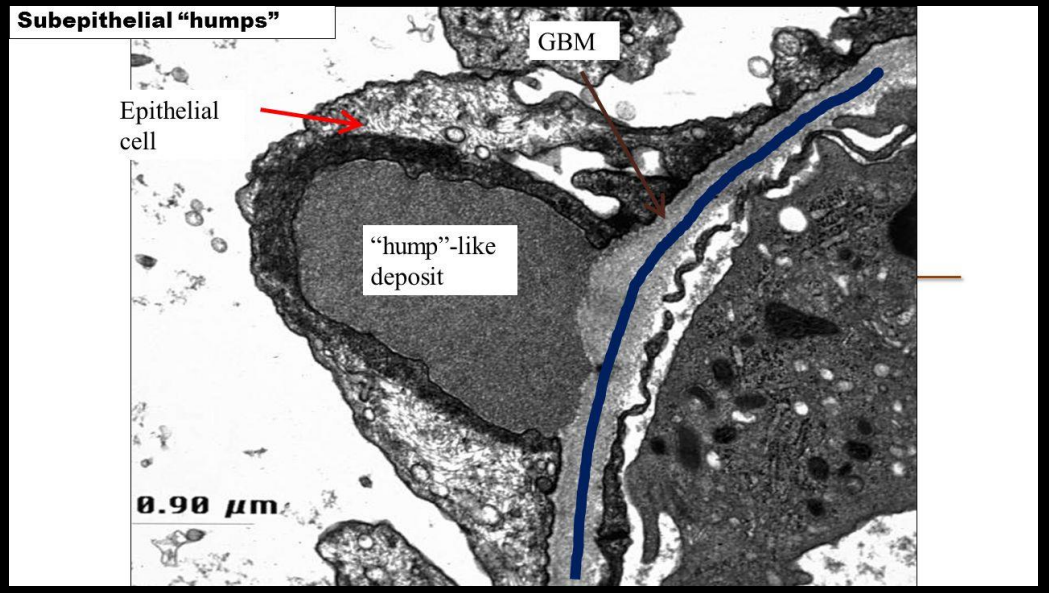
Immunofluorescence Staining Pattern		
Granular	Pauci-immune	Linear
Lupus nephritis Infection-related GN IgA nephropathy MPGN Cryoglobulinemic GN	ANCA-associated GN Churg – strauss Thrombotic microangiopathy Renal atheroembolism	Anti-GBM antibody disease





Low Serum C3 and/or C4 Levels	Normal Serum C3 and C4 Levels
Lupus nephritis Infection-related GN MPGN Cryoglobulinemic GN	**IgA nephropathy** ANCA-associated GN Anti-GBM antibody disease

Infection related GN



- low serum complement levels.
- proliferative GN on light microscopy
- Granular immunofluorescence of C3 and IgA
- subepithelial hump-like deposits on EM

- In the developed world, the epidemiology of IRGN has drastically shifted over the past few decades, moving away from streptococcal-associated to S. aureus.

- In **poststreptococcal GN**, there is a **latent period** between the resolution of the streptococcal infection and the acute onset of the nephritic syndrome:
  - 7 - 10 days after oropharyngeal
  - 2 - 4 weeks after skin infections.
- In **non-poststreptococcal IRGN**, the GN **coexists** with the triggering infection.
  Sites of infection: upper and lower respiratory tract, SSTI, bone, teeth/oral mucosa, heart, deep abscesses, shunts, and indwelling catheters.

Question 41.

B; Morbilliform drug reaction

DRESSS: V-neck and A-line skirt!

VARIOUS organ systems (V Neck)

- Skin eruption + facial edema
- Lymphadenopathy
- Eosinophilia and atypical lymphocytes
- Liver (hepatomegaly/jaundice)
- Kidney (interstitial nephritis)
- Lung (cough, infiltrates, hypoxemia)

- 4-As (A-line Dresses!!)
  - Allopurinol
  - Antiepileptic
    - Carbamezapine, Phenytoin, Lamotrigine
  - Antimicrobial
    - Vancomycin, Minocycline, Sulfamethoxazole
  - Antiinflammatory
    - Sulfasalazine

Question 42. (Cardiology #55)

A; Exercise echocardiography

Must do exercise or dobutamine echocardiography to see if patient will benefit from valvuloplasty or valve replacement in asymptomatic severe MS *or* symptomatic moderate MS!

Mitral stenosis

- Etiology
  - Rheumatic heart disease
  - Radiation induced (10-20 year delay)
  - Congenital
  - Vegetation
- Clinical Presentation
  - Exercise induced dyspnea
  - Pulmonary hypertension
  - Pregnancy induced dyspnea (increased volume)
  - Afib (Atrial enlargement) with poorly tolerated RVR
  - Systemic embolism
  - Hemoptysis
- Diagnosis
  - Loud S1, Loud P2 of S2, diastolic opening snap and diastolic rumble
  - Severe valve area < 1.5 cm2
  - Severe mean valve gradient > 10 mm Hg at normal HR
- Treatment
  - Symptomatic patients with moderate MS if there is evidence of hemodynamically significant MS during exercise (Class IIB recommendation.

Question 43. (Heme/Onc #96)

B; An immune checkpoint inhibitor

Microsatellite Instability (MSI) in Colorectal Cancer (CRC) Therapy:

- 15% of CRCs lack one or more mismatch repair enzymes and are known as (dMMR)-CRCs
- dMMR-CRC is synonymous with increased microsatellite instability (MSI) tumors
- 25% of MSI tumors occur in patients with LYNCH syndrome
- Stage II tumors with MSI are at low risk for recurrence and do not benefit from adjuvant chemotherapy!!

MSI = My sister Is Krista LYNCH = And she is GOOD!

Metastatic Colon cancer therapy in MSI tumors:

- All metastatic colon cancer needs molecular analysis for KRAS, NRAS, BRAF mutation and MSI.
- This tumor had a KRAS mutation
- EGFR receptor inhibitors could be effective in metastatic tumors that DO ***NOT*** have KRAS, NRAS, or BRAF mutations
- MSI metastatic tumors can benefit from immune checkpoint inhibitors (non-MSI tumors do not benefit, which is 95% of colon cancer tumors)

MSI = My Sister Is

Krista LYNCH =

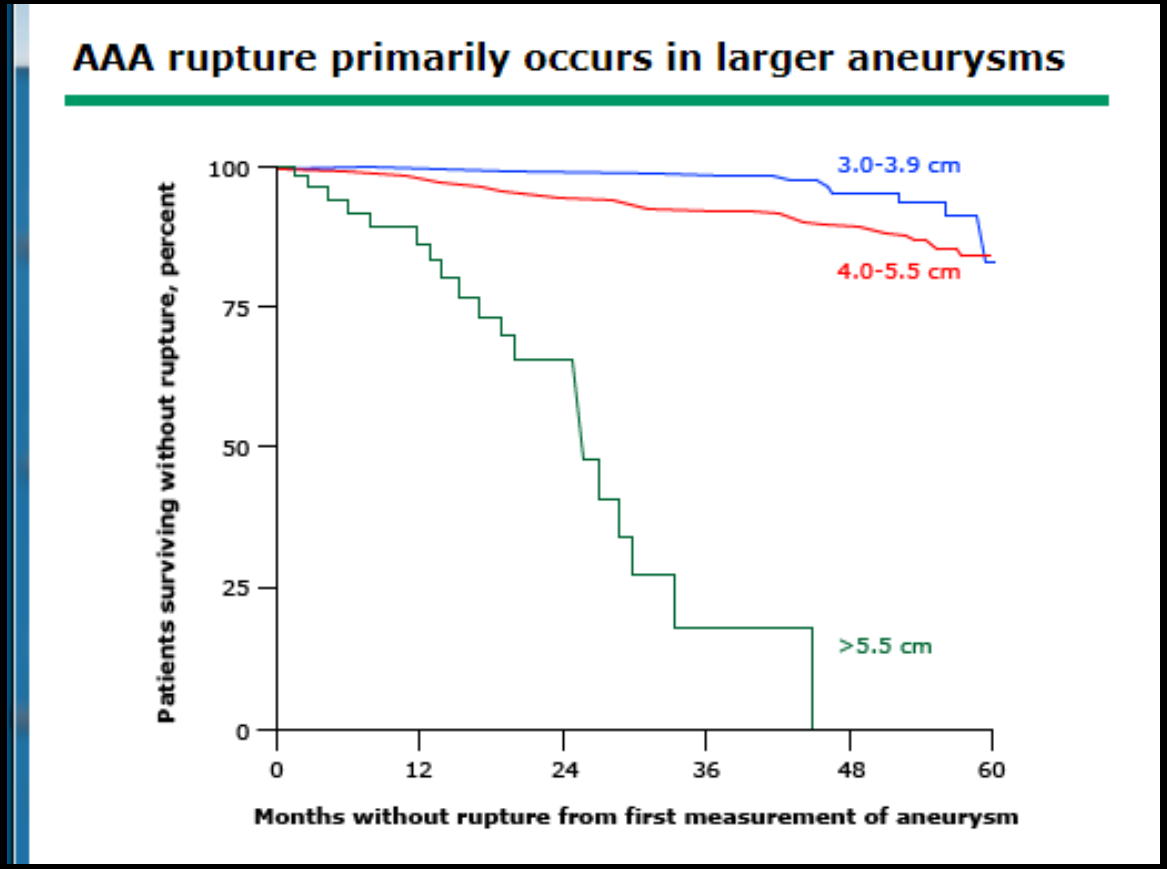
And She is GOOD!

Question 44. (Cardiology #77)

C; Repeat aortic ultrasonography in 24 to 36 months

Abdominal Aortic Aneurysm

- USPSTF:
  - Men 65-75 who have ever smoked
- Society for Vascular Surgery:
  - Men and women 65-75 who have smoked get 1 ultrasound screen
  - Men and women >75 who have smoked and are otherwise in good health
  - First degree relatives of patients with AAA 65-75 or > 75 and in good health



Abdominal Aortic Aneurysm

Monitor

- Diameter < 4 cm
  - 5 year risk of rupture: 2%
  - Repeat ultrasound 24-36 months
- Diameter 4-5 cm
  - 5 year risk of rupture: 3-12%
  - Repeat ultrasound 6-12 months
- Diameter 5-6 cm
  - 5 year risk of rupture: 25%
  - Repeat 6 months

Repair

- Diameter≧5.5 cm
- Symptoms
- Rapid growth
  - >0.5 cm in 6 months
  - > 1 cm in 1 year

Question 45. (Heme/Onc #132)

D; Now

Breast Cancer Screening

- Determine Lifetime Risk
  - Average < 15% (12.4%)
  - Moderate 15-10%
  - High > 20%
- Major Factors
  - Personal history of ovarian, peritoneal, or breast cancer
  - Family history of breast, ovarian, or peritoneal cancer
  - Genetic predisposition
  - Radiotherapy to the chest between 10-30 years of age

RECOMMENDED SCREENING FOR HIGH RISK PATIENT

- ANNUAL MRI
  - BRCA mutation
  - First-degree relative of BRCA carrier but untested
  - Lifetime risk > 20-25% based on BRCAPRO or other models
  - Radiation to the chest between 10-30 years of age
    - > 20 Gy or higher
    - Start age 25 or 8-10 years after irradiation whichever is later

Question 46. (Cardiology #99)

A; Cardiac amyloidosis

Cardiac Amyloidosis

Problem List

- Fatigue, DOE, LE edema in black patient
- Normal/Low BP
- JVP, Enlarged liver, 2/6 systolic murmur
- Low voltage QRS, Q waves
- Concentric hypertrophy, no wall motion abnormalities, EF 55%
- RVSP 68 mm Hg

Summary of Problems

- Diastolic Heart Failure
- Normal BP (no history of HTN)
- “Pseudoinfarct” on EKG
- Low voltage with LVH

Diagnosis:

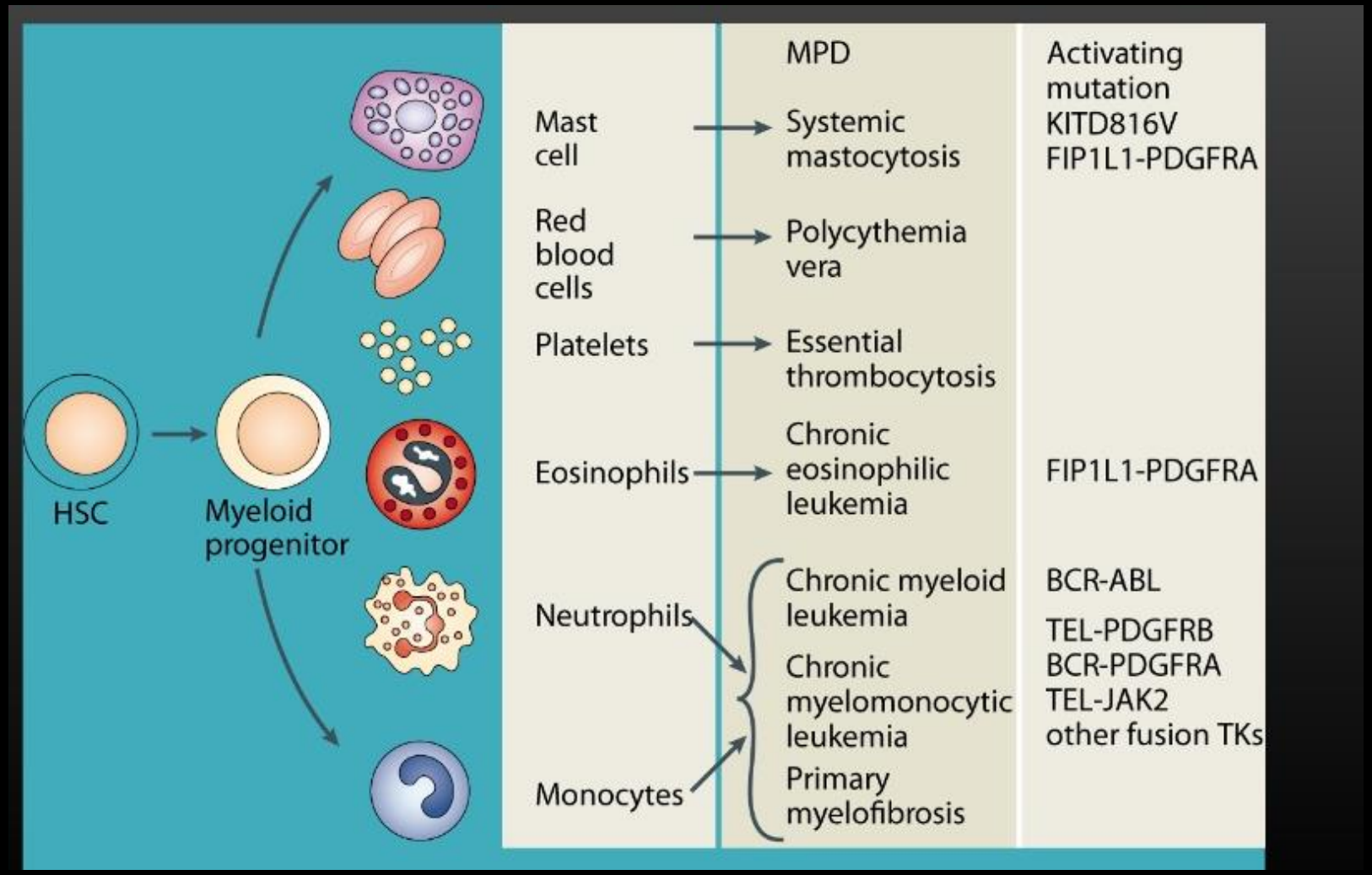
Cardiac Amyloidosis
Mutation in Transthyretin (TTR)

3-4% of black population

Question 47. (Heme/Onc #74)

D; JAK2 V617F mutation

Myeloproliferative Neoplasms: Budd Chiari- Suspect PV!



PV Diagnostic Criteria

Defined with 3 major or first 2 major and minor

Major Criteria

- Hgb > 16.5 in men or 16 in women
- BM morphology showing hypercellularity with trilineage hyperproliferation
- Jak2 mutation positive (95% are positive)

Minor criteria

- Low EPO level

Question 48. (GI #33)

D; Anti-tissue transglutaminase IgA antibody

Celiac Disease: The BEST autoimmune disease

When to suspect:

- ALWAYS
- Mild LFT abnormality
- Iron deficiency anemia
- Abnormal bone density
- Abnormal dental enamel
- Irritable bowel complaints
- Short stature
- Infertility
- Depression
- Peripheral neuropathy
- Cardiomyopathy
- Down's syndrome

Diagnosis:

- MUST be eating gluten
- Anti-TTG Ig A antibody
- IgA level

- If IgA deficient...
  - Anti-TTG Ig G antibody
  - Anti DGP Ig G antibody
  - HLA DQ 2 and DQ 8

Question 49. (Heme/Onc #40)

C; Cryoprecipitate

12

11

9

8

7

Intrinsic + Common = aPTT

Extrinsic + Common = PT

10

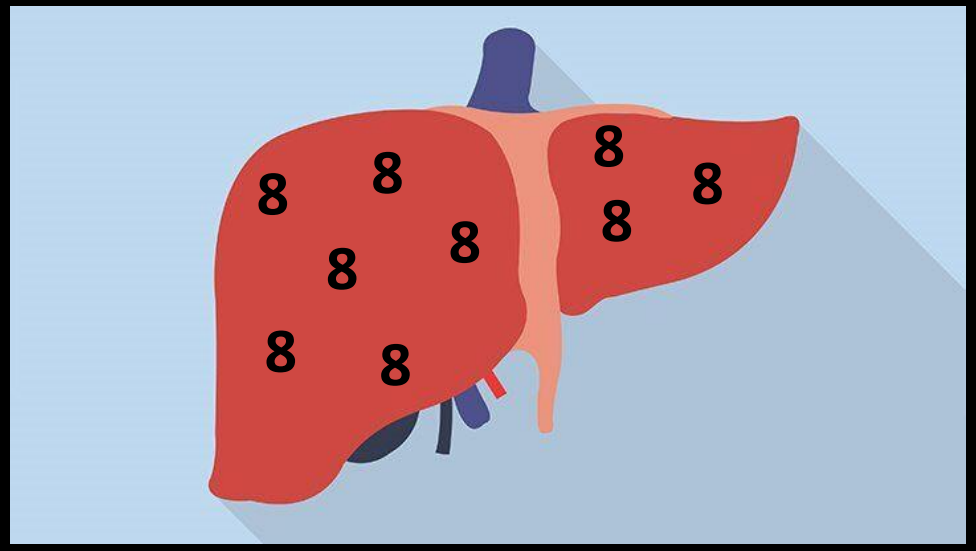
5

2

1

Coagulopathy of Liver Disease

- Liver Disease vs. DIC
  - Prolonged PT and aPTT
  - Low platelets
  - Low fibrinogen
  - Elevated or normal Factor VIII



- Cryoprecipitate
  - Fibrinogen < 100 mg/dL who are actively bleeding

- Prothrombin Complex Concentrate (PCC)
  - Warfarin induced life threatening bleeding
  - 3-factor = 2, 9, and 10
  - 4-factor = 2, 7, 9, and 10

Question 50. (Heme/Onc #16)

A; Direct antiglobulin (Coombs) test

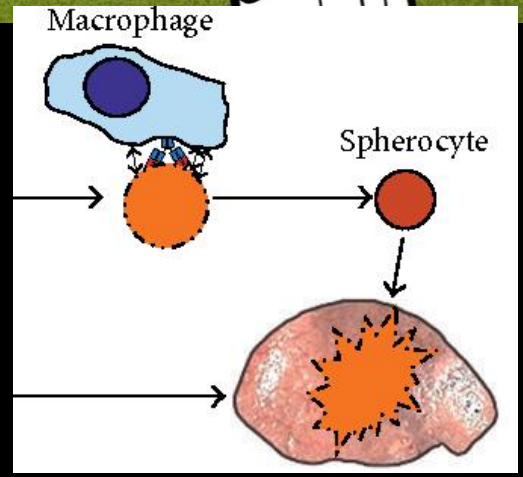
Delayed Hemolytic Transfusion Reaction

- Occurs > 24 hours after transfusion (usually 7-14 days)

- Amnestic response to a previously seen non-ABO RBC antigen (Kidd or Rh)
  - Prior transfusion
  - Pregnancy
  - Organ transplant

- A Direct Coombs test confirms a Delayed Hemolytic Transfusion Reaction

Have I seen you before???



Question 51. (GI #51)

D; Oral mesalamine and mesalamine enema

Rx of IBD

	UC		CD	
	Induction	Remission	Induction	Remission
5-ASAs	Mild flares dose-dependent response **combined PO and topical** is superior than monoRx.	Yes	not proved to be efficacious in small-bowel Crohn disease.	
PO or IV steroids	Mod. to severe flares	No	Mod. to severe flares	No
Immunomodulators azathioprine & 6-MP MTX	NO NO	**Yes** No	No Yes	**Yes** Yes
Biologic Agents infliximab, adalimumab, certolizumab	mod. to severe flares	Combination of infliximab + azathioprine is more efficacious than monoRx	mod. to severe flares	Combination of infliximab + azathioprine is more efficacious than monoRx

Question 52. (Rheum #70)

E; Mycophenolate mofetil

SLE Rx

Agent	Use
Hydroxychloroquine	should be used in **every patient** who can tolerate it. prevents flares, and improves kidney and overall survival. can be used **alone for mild disease (especially skin and joints**) and in combination with other agents in severe disease.
Glucocorticoids	are a mainstay of SLE management, particularly in acute disease.
cyclophosphamide	**induction therapy for severe or refractory disease** (for example, severe active nephritis, acute CNS lupus, DAH, or myocarditis) followed by maintenance therapy with mycophenolate mofetil or azathioprine.
Mycophenolate mofetil	is currently the preferred oral agent for **lupus nephritis induction** therapy. **maintenance** therapy for severe or refractory disease
Belimumab	approved for patients with incomplete response to conventional treatments.

Question 53. (ID #76)

C; Continue current therapy

Prophylaxis against Opportunistic Infections in HIV/AIDS

Opp Inf.	Indication	Preferred agent	Discontinue
Cocci	**CD4 ≤250** + in endemic area If Annual IgM, IgG screening turns +ve	fluconazole	CD4 **>250** for at least **6 months** while on ART.
Pneumocystis	**CD4 ≤200**	TMP-SMX alternatives dapsone, atovaquone or aerosolized pentamidine	CD4 **>200** for at least **3 months** while on ART.
Toxoplasma	**CD4 <100** and positive serology	TMP-SMX Alternative: dapsone plus pyrimethamine and leucovorin.	CD4 **>200** for at least **3 months** while on ART.
MAC	temporary delay in initiating ART with a **CD4 <50**	Azithro 1200 mg weekly clarithromycin, 500 mg BID	until ART is started.
Latent TB	TST >5 mm or +ve QuantiFERON	INH 300 mg daily for 9 months with pyridoxine.	Complete 9 months

Immune reconstitution inflammatory syndrome: is the return of a robust immune response resulting from treatment of HIV that may "**unmask**" a pre-existing infection; when this occurs, the underlying infection should be treated while antiretroviral therapy is continued.

if single-drug therapy with azithromycin was used for prophylaxis, it might select for **macrolide drug resistance**.

Question 54. (Rheum #93)

D; Subacute cutaneous lupus erythematosus

Papulosquamous Diseases

- 3P's
  - Psoriasis
  - Parapsoriasis
  - Pityriasis
- 3L's
  - Lichen Planus
  - Lues (Syphilis)
  - Lupus (Acute, Subacute, Discoid)
- And Fungus
  - Tinea

- Lupus Rashes
  - Acute (malar): 100% have lupus
  - Subacute (trunk, arms, neck, face)
  - Discoid (scalp and face)

Question 55. (Endo #33)

A; Alendronate

Osteoporosis

Indication for Bone Mineral Density Testing (DEXA)

Women age > 65 and men >70
Postmenopausal women and men age 50 to 69, based on risk-factor profile
Those who have had a fracture, to determine degree of disease severity
Radiographic findings suggestive of osteoporosis or vertebral deformity
Glucocorticoid therapy for more than 3 months
Primary hyperparathyroidism

Diagnosis of osteoporosis in premenopausal women and men <50 can be made with:
- diagnosis of a fragility fracture, or
- low bone mass on DEXA defined by a **Z-score < –2.**

Indications for pharmacologic treatment in OP:

- OP-related hip or spine fractures.
- BMD T-score of −2.5 or less,
- BMD T-score between −1 and −2.5 with a 10-year risk of **3% for hip** fracture or risk **of 20% for major** OP-related fracture as estimated by the Fracture Risk Assessment Tool (FRAX).

In glucocorticoid-induced osteoporosis with moderate to high fracture risk, oral **bisphos. are first-line** Rx in adult men and women regardless of age

Bisphos. are **contraindicated** if GFR <35 .

Bisphos. should **not be given until** vitamin D deficiency and hypocalcemia are treated, if present.

Question 56. (Pulm #80)

D; Ventilate the patient in the prone position

ARDS

Berlin Definition of Acute Respiratory Distress Syndrome

The following criteria must be met:

- Onset within 1 week of known ARDS insult (most cases occur within 72 hours)
- Bilateral opacities on chest imaging consistent with pulmonary edema
- Respiratory failure not related to cardiac failure or volume overload
- Arterial PO_2/FIO_2 <300 on at least 5 cm H_2O PEEP from noninvasive or invasive mechanical ventilator

Once criteria for diagnosis are met, severity of ARDS is based on the following criteria:

- Mild = Arterial PO_2/FIO_2 >200 to <300
- Moderate = Arterial PO_2/FIO_2 100 to 200
- Severe = Arterial PO_2/FIO_2 <100

ARDS management:

- PEEP

  + low tidal volume (~6 mL/kg of pred. body wt.)

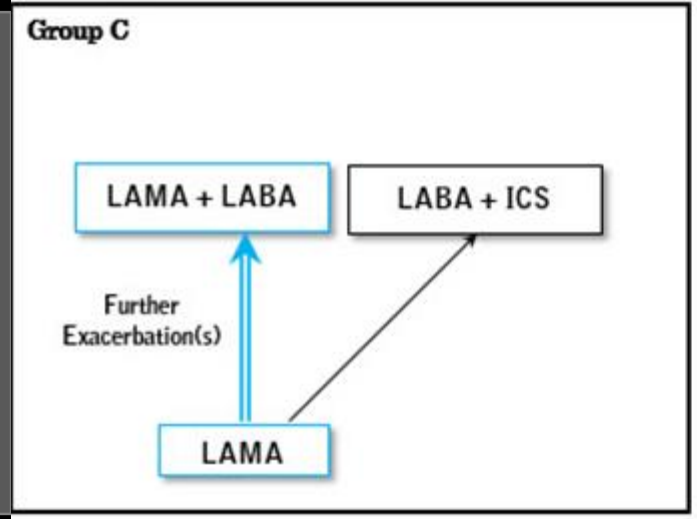
  + maintenance of the lowest possible plateau pressure.

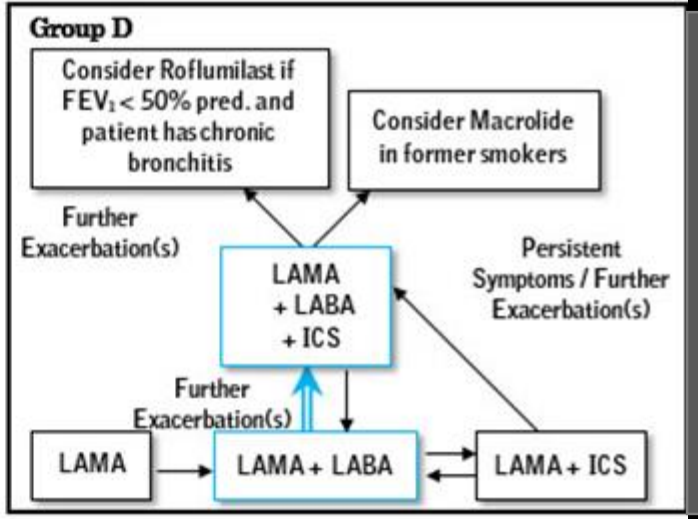
- **Early prone positioning** for at least 12 hours a day should be considered **standard Mx** for patients with **severe ARDS**, not a form of “rescue” or “salvage” therapy, due to demonstrated **mortality benefit.**

Question 57. (Pulmonary #26)

B; Inhaled glucocorticoid and long-acting B2-agonist

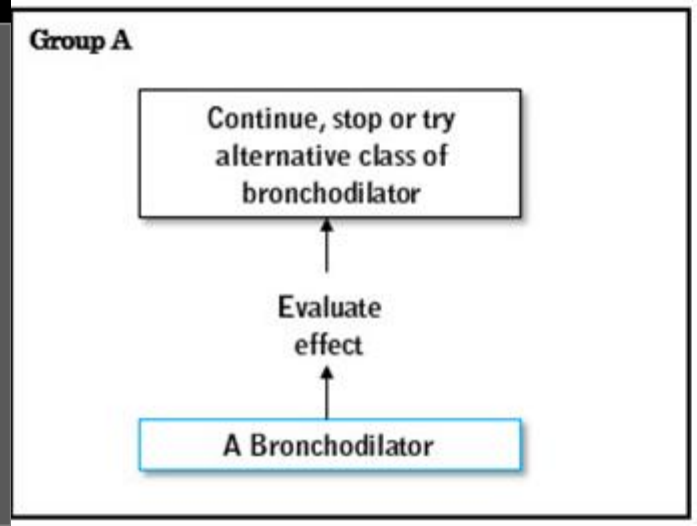
GOLD 3&4
FEV1 <50%

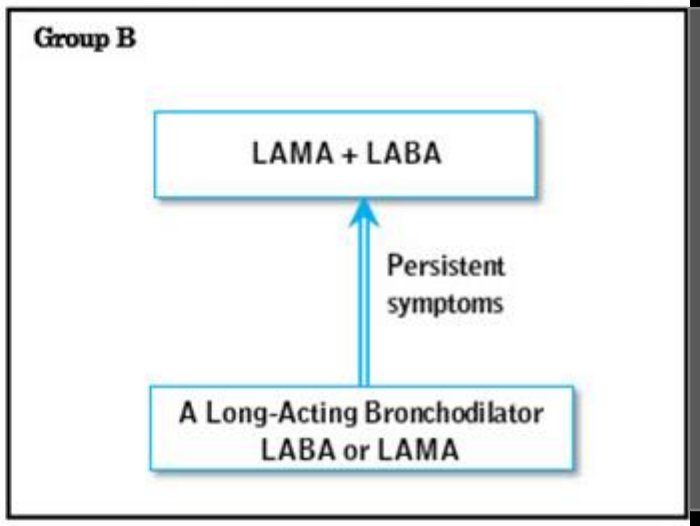




Exac.
>=2/yr

GOLD 1&2
FEV1 >50%





Exac.
0-1/yr

mMRC 0-1
CAT <10

mMRC >= 2
CAT >10

mMRC 1	SOB when hurrying on level ground or walking up a slight hill.
mMRC 2	On level ground, I walk slower than other people my age because of breathlessness, or I have to stop for breath when walking at my own pace.

ICS increase the risk of developing pneumonia in COPD.

Asthma-COPD overlap
syndrome should not be given LABA w/o concurrent ICS because of increased mortality in asthma Rxed w LABA monotherapy.

Lung volume reduction:
improves quality of life and survival for severe COPD (FEV1>20%) with upper-lobe predominant emphysema and **sig. exercise limitations**.

Question 58. (Endo #25)

A; Empagliflozin

Recommendations from American Diabetes Association - 2018

A1c Target	Patient group
6.0-6.5%	Pregnancy
<7%	Early in disease course, Few comorbidities
<7.5%	**Older** adults, **Few comorbidities** Extended life expectancy and No impairment of cognition or function
<8%	advanced **macro or microvascular complications** Longer duration of difficult to control DM Frequent hypoglycemia
<8.5%	Very complex/poor health, Limited life expectancy **end-stage disease** Long-term care placement Mod-to-severe impairment in cognition
When A1c is not at goal despite meeting preprandial glucose goals, the **postprandial** glucose values should be targeted.	
A1c monitoring: **Q3M** as changes to therapies occur, then **Q6M** once targets are achieved.	

	Effect on weight	Definitive outcome	Contraindications
Insulin	↑	Decrease in microvascular events	
Metformin	↔	**Decrease in CVD events**	discontinue if the eGFR < 30 Contraindicated with progressive liver, kidney, or cardiac failure.
GLP-1 receptor agonists	↓	**Decrease in CVD events** and mortality with liraglutide	concerns for **pancreatitis** and medullary thyroid carcinoma exacerbates gastroparesis
SGLT2 inhibitors	↓	**Decrease in CVD events** and mortality with empagliflozin Decrease in CVD events with canagliflozin	increases the risk of genital mycotic infections
DPP-4 inhibitors	↔	Increased heart failure hospitalizations with saxagliptin	
Sulfonylureas	↑	Decrease in microvascular events possible increase in CVD events	

Question 59. (ID #45)

D; Switch piperacillin-tazobactam to meropenum

Treating ESBL

- ESBL-producing gram-negative organisms are capable of **hydrolyzing higher generation cephalosporins** that have an oxyimino side chain, including cefotaxime, ceftazidime, ceftriaxone, and cefepime.

- Cefepime should not be used**,** even if an ESBL-producing organism appears to be susceptible on laboratory testing.

- ESBL-producing gram-negative organisms may appear susceptible to **piperacillin-tazobactam**; however, susceptibility breakpoints do not always reflect clinical success.

- The **carbapenems** are the preferred class of agents for ESBL.

Question 60. (ID #104)

C; Oral doxycycline

Purulent SSTI : Furuncle, carbuncle, or abscess

	Clinically	**Rx**
Mild		I &D
Moderate	systemic signs of infection	I&D plus empiric TMP-SMX or doxycycline pending c/s
Severe	immunocomp. Hypotension + SIRS	I&D plus empiric vancomycin, daptomycin, linezolid, telavancin, or ceftaroline pending c/s

If MRSA is the cause of multiple recurrences of purulent skin infection, **decolonization** with topical intranasal mupirocin and chlorhexidine washes should be considered.