PERIPHERAL ARTERIAL DISEASE
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Case Scenario:

A 65yo white male with a h/o HTN, tobacco use and congestive heart failure presents to your office complaining of a 6 month history of an "aching" pain in his right buttock with ambulation up an incline. The pain resolves with rest. Additionally, he complains of intermittent low back pain for the past 5 years, which he controls with as needed anti-inflammatory meds.

1. What entities should you include in the differential diagnosis of the above scenario?

2. How would your differential change if the above patient presented with calf pain?

3. **True or False.** Patients with peripheral arterial disease have approximately the same relative risk of death from cardiovascular causes as do patients with a history of coronary artery or cerebrovascular disease.

4. All of the following are risk factors for PAD except:

   (a) Smoking
   (b) Diabetes mellitus
   (c) Family history of early coronary disease or peripheral vascular disease
   (d) Age > 40yo
   (e) Hyperhomocysteinemia

5. **True or False.** The majority of patients with PAD have typical claudication symptoms defined as pain in one or both legs on walking that does not go away with continued walking and is relieved by rest.

6. Define a normal ABI.

7. You obtain ABI's in the above patient. The result is a value of 1.1. You still have a strong suspicion for PAD as the etiology of his symptoms. What additional noninvasive study can you obtain to determine the presence or absence of PAD?

8. All of the following are indicated in this patient except:

   (a) A supervised walking-based exercise program
   (b) Angiotensin converting enzyme inhibitor
   (c) Antiplatelet agent
   (d) Cilostazol

9. List options for antiplatelet drug therapy in this patient.

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ANSWERS:

1. (a) **Peripheral arterial disease**
   (b) **Hip arthritis**
   (c) **Spinal cord compression**

2. (a) **Peripheral arterial disease**
   (b) **Venous claudication**
   (c) **Chronic compartment syndrome**
   (d) **Nerve root compression**
   (e) **Baker's cyst**

3. **True.** The severity of peripheral arterial disease is closely associated with the risk of myocardial infarction, ischemic stroke and death from vascular causes. The lower the ankle-brachial index values, the greater the risk of cardiovascular events. Note that patients with critical leg ischemia have an annual mortality of 25%!

4. **Correct answer is C.** In contrast to patients with CAD, family history has not been found to be a significant independent risk factor in the development of PAD.

5. **False.** Only 1/3 of patients present with typical claudication symptoms.

6. **Normal ABI** = 0.9 – 1.3
   Mild to moderate PAD = 0.9 – 0.41
   Severe PAD = 0.0 – 0.4

7. Measure **ankle-brachial index** after a **treadmill test**. An ABI that is over 0.9 at rest but decreases by 20% after exercise is diagnostic of peripheral arterial disease.

8. **Correct answer is D.** Cilostazol should not be given to patients with claudication who also have heart failure. Note that a walking-based exercise program improves maximal treadmill walking distance as well as quality of life and may be as beneficial as bypass surgery or more beneficial than angioplasty.

9. **ASA** – should be considered the primary antiplatelet drug for preventing ischemic events in patients with PAD. **Ticlodipine** – has shown some benefit in reducing the risk of vascular events when compared to placebo but keep in mind the substantial risk of thrombocytopenia, neutropenia and TTP.
   Clopidogrel – FDA approved for secondary prevention of atherosclerotic events in patients with PAD – note the 4 per million risk of TTP.

References:

1. Hiatt WR. Medical treatment of peripheral arterial disease and claudication. N Engl J Med 2001; 344: 1608-1621.

2. Schmieder FA, Comerota AJ. Intermittent claudication: magnitude of the problem, patient evaluation, and therapeutic strategies. Am J Cardiol 2001; 87 (suppl): 3D-13D.