Vasculitis and crystalline arthropathies – ABIM questions

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Question 1

• 72 y/o Caucasian male presents with c/o musculoskeletal pain symptoms; these began suddenly and he can recall to the day of onset. He aches in his shoulders and legs. He has 1.5 hrs of morning stiffness. He does not have a headache, but does have a low grade temp. He has lost 15 pounds in the last few weeks.

• Hb 10.9 (normocytic normochromic)  CRP 8.0
• WBC 7  ESR 110
• P/C 430  LFTs WNL  UA neg

What is your diagnosis?
1. PMR
2. Temporal arteritis
3. PMR/ temporal arteritis overlap
4. Seronegative RA of the elderly.
Question 2

A 46-year-old male presents with a 3-month history of fatigue, low-grade fever, weight loss, abdominal pain, and testicular tenderness. Exam reveals a week of right foot weakness to resisted dorsiflexion, with altered sensation and rash. Abdomen is mildly tender; left testicle is tender, indurated, and slightly enlarged.

Labs: Anemia of chronic disease; UA: Multiple RBCs, few WBCs; 1+ protein, no casts; ESR -120, Chest X-ray –normal, KUB –normal.

What is the single best diagnostic test?

1. Abdominal angiogram
2. Testicular biopsy
3. EMG/NCS
4. Renal biopsy
A 23-year-old woman is evaluated for a 3-week history of cough and purulent nasal secretions. She also has hypothyroidism. Family history is negative for autoimmune disorders. Her only medication is levothyroxine.

- Temp: 100.2, BP: 140/86, HR: 90, RR: 18
- Nasal turbinates are boggy with purulent, blood-streaked secretions. There are scattered expiratory rhonchi on auscultation.
   - Clinical exam reveals a leg rash.
   - Hematocrit: 32%, Leukocyte count: 12,000/microL
   - Platelet count 440,000/microL, Serum creatinine: normal
   - ANA: positive, p-ANCA: positive
   - anti-MPO: positive, UA: normal
- Sputum culture and TB skin test are normal, Gram stain is negative.
- CXR: nodular infiltrates, CT of the paranasal sinuses: opacification of maxillary and ethmoid sinuses, normal orbits

Which of the following is most likely to establish the diagnosis:

A. Renal biopsy
B. Nasal and sinus mucosa biopsy
C. Open lung biopsy
D. Pulmonary angiography
E. Transbrachial lung biopsy
F. Skin biopsy
A 49-year-old woman is evaluated for a 4-week history of purpuric rash, arthralgia, and lower limb paresthesia. She also has a 10-year-history of Sjogren syndrome. She has no other pertinent personal or family medical history and takes no medications. Temp: 98.4, BP: 140/76, HR: 80, RR: 14. Ocular and oral mucous membranes are dry. There are nonblanching purpuric and papular lesions on the doors of the feet and anterior tibial regions.

CBC: normal, Creatinine: 1.6 mg/dL
C3: 46 mg/dL
C4: 8.6 mg/dL (low)
RF: 186 units/mL
ANA: 1:160, speckled
c-ANCA: negative
p-ANCA: positive
HBV surface Ag: negative
HCV Ab: positive
HCV RNA: negative
Serum cryoglobulins: positive
SPEP: IgM K paraprotein present
UA: 2+ protein, 15 RBCs/hpf, 5 WBC/hpf, RBC casts

Skin biopsy reveals LCV. Renal biopsy: membranoproliferative glomerular lesions, sub epithelial and sub endothelial immune deposits and glomerular thrombi.

Which of the following is the most likely diagnosis?
A. Microscopic polyangiitis
B. Systemic lupus erythematosus
C. Type I CryoVas
D. Type II CryoVas
A 68-year-old woman is evaluated for a 4-month history of recurring pruritic and burning red papule on the torso and proximal extremities, with individual lesions lasting up to 24 hours and then resolving. She takes loratadine for the itching. Several 1-cm erythematous papules without scales are present on the torso.

- CBC: normal
- ESR 18 mm/hr
- C3: 56 mg/dL
- C4: 11 mg/dL (low)
- Creatinine: normal
- ANA: 1:320, speckled
- UA: normal
- Results of a skin biopsy of one of the lesions reveals transmural and perivascular infiltration of dermal vessels with lymphocytes.

Which of the following is the most appropriate additional treatment for this patient?

A. Cyclophosphamide (Cytoxan)

B. Hydroxychloroquine (Plaquenil)

C. Methotrexate

D. Mycophenolate mofetil (CellCept)
A 38-year-old man is evaluated for an abnormal serum urate level of 7.9 mg/dL (0.47 mmol/L) that was obtained at a health screening performed at his place of employment. All other measures from the comprehensive metabolic profile were normal. He drinks two alcoholic beverages each week (usually on the weekend) and eats meat several times weekly. He has no other pertinent medical history; family history is notable for his father who has gout. The patient takes no medications.

On physical examination, temperature is 37.0 °C (98.6 °F), blood pressure is 120/80 mm Hg, pulse rate is 66/min, and respiration rate is 12/min. BMI is 24. The remainder of the examination is unremarkable.

Which of the following is the most appropriate treatment for this patient?

A. Allopurinol  
B. Colchicine  
C. HCTZ  
D. Probenecid  
E. No treatment
An 88-year-old man presents to his primary care physician complaining of difficulty holding the phone with his right hand. He reports chronic morning stiffness that lasts 1 hour, but he has had no recent episodes of acute swelling. Examination of the patient’s right hand reveals swelling and several hard nodules across the third digit (Figure ). His past medical history is notable for chronic kidney disease, with the most recent laboratory tests demonstrating a serum creatinine level of 2.9 mg/dL (normal, 0.6-1.2 mg/dL), and a long history of “rheumatism.”

Which of the following should be obtained to most accurately diagnose this patient’s condition?

A. 24-Hour urine collection for uric acid
B. Microscopic examination of tissue aspirate
C. Radiographs of the patient’s hands
D. Rheumatoid factor
E. Serum uric acid level
A 32-year-old man is evaluated for gout. In the past 2 years, he has had three gout attacks, two of which involved the first MTP joint. The third attack occurred 1 month ago and involved his right knee; the joint was aspirated, and urate crystals were confirmed on polarized light microscopy. He wants to reduce his risk of future attacks; however, he does not want to take medications. The patient eats a low-fat diet high in leafy green vegetables and dairy products and consumes a small amount of fruit weekly. He drinks one glass of wine two or three times a week. He has no history of kidney stones or tophi. Family history is notable for his father and grandfather who have tophaceous gout. His only medication is hydrochlorothiazide for hypertension.

PE, temperature is 37.0 °C (98.6 °F), blood pressure is 116/76 mm Hg, pulse rate is 60/min, and respiration rate is 12/min. BMI is 27. There are no tophi. Musculoskeletal examination is normal.

Laboratory studies, including complete blood count, serum chemistries, and liver chemistry tests, are normal; erythrocyte sedimentation rate is 16 mm/h, and serum uric acid level is 8.6 mg/dL (0.51 mmol/L).

Which of the following is the most appropriate next step in management?

A. Decrease dairy consumption
B. Decrease leafy green vegetable consumption
C. Decrease wine consumption
D. Increase fruit consumption
E. **Substitute lisinopril for hydrochlorothiazide**
A 44-year-old businessman presents to a physician because of a markedly inflamed and painful right great toe. He states that he just returned from a convention, and noticed increasing pain in his right foot during his plane trip home. Physical examination is remarkable for swelling and erythema of the right great toe as well as small nodules on the patient's external ear. Aspiration of the metatarsal-phalangeal joint of the affected toe demonstrates needle-shaped negatively birefringent crystals. Which of the following agents would provide the most immediate relief for this patient?

(A) Allopurinol
(B) Aspirin
(C) Colchicine
(D) Probenecid
(E) Sulfinpyrazone
A 62-year-old man is evaluated for a 5-year history of gout. He currently experiences approximately four attacks per year. His most recent attack was 3 weeks ago; at that time, he was started on daily colchicine. Six months ago, the patient was diagnosed with granulomatosis with polyangiitis (also known as Wegener granulomatosis); he was initially treated with prednisone and cyclophosphamide and was subsequently switched to azathioprine as a maintenance therapy. He has no other pertinent personal medical history.

On physical examination, temperature is 36.9 °C (98.5 °F), blood pressure is 117/72 mm Hg, pulse rate is 72/min, and respiration rate is 15/min. BMI is 27. The remainder of the examination is normal.

Laboratory studies reveal normal complete blood count and serum electrolyte levels; erythrocyte sedimentation rate is 23 mm/h, and serum uric acid level is 8.7 mg/dL (0.51 mmol/L). Estimated glomerular filtration rate is within normal range. 24-Hour urine collection findings are consistent with uric acid underexcretion.

Which of the following is the most appropriate treatment?

1. Allopurinol
2. Febuxostat
3. Colchicine
4. Probenecid
A 49-year-old man is evaluated for a 10-year history of gout. He is currently asymptomatic but is interested in reducing the frequency of attacks. Previous attacks were rare, but for the past 3 years he has had four to five attacks per year. His father has a history of chronic tophaceous gout. The patient's only medication is ibuprofen as needed for gout attacks.

On physical examination, temperature is 37.0 °C (98.6 °F), blood pressure is 118/80 mm Hg, pulse rate is 72/min, and respiration rate is 13/min. BMI is 29. The general physical examination is normal. There is no evidence of tophi, and the joint examination is unremarkable.

Laboratory studies, including complete blood count, serum chemistries, and liver chemistry tests, are normal; erythrocyte sedimentation rate is 16 mm/h, and serum uric acid level is 9.2 mg/dL (0.54 mmol/L).

Radiographs of the hands and feet are normal.

Which of the following is the most appropriate initial treatment?

A. Allopurinol
B. Colchicine
C. Allopurinol and Colchicine
D. Febuxostat