Quick Recertification Series

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Preparing to recertify (or certify for the first time) is an arduous process for which there is never enough time or opportunities to practice and test one's knowledge. This new department, the Quick Recertification Series, is one way PAs who are preparing to take the exam can meet their informational needs. In a condensed review format, the QRS addresses critical topics included in the exam for both first-time test takers and experienced clinicians. It also provides practice questions, answers, and their explanations. Successful completion of the NCCPA examination requires a variety of preparation tactics. We are pleased to offer one more to add to your test-taking armamentarium!

GIANT CELL ARTERITIS

GENERAL FEATURES

Giant cell arteritis (GCA) is an inflammatory disease that affects primarily the medium and large blood vessels of the head. Because the temporal artery is commonly involved, it is also referred to as *temporal arteritis*. A genetic predisposition is seen in patients with *HLA-DR4* gene and others.

CLINICAL FEATURES

- Symptoms are headache, sensitivity of scalp to touch, jaw claudication, tongue or throat pain, and visual changes (eg, acute visual loss or decrease in visual acuity).
- Physical examination findings may include prominence of temporal arteries either with or without pulsation, tenderness in the temporal area, decreased pulses in the extremities, evidence of ischemia on funduscopic examination, carotid or subclavian artery bruits, and aortic regurgitation.

DIAGNOSIS

- The gold standard for diagnosis is temporal artery biopsy; but results may be negative in some patients.
- Other findings are ESR ≥50 mm/h, although ESR may be normal in some patients; elevated C-reactive protein level; elevated platelet count; and normochromic anemia.
- The usefulness of ultrasonography, MRI with contrast, CT with contrast, and positron emission tomography is debatable and subject to further study.
- The American College of Rheumatology classification of GCA notes that the presence of three of the following criteria is diagnostic for GCA with a 93.5% sensitivity and 91.2% specificity:
  - Age 50 years and older at onset of symptoms
  - Biopsy specimen demonstrating necrotizing arteritis with predominance of mononuclear cell infiltration or a granulomatous process, usually with multinucleated giant cells
  - Decreased pulsation or tenderness of the temporal artery
  - ESR ≥50 mm/h by the Westergren method
  - New-onset localized head pain

TREATMENT

- The goal of treatment is to prevent irreversible blindness caused by ophthalmic artery occlusion.
- Treatment should be initiated immediately in patients whose symptoms and clinical findings suggest GCA. Temporal artery biopsy should be obtained to confirm the diagnosis after the initiation of corticosteroid therapy.
- High-dose corticosteroid therapy is the mainstay of treatment. Effective doses are usually 40 to 60 mg/d of prednisone in a single dose or divided doses.
- Prednisone dosages may be lowered at 2 to 4 weeks, followed by a slow taper over 9 to 12 months.
- Relapses are possible, and patients should be instructed to return emergently to the clinic if symptoms recur.

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QUESTIONS & ANSWERS

1. Your 75-year-old female patient comes to the clinic complaining of headache, jaw claudication, and visual disturbance. You suspect giant cell arteritis (GCA). The gold standard for diagnosis of this disease is

a. ESR >50 mm/h
b. Funduscopic examination
c. Temporal artery biopsy
d. MR angiography

Answer: c

Explanation: Temporal artery biopsy is the gold standard for diagnosis of GCA.

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2. You decide to treat her with prednisone. Which of the following statements is true regarding initiation of treatment?

a. Treatment should be initiated immediately in patients whose symptoms and clinical findings suggest GCA.
b. Patients should be treated until ESR is <50 mm/h
c. Patients should be treated for 1 to 2 weeks only
d. Prednisone is not the recommended treatment for GCA

Answer: a

Explanation: In order to prevent irreversible blindness, treatment should be initiated immediately in patients whose symptoms and clinical findings suggest GCA followed by confirmatory diagnostic testing.

This **Quick Recertification Series** is not meant to replace in-depth studying for the recertification exam and should be used only as an adjunct. Furthermore, the information contained here may not be sufficient to provide diagnosis and treatment in the clinical setting.

CHRONIC RENAL DISEASE

GENERAL FEATURES

- Chronic renal disease (CRD) is defined as the progressive loss of kidney function as measured by a decrease in the glomerular filtration rate (GFR) and the development of uremic symptoms.
- Common causes are hypertension, diabetes mellitus, glomerulonephritis, and polycystic kidney disease. Other causes are long-term use of analgesics (ibuprofen and acetaminophen), heroin abuse, HIV, amyloidosis, and kidney stones.
- Complications of CRD are anemia, pericarditis, coronary artery disease, renal osteodystrophy (loss of bone mass secondary—at least partly—to hyperphosphatemia that leads to hyperparathyroidism).
- CRD is more common among Hispanic, African-American, Asian/Pacific Islander, and Native American populations than whites.

CLINICAL ASSESSMENT

- Symptoms can be nonspecific, such as fatigue, weakness, decreased appetite, nausea and vomiting, frequent urination, nocturia, pruritus, headache, and polyneuropathy,
- Signs are weight loss, muscle wasting, pallor, ecchymosis, sensory deficits, asterixis, and altered mental status.

DIAGNOSIS

- CBC indicates anemia of chronic disease.
- Blood chemistry results indicate hyperkalemia, hypocalcemia, gradual rise in creatinine level, metabolic acidosis.
- Hyperphosphatemia
- Elevated 24-hour urine protein
- Ultrasonography may demonstrate smaller-than-normal kidneys, except in patients with diabetic nephropathy or polycystic kidney disease.
- Gradual decline in GFR
  - Normal (patients older than 30 years): 125 mL/min
  - Stage 1: GFR >90 mL/min
  - Stage 2: GFR 60 to 89 mL/min
  - Stage 3: GFR 30 to 59 mL/min
  - Stage 4: GFR 15 to 29 mL/min
  - Stage 5 (referred to as *end-stage renal disease* [ESRD]): GFR <15 mL/min

TREATMENT

- ACE inhibitors or angiotensin receptor blockers (ARBs) may be used to treat hypertension, decrease proteinuria, and slow progression of CRD. Target BP is 130/80 mm Hg. ARBs are inconsistent at preserving renal function, and ACE inhibitors are preferred.
- For patients who cannot tolerate an ACE inhibitor or an ARB, a non-dihydropyridine calcium channel blocker is preferred.
- Erythropoietin treatment, iron supplementation, and antiplatelet therapy to target hemoglobin of 10 to 12 g/dL. Any higher target leads to increased mortality.
- Calcium and vitamin D supplementation (1,25-dihydroxyvitamin D is preferred.)
- Phosphate binders (calcium carbonate, calcium acetate) are used to reduce phosphate levels and treat renal osteodystrophy. Other options include sevelamer (Renagel) or lanthanum (Fosrenol).
- Dietary modifications: decrease protein, salt, potassium, and phosphorus intake; usefulness of a low-protein diet is still debated; do not limit protein in patients who are malnourished.
- Lifestyle modifications: smoking cessation, weight management, and blood glucose and cholesterol control
- Patients with CRD should avoid imaging contrast dyes, if possible.
- Patients with ESRD may be candidates for dialysis or kidney transplant.
- Absolute indications for dialysis are uremic pericarditis, encephalopathy, bleeding secondary to platelet dysfunction, fluid overload, poorly responsive hypertension, metabolic acidosis that is unresponsive to treatment, persistent nausea and vomiting, malnutrition, and weight loss. JAAPA

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QUESTIONS & ANSWERS

1. Your 78-year-old white, male patient with a history of hypertension complains of an intense sense of fatigue and generally not feeling well. CBC results demonstrate hemoglobin is 11 g/dL and glomerular filtration rate (GFR) is 31 mL/min. You diagnose chronic renal disease (CRD) and place the disease at which stage?

a. Stage 2
b. Stage 3
c. Stage 4
d. Stage 5

Answer: b.

Explanation: Stage 3 CRD is defined as GFR of 30 to 59 mL/min.

2. You decide to treat the patient to improve his sense of well-being and decrease the progression of his disease. You choose which of the following?

a. Iron supplementation
b. Dialysis
c. Kidney transplant
d. ACE inhibitor
e. a and d

Answer: e.

Explanation: Iron supplementation may help maintain his hemoglobin concentration and decrease his sense of fatigue, and an ACE inhibitor can control hypertension, decrease proteinuria, and slow the progression of CRD.

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