QUICK REVIEW/PEARL SHEET

- Psoriasis may be exacerbated by streptococcal infection, skin injury (sunburn or drug reaction) or HIV disease.

- Think of the 5 P's for the diagnosis of lichen planus - pruritic, purple, polygonal, planar, papules.

- Porphyria cutanea tarda is associated with heavy alcohol consumption, hepatitis C, and iron overload (especially hepatitis C- 70% of PCT patients have hep C) Clinical features include facial hirsutism, milia, erosions, scars and tense bullae (frequently on hands).

- Pemphigus vulgaris often involves the mouth (50%). Diagnosed by immunofluorescent studies of perilesional skin. High fatality rate if not treated.

- Erythema nodosum: Think Inflammatory bowel disease, sarcoid, strep infection , or drugs (OCP most common)

- Erythema Multiforme: "Target lesions" : Think HSV, drugs (PCN, Sulfa and Phenytoin most common), or Mycoplasma. For patients with recurrent erythema multiforme, a trial of acyclovir therapy is appropriate

- Acanthosis nigricans is most often seen in association with obesity and diabetes with insulin resistance. It is occasionally seen associated with malignancy (60% gastric).

- In a younger patient with severe seborrheic dermatitis think HIV, an older person with severe Seb Derm think Parkinson's disease

- Treat herpes zoster with 7 days of Valacyclovir or famciclovir. Acyclovir, although much less expensve, must be given 5 times a day to be effective which makes it much harder to use (and a less attractive option). Tricyclic antidepressants and gabapentin are the best options for post herpetic neuralgia treatment. Remember to avoid Tricyclics in men with BPH and patients with CAD.

- Tinea versicolor occurs on the chest/back/lower neck/ upper arms. It is hypopigmented when exposed to sun. Treatment is 400 mg of ketoconazole orally X1 (no ppi's as acid stomach needed), and then work up a sweat. Also can use selenium containing shampoos

- Patients with alcoholic hepatitis usually have AST levels less than 300 with trivial elevations of ALT with an AST/ALT ratio usually >3.

- AST/ALT ratio almost always under 1 in viral hepatitis, until cirrhosis occurs

- The initial diagnostic test for hepatitis C is measurement of anti-HCV, if positive, check a HCV RNA to determine the presence of active infection

- Interferon alfa should not be used in patients with active autoimmune disorders, severe cytopenias, decompensated cirrhosis or major depression
- Hemochromatosis and alcohol liver disease share several overlapping features – hepatomegaly, glucose intolerance, testicular atrophy and cardiomyopathy.
- Nonalcoholic steatohepatitis can mimic alcoholic hepatitis. It usually occurs in middle-aged women with obesity, diabetes and hypertension. Clinical features are hepatomegaly and elevated transaminases (usually AST > ALT).
- Causes of marked transaminase elevation (with transaminases > 2000): Drugs (Acetominophen) most common, Viral hepatitis(A and B), Ischemia. Toxin (mushrooms)
- Statins are safe to give to people with liver disease, NSAIDS are not
- Autoimmune hepatitis usually occurs in women and serologically these patients have antinuclear and anti-smooth muscle antibodies as well as hyperglobulinemia.
- Wilson's disease is a rare autosomal recessive disorder. Clinical features include hepatitis (both fulminant and chronic), neurologic symptoms, hemolytic anemia and Kayser – Fleischer rings around the iris.
- Several drugs can cause prominent drug induced cholestasis – chlorpromazine, gold, chlorpropamide, oral contraceptive pills, erythromycin and amoxicillin/clavulanate.
- PSC usually occurs in middle age males with a history of ulcerative colitis. Past colectomy does not protect the patient from developing this.
- In patients with acute CBD obstruction due to gallstones, ALT/AST rise almost immediately, and can climb over 1000
- Sclerotherapy is effective in controlling acute variceal bleeding (75-90%). Serious complications limit its usefulness. Variceal band ligation is as effective but with less complications. B-blockers are effective for prophylaxis of variceal bleeding
- Spontaneous bacterial peritonitis is usually caused by gram negative rods and should be treated with a five day course of a 3rd generation cephalosporin. Give albumin if Cr >1, Bili >4
- Do not give B blockers to liver patients with refractory ascites
- Crohn disease most commonly involves the terminal ileum and cecal region (45%).
- Extra intestinal manifestations include uveitis, spondyloarthropathy, erythema nodosum and pyoderma gangrenosum
- Bacterial overgrowth in the small bowel can cause malabsorptive diarrhea. Risk factors for bacterial overgrowth are scleroderma, diabetes, high dose PPI's, postoperative (Billroth 2), radiation enteropathy

- Whipple's disease (etiologic agent *Tropheryma whipplei)* can cause malabsorptive diarrhea in addition to many other features including: arthritis, fever, lymphadenopathy, clubbing, CNS involvement and uveitis.

- Celiac sprue is associated with dermatitis herpetiformis, increased risk for small bowel lymphoma, selective IgA deficiency and occasionally is the cause of isolated ALT elevation.

- Osmotic diarrheas have high stool osmolol gaps (>125), secretry diarrheas have low osmolol gaps (<50)

- Serologic tests for IgA endomysial antibody and IgA tissue trans glutamine antibody can help in the diagnosis of celiac sprue. Patients who are on a gluten free diet at the time of testing may have false negative results

- Chronic watery diarrhea in a middle age woman without weight loss or pain think microscopic (collaginous) colitis. Bismuth or budesonide are used for microscopic colitis.

- Diarrhea due to pancreatic insufficiency has a greater amount of stool fat than other malabsorptive diarrheas and normal small bowel absorption tests (D- Xylose and Hydrogen breath tests)

- A trial of cholestyramine is appropriate for patients with post cholecystectomy diarrhea

- Think fecal impaction in elderly patients with small volume watery diarrhea and fecal incontinence.

- Acute pancreatitis is caused by alcohol consumption or gallstones 60% of the time.

- Colitis from campylobacter and occasionally amebiasis can mimic the symptoms and appearance of ulcerative colitis.

- Pseudocysts develop in 20% of patients with severe acute pancreatitis. Pseudocysts larger than 6 cm are at risk for perforation, infection and hemorrhage. Surgical drainage should be performed if they do not resolve.

- In evaluating suspected chronic pancreatitis, the initial diagnostic test should be plain abdominal x-ray. Presence of diffuse calcifications in the pancreas is diagnostic (~40%). The most sensitive imaging test is ERCP.

- Helicobacter Pylori present in 80-95% of duodenal ulcers and 60-90% of gastric ulcers

- Patients with ALS present with asymmetric weakness with a bulbar or limb presentation. No sensory, visual or bowel or bladder abnormalities

- Lambert-Eaton syndrome involves progressive progressive proximal weakness and diminished DTR's that improve with repetitive movement (MG usually worsens with repetitive movement). Lambert-Eaton syndrome is caused by antibodies to voltage- gated calcium channels. More than 50% have an underlying malignancy (small cell cancer most common)

- Campylobacter infection can trigger Guillain-Barre Syndrome
- Patient with a DVT plus stroke think patent Foramen Ovale
- Aspirin plus clopidogrel offers no benefit over aspirin alone for stroke prevention, but does increase bleeding risk
- Carotid endarterectomy recommended for symptomatic patients with > 70% stenosis, asymptomatic patients with > 80% stenosis who have a low surgical risk and an otherwise good 5 year survival
- Carotid endarterectomy should be done as soon as possible after a TIA (If the patient is an appropriate candidate
- Statins decrease stroke risk about 20-30%
- Essential tremor is usually a bilateral postural tremor, worse with activity- may improve with alcohol. Treat with primidone or propranolol.
- 90% of patients with recurrent "sinus headaches" actually have migraine, treat with triptans.
- The presence of hypokalemia in a hypertensive patient who is not on diuretics makes the likelihood of a secondary cause much greater. Alcoholism, hyperaldosteronism and renal artery stenosis all can lead to hypokalemia.
- The physical finding of orthostatic hypotension in a hypertensive patient is seen in patients with pheochromocytoma. Think of the H's for symptoms of pheochromocytoma- **Hypertensive, Hyperhydrosis, Hyperglycemia, Headache, Hypotension (orthostatic)**
- Evaluate patients with spontaneous hypokalemia and hypertension for hyperaldosteronism.
- Patients with nephrotic syndrome are at increased risk for infections due to urinary loss of IgG and complement. They are also at risk for thrombosis due to urinary loss of anti-thrombin III and an increase in coagulation factors.
- Features of renal vein thrombosis include flank pain, hematuria and enlarged kidney by U/S.
- Minimal change disease is more common in children but when seen in adults it is associated with atopy/allergy, NSAID use, or with Hodgkin's disease.
- IgA nephropathy is the most common cause of nephritis syndrome worldwide. This usually presents as micro/macroscopic hematuria often within 48 hours of a URI.
- Separating strep glomerulonephritis from IgA nephropathy by history: IgA nephropathy often has current episodes of hematuria following URI, wheras post strep is not usually recurrent
- Time course for IgA hematuria is 2-3 days post URI, for post strep ,2-4 weeks

- Goodpasture's disease usually presents in patients with a typical epidemiology – young male smokers with a history of hydrocarbon exposure. Hemoptysis often follows a URI, usually diffuse infiltrates on Xray
- Do not give Gadillinium to patients with CKD because of the risk of nephrogenic fibrosing dermopathy.
- Atheroembolic renal disease occurs after angiography, aortic surgery and can occur after institution of anticoagulation. Clinical features include livedo reticularis, purple toes and progressive renal dysfunction. Peripheral eosinophilia is far more common than eosinophiluria.
- ARF with thrombocytopenia- think microscopic angiopathy (look for hemolysis, schistocytes)
- Which patients with thrombotic microangiopathy do you definitely plasmaphorese? TTP, antiphospholipid antibody syndrome, complement disorders
- Drug induced acute interstitial nephritis is most commonly due to B-lactams (especially penicillins) and NSAIDS. Dilantin and allopurinol also important causes.
- Clues to renal failure due to ethylene glycol include oxalate crystals in the urine and a marked anion gap acidosis with an osmolar gap.
- MCV elevation in non anemic patients is most likely due to alcohol.

QUICK REVIEW/PEARL SHEET

- Reflux esophagitis should be considered in patients with refractory asthma.
- GERD induced laryngitis requires higher dose of PPI's (often BID dosing), longer courses
- Barium x-ray in patients with achalasia shows bird beak distal esophagus with dilated esophageal body.
- Key clues of Zenker's diverticulum are cervical dysphagia, halitosis and aspiration pneumonia.
- Intermittent non-progressive solid dysphagia is suggestive of a Schatzki's Ring.
- Pill induced esophagitis is most commonly caused by: Tetracycline/doxycycline followed by KCL, NSAIDS, iron, clindamycin or Alendronate.
- Severe GERD in a younger woman, think about the possibility of Bulemia
- Parvovirus B19 infection in adults can cause a rheumatoid arthritis like syndrome with polyarthritis. Transient aplastic crisis occurs in patients with chronic hemolytic anemias (especially sickle cell disease). Patients with immunosuppression (especially HIV) can develop chronic anemia.
- Treatment with immunoglobulin is used for chronic anemia due to parvovirus in immunocompromised patients.
- The major reservoirs for rabies in the United States are bats, skunks, raccoons, foxes and coyotes.
- Think of Hantavirus infection in patients with fevers, myalgias, noncardiac pulmonary edema, **increased hematocrit**, and leukocytes.
- Babesiosis is most commonly seen in the Northeastern U.S. (for board purposes think **Martha's Vineyard**) but has been described elsewhere. Disease is more severe in splenectomized patients.
- Ehrlichiosis is a rickettsial infection most common in South Central and South Atlantic states. Clinical features include fevers, headache, myalgias but rarely (<20%) rash. "Rocky mountain spotless fever." As with all rickettsial infections expect to see thrombocytopenia, lymphopenia and increased LFT's.
- The classic finding of Lyme disease is erythema migrans, a rash that occurs 7-10 days after the tick bite (occurs in 60-80% of patients). It is an erythematous, annular lesion, usually with central clearing and is large - over 5 cm (average 15 cm).
- Think Lyme disease when you see bilateral 7^{th} nerve palsies (sarcoid is another disease that can do this).

- Third generation cephalosporins are particularly effective and indicated for treatment of meningitis (except cefoperazone), gonorrhea (ceftriaxone/cefixime) and nosocomial infections.

- Third generation cephalosporins do not cover enterococcus.

- Appropriate therapy for a cat or dog bite: Amoxicillin + Clavulanate . PCN allergic = Clindamycin + fluroquinolone

- "Red man" syndrome is a side effect of infusion of vancomycin at too fast a rate. It consists of itching and rash on face, neck and trunk. It is due to histamine release

- Patients with recurrent erythema multiforme should be evaluated for HSV infection. Consider a trial of acyclovir.

- Cellulitis with bullae in a patient with liver disease think Vibrio vulnificus.

Turtle and reptile exposure is linked to Salmonella infections

- Patients with hereditary angioedema present with recurrent episodes of swelling usually beginning in childhood and frequently after **trauma**. Episodes of abdominal pain due to edema are common. These patients do **not** have urticaria. A good screening test for this is C_4 levels which are always low.

- Acquired C_1 esterase deficiency is seen in patients with B-cell proliferative disorders, connective tissue disorders and monoclonal gammopathies.

- Pseudoxanthoma elasticum causes "chicken skin" around neck, axilla. Angioid streaks on funduscopic exam. Clinical features include recurrent GI bleeding.

- Thyroid hormone can be bound by iron, calcium, cholestyramine, antacids and sucralfate. Estrogen increases TBG, and hypothyroid women may need increased doses of T4

- TMP/Sulfa decreases Warfarin's binding leading to overanticoagulation.

- Natural products which interact with warfarin generally begin with the letter G (ginko, ginger, glucosamine/Chondroitin and garlic increase the bleeding risk, ginseng can decrease anticoagulation).

- Remember drugs that can cause hyperkalemia – ACE inhibitors, ARB's, TMP/Sulfa, K+ sparing diuretics and NSAIDS.

- The risk of rhabdomyolysis with statin drugs increases greatly when the drug is combined with erythromycin or cyclosporin. Combination with gemfibrozil can also increase the risk (risk is highest if patient is on steroids). Risk is 10X higher for gemfibrozil over fenofibrate

- Quinolones can cause tendon rupture and CNS symptoms including confusion and hallucinations (usually seen in the elderly). QT prolongation is most severe with moxifloxacin . Risk of tendon rupture highest if patient is elderly and on steroids

- Drug causes of acidosis include metformin (gap) only in patients with low GFR's (<30) and topiramate (nongap).

- Patients with acute HIV infection share many symptoms with mononucleosis. Differences between the illnesses: rash common with acute HIV (70%), oral ulcers occur with acute HIV (30%), diarrhea with acute HIV (30%).

- Bacillary angiomatosis is due to Bartonella sp usually acquired from cats. Treat with erythromycin/azithromycin.

- An HIV-infected patient with oral candidiasis complaining of dysphagia should be treated empirically for esophageal candidiasis (fluconazole). The positive predictive value of these symptoms is ~ 100%.

- USPSTF recommends HIV screening for everyone between ages 15-65

- Patients with HIV who develop a spontaneous pneumothorax probably have an infection with pneumoocystis (95% chance).

- Clinical features of tuberculosis in patients with HIV differ by CD_4 count. In patients with CD_4 counts >300 typical symptoms occur (cough, sputum, fever, upper lobe infiltrates, cavities). When the CD_4 count is <200 atypical TB presentations predominate (hilar adenopathy, no sputum, lower lobe infiltrates, extrapulmonary disease).

PPD induration of 5mm is considered positive in a patient with HIV

- Antiretroviral therapy should be started early in the course of HIV if the patient is committed to taking the regimens. Patient compliance is the single most important issue in starting therapy.

- Important disease associations with HIV are EBV = Oral hairy leukoplakia, JC virus= PML, HHV 8= Kaposi's Sarcoma, and Bartonella sp= Bacillary angiomatosis

- Abacavir can cause a life threatening hypersensitivity syndrome on rechallenge. Abacavir allergy is associated with the presence of HLA-B*57:01

- In patients with low CD_4 counts (< 100) recently started on antiretroviral therapy who develop fever and lymphadenopathy the cause is usually MAC infection.

- D4T, DDI, and DDC can all cause peripheral neuropathy and pancreatitis.
- Indinavir and atazanavir can cause unconjugated hyperbilirubinemia

- Tenofovir can cause renal insufficiency

- The following vaccines are contraindicated in HIV patients: Live attenuated influenza vaccine, Varicella vaccine (Zostavax) if CD4 count is <200, Smallpox vaccine, live oral polio vaccine, Measles vaccine if CD4 <200, yellow fever vaccine, Typhoid Ty21a. Shingrex is ok for patients with HIV , regardless of CD4 count

- Pseudomonas aeruginosa is an important cause of **community-acquired pneumonia** in patients with HIV with CD_4 counts <100.
- Lactic acidosis can occur with nucleoside reverse transcriptase inhibitors. Most will have hepatomegaly and abnormal LFT's as well. D4T the most associated

- Risk factors for disseminated candidal infection include - hyperalimentation, central venous catheters, diabetes, broad-spectrum antibiotics and steroid therapy.

- Clinical features of disseminated candidiasis - fever, endophthalmitis, and pulmonary infiltrates. Hepatosplenic candidiasis most common in transplant of leukemic patients - fever, abdominal pain, hepatosplenomegaly, increases alkaline phosphate.

- Risk factors for invasive aspergillosis - prolonged granulocytopenia, corticosteroid therapy, and cytotoxic chemotherapy. Interestingly <u>not</u> common in AIDS patients.

- Rhinocerebral mucormycosis usually seen in patients with diabetic ketoacidosis or leukemics. High mortality rate due to complication of cavernous sinus thrombosis and cerebral infarction.

- Coccidiomycosis - Two presentations to know 1) symptomatic pulmonary infection "valley fever" - flu like illness, hilar adenopathy or effusion on x-ray, mild eosinophilia. May have rash and erythema nodosum; 2) disseminated disease - more common in Filipino's/Asians/Blacks and patients with AIDS. Lesions can occur in bone, skin, meninges, and joints.

- Leishmaniasis - epidemiology especially Latin America, Mediterranean littoral, middle east. Cutaneous and visceral disease. Key features of visceral disease - hepatosplenomegaly, generalized lymphadenopathy, pancytopenia, fever, cachexia (resembles lymphoma).

- In patients with virulent E. histolytica infections almost all have a positive serology. In a patient with a liver abscess and suspected E. histolytica serology usually needed to confirm diagnosis.

- Trichinosis - Clinical features - severe muscle pain, periorbital and facial edema, subconjunctival and splinter hemorrhages, eosinophilia.

- Women with simple cystitis should not have a urine culture done.

- First line therapy for cystitis are nitrofurantoin , trimethoprim sulfa or Fosfomycin (rarely ever used)- NOT quinolones

- E. Coli is developing increasing resistance to TMP/Sulfa (often >20%) and quinolones

- Key features of disseminated gonococcal infection include tenosynovitis, asymmetric arthritis and a few skin lesions on hands, feet, and wrist ankles.

- Increased susceptibility to gonococcal and meningococcal bacteremia may be due to homozygous deficiency to complement components C5, C6, C7 or C8. Screen patients for these defects with a total hemolytic complement (CH50).

- The most common cause for genital ulcers in the U.S. is HSV2

- Chancroid causes painful genital ulcers with irregular borders. Endemic areas include SE Asia and Africa.

QUICK REVIEW/PEARL SHEET

- High risk surgeries include emergency surgery, aortic and peripheral vascular and prolonged surgeries with lots of blood loss.

- Major clinical predictors for cardiac death or MI with surgery are unstable coronary syndromes, decompensated CHF, significant arrhythmias and severe valvular disease.

- Patients with step 2 asthma should be on a low dose inhaled steroid and prn short acting B agonist (**Know the asthma guidelines, lots of questions on this)**

- Pearls about secondary rhinitis – conditions that cause nasal congestion – hypothyroidism, pregnancy, Wegener's granulomatosis, and medication induced (topical nasal decongestant over use, ACE inhibitors, alpha blockers).

- Patients with moderate persistent asthma (daily symptoms) should be on inhaled steroids (moderate to high dose).

- When a patient has intraoperative anaphylaxis suspect **latex allergy**, preoperative **antibiotics**, induction agents (especially thiopental), **opiates**.

- ACE inhibitors have two important hypersensitivity reactions, a) cough (20-30%) which may occur up to a year after starting med. It is associated with bronchial hyperactivity to methacholine; b) angioedema – (.1 - .2%) involves face especially the lips, and tongue which can lead to fatal airway obstructions.
- Aztreonam does not have cross reactivity in regards to allergic reactions with beta lactams with the possible exception of Ceftazidime, which shares an identical side chain.

- Aspirin sensitivity occurs in 8-19% of adult asthma patients. The classic triad of aspirin allergy is a) asthma; b) nasal polyps; c) sinusitis.

- A normal $P0_2$ does not rule out pulmonary embolism. A normal $PC0_2$ and a normal A-a gradient make PE unlikely.

- A normal perfusion scan (V/Q scan with normal perfusion) make PE extremely unlikely (~1%)

- D Dimer testing is useful in patients with low or intermediate clinical probability of PE. The negative predictive value of a normal D dimer is very good if the pretest probability is low

- CT angiography has a good sensitivity and specificity for diagnosis of PE. Also has a good negative predictive value. Especially good in patients who have known lung disease (COPD/Hx lung surgery)

- The negative predictive value of a normal D dimer level is close to 100% when combined with a nondiagnostic V/Q scan or a normal lower extremity ultrasound in a patient with a low clinical probability of PE.

- Indications for inferior vena cava barrier (Greenfield filter): 1) patient with PE or DVT and anticoagulation is contraindicated or 2) patient has suffered recurrent DVT/PE despite appropriate anticoagulation or 3) massive life threatening PE.
- Patients with tamponade have equalization of diastolic pressures.

PA catheters are rarely indicated- usually the wrong choice on the boards

Ventilator management for ARDS- low tidal volumes and prone positioning (16 hrs/day)

Do not do tight glucose control in the ICU as it increases mortality

- Legionella - clinical features abrupt onset of high fever, myalgias, headache - initially non productive cough with purulent/sometimes bloody sputum developing later. Hyponatremia, leukocytosis common. Diagnosis - urinary antigen or DFA of sputum/throat swab.

- Psittacosis is spread from parrots, parakeets, lorries, pigeons and turkeys

- Mycoplasma pneumonia may be associated with hemolytic anemia, erythema multiforme , bullous myringitis

- Increased TLC indicates hyperinflation, increased RV indicates air trapping

- Neuromuscular disease on PFTs: Restrictive pattern on spirometry and lung volumes with normal DLCO and reduced maximum inspiratory and expiratory pressures

- Chronic eosinophilic pneumonia usually has bilateral peripheral infiltrates.
- Do not prescribe 80 mg dose of simvastatin as a new prescription- recognize the amiodarone/verapamil/diltiazem/grapefruit juice interactions
- Do not give niacin (recent FDA recommendation)
- Think of sleep apnea as a common cause of secondary hypertension
- For resistant hypertension, give spironolactone. If patient has CKD thiazide diuretics don't work well, but loop diuretics are effective

- Clinical features of 1^{o} adrenal insufficiency: weakness/fatigue, weight loss, anorexia, hyperpigmentation, hypotension and GI symptoms. Abnormal labs: hyponatremia (88%), hyperkalemia (64%), eosinophilia, hypoglycemia and hypercalcemia.

- Differences in clinical presentation between 2^{o} and 1^{o} adrenal insufficiency: hyperpigmentation absent, hyperkalemia not present, hypoglycemia is more prominent (due to coexistent growth hormone deficiency).

- Diagnosis of adrenal insufficiency: acute insufficiency suspected: During stress cortisol should be > 20, if less adrenal insufficiency likely. Chronic: synthetic ACTH given (Cortrosyn) with blood samples for cortisol at 0, 30, 60 minutes.

- Hyporeninemic hypoaldosteronism most commonly seen with diabetes. Typical features are hyperkalemia and hyperchloremic metabolic acidosis (type IV RTA).

- Cushing's disease - pituitary over secretion of ACTH. Clinical features - facial plethora, striae, easy bruisability, weakness, osteopenia (80%), glucose intolerance, centralized obesity (85%), neuropsychiatric effects (85%).

- Diagnosis of Cushing's syndrome: 24 hour urinary free cortisol has lower false positive rate than overnight dexamethasone suppression test. If an equivocal 24-hour urinary free cortisol or overnight dexamethasone suppression test, then perform standard low - dose dexamethasone suppression test.

- Differentiating adrenal versus pituitary Cushing's: standard high dose dexamethasone suppression test will suppress patients with pituitary Cushing's to 50% of pre-test values. Adrenal tumors fail to suppress.

- Clinical importance of hyperlipidemia - <u>Primary prevention</u> - In men without known CAD lipid lowering with HMG - C0A reductase inhibitor caused a 30% decrease in coronary events over 5 years. <u>Secondary prevention</u> - Scandinavian simvastatin survival study showed decrease in coronary events and mortality in hyperlipidemic patients with CAD. Lipid lowering with statins has shown decreased morbidity and mortality in patients with CAD and "normal" cholesterol.

- Secondary causes of hyperlipidemia to be aware of include **diabetes** (increased triglycerides), **hypothyroidism** (increased triglycerides and LDL), **drugs** (Thiazides/B blockers), and **nephrotic** syndrome.

Liraglutide and SGLT2 inhibitors reduce CV mortality

Toxicities of SGLT2 inhibitors include ketoacidosis, increased amputation risk, and Fornier's gangrene

- Oral sulfonylureas, especially glyburide (longer ½ life , renaly excreted) can cause severe hypoglycemia, with stroke like presentations in the elderly. The hypoglycemia can last for several days. Giving a sulfonylurea will be the wrong answer on the boards
- Causes for a rising TSH in hypothyroid patients previously well managed on levothyroxine: Addition of iron, calcium, or a PPI (all effect absorption). Estrogen increases binding with albumin, cholestyramine and sucaralfate bind the levothyroxine and decrease absorption. Always consider that the patient has developed celiac disease- decreases levothyroxine absorption and is more common in patients with hypothyroidism

- In elderly patients with subclinical hyperthyroidism, is is appropriate to follow with serial thyroid testing if the TSH is between .1 and .4

QUICK REVIEW/PEARL SHEET

- Causes of Vitamin K deficiency - malabsorption, malnutrition, anticoagulants, cephalosporins (cefoperazone, cefotetan).

- Most common hereditary cause of unexplained venous thrombosis (20-60%) is APC (activated protein C) resistance (factor V mutation). This is especially common in women who develop clotting on OCP's.

- Antiphospholipid antibody syndrome acquired with SLE, some drugs, HIV disease or idiopathic. Venous or arterial clotting can occur as well as recurrent fetal loss. **Pearl - PTT will be elevated in most patients and does not correct with a 1:1 mix.**

- A bone marrow exam is not indicated as part of the initial evaluation of suspected ITP. Obtain a complete CBC with smear eval, HIV test, ANA, TFT's, basic metabolic panel, H. Pylori.

- Recommendations for treatment of breast cancer **Premenopausal** women:
  --Tumors > 1 cm with or without lymph node positive receive chemotherapy and Adjuvant Rx with Tamoxifen if ER +.
  --Her2+ add Trastuzumab.

- Recommendations for treatment of breast cancer **Postmenopausal** women:
  --Tumors ≥ 1 cm with ***or without*** lymph nodes + receive chemotherapy and ER + receive Aromatase Inhibitor (AI). If not able to tolerate AI or have osteopenia/osteoporosis, receive Tamoxifen.
  --Her2^{+} add Trastuzumab.

**Breast cancer approved Immunotherapy agents include:
--Neratinib for early stage HER2+ after ≥1 yr post-surgery trastuzumab.
--Pertuzumab for metastatic breast CA (dual HER2 Rx, in combination with trastuzumab and chemo)
-- (2022) fam-trastuzumab deruxtecan-nxki approved for unresectable or metastatic breast CA.

**Inflammatory breast cancer: systemic therapy before surgery improves survival.

- Risk for developing lung cancer: smoking, asbestos (asbestos + smoking increase risk > 50 times)

- Small cell lung cancer - treatment
  - limited stage disease = chemo + radiation
  - advanced disease = chemo

Checkpoint inhibitors Immune mediated- serious toxicity should be treated with stopping drug and giving corticosteroids

Younger patients with tonsillar/pharyngeal cancer likely to have HPV as etiology

Lung cancer + hypercalcemia likely squamous cell (NOT small cell)

- Colorectal cancer treatment:
  Stage A + stage B surgical resection
  Stage C (lymph nodes positive): resection + 5 FU + leucovorin x 6 months.
  Metastatic: 5Fu + leucovorin or oral capecitabine (better tolerated than 5Fu/leucovorin)

- 5 year survival for anal cancer is best with chemotherapy followed by radiation therapy

- Staging of testicular cancers should include: alpha - fetoprotein, beta HCG, Chest x-ray, CT of abdomen and pelvis.

- Treatment of testicular cancer
  Localized to testis → orchiectomy and retroperitoneal LND
  Bulky lymph node involvement or mets → Cisplatinum based combination chemotherapy.

- Risk factors for ovarian cancer: genetic, asbestos, talc, fertility agents.

- Symptoms of ovarian cancer (usually advanced disease): abdominal pain (57%), abdominal distention (51%), vaginal bleeding (25%).

- Carcinoma unknown primary workup: review of path specimen and evaluate for treatable/curable malignancies (breast, germ cell tumors, prostate cancer).

- Paraneoplastic erythrocytosis seen with hypernephroma, hepatoma, cerebellar hemangioblastoma.

- Glomerulonephritis seen with carcinomas (colon/lung), minimal change disease - Hodgkin's disease.

- CLL associations/complications : Autoimmune hemolytic anemia, ITP, Infections (especially pneumonia with pneumococcus)

- Only treat CLL if severe "B" symptoms, obstructing nodes, severe anemia or thrombocytopenia

- CML look for Philadelphia chromosome (t(9;22) in the marrow or RT-PCR Bcr-Abl mRNA in the blood

- Gleevec (imatinib mysylate) inhibits Bcr-Abl tyrosine kinase activity. It can help control disease but does not cure it.

- AML look for Auer rods

- Myeloma pearls for boards: Rouleaux formation on the peripheral smear with RBC's, low anion gap, diffuse osteoporosis, lytic lesions on plain xrays with a normal bone scan.

- Hodgkin's disease pearls for the boards: eosinophilia, bone pain after drinking alcohol, minimal change disease, pruritus

- Sweets syndrome (acute febrile neutrophilic dermatosis) can be associated with acute nonlymphocytic leukemia (most common).

- Necrolytic migratory thrombophlebitis is seen with glucagonoma.

- Cancers that cause fever: hepatoma, hypernephroma and lymphoma.

- Adults can refuse care on a religious basis

- Order of decision making Durable power of attorney > Spouse > Parents > Children > Sibs

- HIPPA: Use and disclosure of patients medical information is allowed for treatment purpose

- Confidentiality is not absolute. If patient has a reportable disease or has threatened someone, that information must be shared.

- In aortic stenosis severe obstruction = valve area < 1 cm^2. Mortality is > 50% if symptomatic and untreated.

- Treatment options for severe mitral stenosis (symptomatic with valve area ≤ 1.0 cm^2) a) surgical commissurotomy; b) catheter balloon mitral commissurotomy or c) mitral valve replacement.

- The clinical sign with the worst prognosis for patients with aortic stenosis is congestive heart failure
- An important clinical trigger for symptoms with hypertrophic cardiomyopathy is volume depletion

- Clinical features of aortic insufficiency include wide pulse pressure, head nodding, bounding peripheral pulses, capillary pulsation (Quincke's pulse), and early high pitched diastolic murmur

- Recommendations for valve replacement in patients with AI: NYHA class 3 or 4 symptoms and EF > 50 **or** NYHA class 2 symptoms EF >50 but with LV dilation **or** CHA functional class 2 or greater angina **or Asymptomatic** or symptomatic patients with mild to moderate LV dysfunction at rest

- Clinical features of mitral stenosis: loud first heart sound, opening snap, rumbling diastolic murmur, presystolic murmur (absent if patient in a fib), and frequent atrial fibrillation.

- Hypertrophic cardiomyopathy high risk features: personal history of syncope, fit of sudden death, septum > 30 mm, age < 30.

- Appropriate treatment of PSVT in patient with WPW - vagal maneuvers/adenosine or verapamil.

- Appropriate treatment of atrial fibrillation in patient with WPW: unstable - cardioversion, stable – procainamide
- Rate control in patients with atrial fibrillation is best achieved with B blockers or calcium channel blockers (Diltiazem or Verapamil; CCB some impact on DOAC metabolism but not contraindication). Digoxin does not control rate well in exercising patient.

- Must anticoagulate for three weeks prior to cardioversion in prolonged atrial fibrillation (> 72 hours) or AF of uncertain duration and for four weeks afterward.

- Torsade de Pointe - arrhythmia due to QT prolongation often due to type I antiarrhythmic drugs . Other causes - hypokalemia, hypomagnesemia.

- Critical aortic stenosis and critical mitral stenosis are contraindications to elective surgery. Valve replacement should occur prior to any elective surgery.

Atrial tachycardia with 2:1 block is digoxin toxicity until proven otherwise

Treatment of AV nodal reentrant tachycardia- carotid massage, if ineffective give adenosine

When you see a narrow complex tachycardia at 140-160 think atrial flutter with 2:1 block

3rd degree heart block is slow and regular without dropped QRS's, Mobitz 1 and II are irregular

- The following are extreme risks for complications during non-cardiac surgery: MI within 3 months, uncontrolled CHF, significant mitral or aortic stenosis.

- Pearls on pregnancy and heart disease: If signs of MI think of coronary artery dissection. Drugs to avoid in pregnancy – Coumadin and ACEI.

- Results of ETT that suggest high probability of severe 3 vessel disease or left main disease: a) duration of exercise < 6 min.; b) exercise induced hypotension or failure to increase SBP to > 120 mm Hg; c) ST depression > 2 mm at less than 6 METS and present in > 5 leads; d) exercise induced ST elevation; e) symptomatic exercise induced ventricular arrhythmia.

- Add an imaging modality to the ETT if:
    a) Widespread ST depression ≥ 1 mm on resting ECG
        or
    b) ST changes due to digoxin, LBBB, LVH or WPW

- When to refer for angiography: LVEF <35%, high risk ETT score, multiple large ischemic zones on stress imaging, successful resuscitation from sudden cardiac death, sustained VT, significant angina despite medical therapy

- CABG improves prognosis compared to medical therapy in patients with chronic stable angina with:
    1) Left main coronary artery stenosis ≥ 50%
        or
    2) Three vessel CAD and LV dysfunction

- Drugs with proven survival benefit in the treatment of systolic heart failure are ACE inhibitors, B-blockers, sacubitril/valsartan, and spironolactone

- Drugs with proven survival benefit in patients with history of MI are statins, ASA, B blockers and ACEI

- Pearls on presentation of atrial septal defect: often presents between ages 20 – 40, symptoms: exercise intolerance, atrial arrhythmias. Exam: fixed split S_2 , on ECG: RAD.

- Best management of AF? For survival, no obligation to Cardiovert. If patients do not tolerate AF clinically, conversion is reasonable.

- Consider evaluating for sleep apnea in patients with new onset atrial fibrillation

QUICK REVIEW/PEARL SHEET

- The HLA B27 associated spondyloarthropathies are ankylosing spondylitis, Reiter's syndrome.
- Key clinical features of ankylosing spondylitis are back stiffness, sacroiliac pain and iritis (25%). Rarer manifestations include aortic insufficiency (10%), upper lobe pulmonary fibrosis.
- Spinal complications on ankylosing spondylitis: fractures due to an immobile spine, cauda equina syndrome, and spinal stenosis.
- Radiographic features of ankylosing spondylitis include sacroiliitis, "bamboo" spine and vertebral squaring.
- Psoriatic arthritis can cause an asymmetric oligoarthritis, sometimes causing swelling of the whole digit, causing a **sausage** digit.
- Arthritis mutilans can occur with psoriatic arthritis, usually in patients with severe psoriasis. Digits can be destroyed.
- Radiographic features of psoriatic arthritis include marginal erosions causing a "**pencil in cup**" deformity at the interphalangeal joints.
- Reactive arthritis may occur after dysentery or following chlamydial or other forms of NGU.
- Think of Reactive arthritis in young adults with seronegative asymmetric arthritis (also think of disseminated gonococcal infection in this group).
- Clinical features of Reactive arthritis include: peripheral arthritis affecting the lower extremities, swelling of the Achilles tendon, conjunctivitis/uveitis, urethritis, prostatitis, and two important skin lesions - keratodermia blennorrhagica (rash on soles/palms) and circinate balanitis (rash on penis).
- Risk factors for gout include medications (**diuretics, niacin**), alcohol use, exposure to lead, family history of gout. Gout is also very common in Filipino and Samoan Pacific Islanders.
- Most initial attacks of gout are monoarticular (85-90%) with 50% involving the first MTP joint.
- Urate gout attacks can be precipitated by trauma or surgery. Severe attacks of gout can be accompanied by fever.
- Most cases of calcium pyrophosphate deposition disease are idiopathic. Occasionally it can be associated with systemic disease, **hyperparathyroidism** and **hemochromatosis** are the two most important of these.

- The most common presenting symptoms of patients with SLE are joint complaints (56%) and skin problems (20%). Almost all patients (90%) will have joint involvement during the course of the disease.

- The use of ANA for diagnosis of SLE is very dependent on the clinical pretest probability of disease. A positive ANA in a patient with several clinical features suggesting SLE, example: (photosensitivity, arthritis and pleuritic pain) is a powerful diagnostic tool making the diagnosis of SLE very likely. If the patient has only arthralgias as a symptom and has a positive ANA it is still very unlikely for the patient to have SLE even with the positive ANA.

- A positive anti-DS DNA test is specific for SLE, but not too sensitive (only 50-60% of lupus patients have a positive anti-DS DNA).

- Anti-Sm antibody is highly specific for lupus but very insensitive (20-30%).

- Anti-CCP antibody is often positive early in RA before RF becomes positive.

- Subacute cutaneous lupus is associated with annular lesions with scale. Patients usually have anti-Ro antibody.

- Patients with lupus with CNS involvement often have antineuronal antibodies and anti-ribosomal P.

- Drug induced lupus - antihistone antibody present in > 90% of patients. Most common drugs procainamide and hydralazine.

- Patients with discoid lupus do not have involvement of other organs.

- Rheumatoid factor are IgM antibodies reactive with IgG. It is neither sensitive nor specific for RA. High titers of RF in RA patients is associated with vasculitis and a worse prognosis.
    - Anti CCP antibody is very specific for RA, often turning positive **before** RF

- **Felty's syndrome** is the combination of neutropenia, splenomegaly, rheumatoid factor and longstanding RA.

- **Caplan's syndrome** is presence of multiple pulmonary nodules in a patient with RA. Pleural effusions in patients with RA are associated with low glucose levels in pleural fluid.

- **Henoch-Schonlein** purpura usually occurs in the Spring, often after an URI. Clinical features: palpable purpura, arthritis and abdominal pain.

- **Cryoglobulinemia** (especially type II mixed) is strongly associated with hepatitis C. Clinical features - glomerulonephritis, vascular infarcts, palpable purpura (especially on legs).

- **Polyarteritis** nodosa is associated with hepatitis B (antigen positive) in about 20% of patients. Common clinical features: renal failure, livedo reticularis, mononeuritis multiplex, palpable purpura. This is a systemic disease and may involve CNS, GI tract and heart.

- **Granulomatosis with Polyangiitis (Wegener's granulomatosis)** - consider in patients with sinus disease, pulmonary infiltrates (especially if nodular), and renal involvement. This can cause saddle nose deformity as well. **c-ANCA** is sensitive and **specific** (99%) for this disease.

- Giant cell arteritis occurs in older individuals usually with northern European background. Many patients also have PMR. Typical features are - headache, weight loss and jaw claudication.

- Anti-SSA (anti-Ro) is associated with neonatal lupus, Sjogren's syndrome and subacute cutaneous lupus.

- Anticentromere antibody is seen in 80-90% of patients with CREST syndrome.

- The following drugs should absolutely be avoided during pregnancy: Isotretinoin (Accutane), ACE inhibitors, Benzodiazepines, Quinolones, Estrogens, Tetracycline and Coumadin.

- Asymptomatic bacteriuria of pregnancy should be treated. Increase of risk of pyelonephritis 20-30 times compared to non pregnant patients. Amoxicillin and cephalosporins are preferred agents.

- Treat hypertensions during pregnancy at DBP > 100 or if patient has diabetes or renal disease DBP > 90. Safe drugs – methyldopa, hydralazine, labetalol.

- Adults should receive Tetanus booster every 10 years or at least a booster at age 50 or after Pneumococcal 23 and 13 vaccines recommended for adults age 65 or greater. Annual influenza vaccine recommended for those > 65 years old, health care workers. Shingles vaccine should be given at age 60.

- Give Tdap to those who need a tetnus booster.

- You can stop obtaining pap smears in women > 65 who have had repeatedly normal paps previously, and in any woman who has had a hysterectomy for benign disease.

- Asplenic individuals should receive pneumococcal, H. influenza B + Meningococcal vaccines.

- Current recommendations for colon cancer screening are in adults > 50 annual fecal occult blood test with flex sig every 3-5 years, OR colonoscopy (if you do colonoscopy, do not do fecal occult blood testing)

- Panic disorder is frequently misdiagnosed on presentation (70% of patients have seen 10 or more physicians). The most effective treatment are SSRI's.

- Many diseases are associated with depression including: **Panic disorder, stroke, hypothyroidism, fibromyalgia, CFS, coronary artery disease and chronic steroid use.**

- Patients with atypical depression tend to have hypersomnia, weight gain and lots of physical symptoms.

- Major side effects of SSRI's include sexual side effects (delayed orgasm), and insomnia.

1. Weight gain is a common side effect of most antidepressants. It does not occur with bupropion (Wellbutrin) and Veralafaxine (Effexor). The SSRI most associated with weight gain is Paroxetine.

2. The newer antipsychotics (Olanzapine, Risperidone and Clozapine can cause increased insulin insensitivity and trigger DM

- Bulimia occurs primarily in young women (ages 15-25). Clinical features include**: Amenorrhea, parotid hypertrophy, reflux esophagitis, dental problems, Mallory-Weiss tears and Metabolic alkalosis**