1. Which of the following statin target doses is appropriate for a patient 68 years of age with a history of myocardial infarction (MI) and no contraindications or previous adverse events with other statin therapy:

A. Pitavastatin (Livalo) 4 mg  
B. Rosuvastatin (Crestor) 20 mg***  
C. Atorvastatin 20 mg  
D. Pravastatin 80 mg  

The correct answer is: B  
Patients younger than 75 years of age, with clinical atherosclerotic cardiovascular disease, including a history of MI and no contraindications or intolerable adverse events with prior statin therapy, should be treated with a high-intensity statin. The only high-intensity statin listed is Rosuvastatin (Crestor) 20 mg. The others are all moderate-intensity.

2. Which of the following is TRUE regarding vorapaxar (Zontivity):

A. This agent is appropriate as monotherapy in post-myocardial infarction patients  
B. The major adverse events associated with vorapaxar include angioedema and Stevens-Johnson Syndrome  
C. Vorapaxar is a novel P2Y12 inhibitor  
D. Vorapaxar is contraindicated in patients with a history of stroke or transient ischemic attack***  

The correct answer is: D  
Vorapaxar has only been shown to reduce outcomes in combination with aspirin and/or clopidogrel (not as monotherapy); the major adverse events associated with its use include life-threatening and fatal bleeding (not angioedema and Stevens Johnson Syndrome); and vorapaxar is in a new class of medications called protease-activated receptor-1 antagonists.

3. Which of the following is TRUE regarding the safety profiles of angiotensin-converting enzyme (ACE) inhibitors and/or angiotensin II receptor blockers (ARBs):

A. Combined use of ACE inhibitors and ARBs is recommended for all patients following an MI  
B. An ACE-induced cough will likely resolve itself within the first 6 months of presentation  
C. ACE inhibitors can cause angioedema that can be serious and even life-threatening***  
D. ACE inhibitors and ARBs can cause an acute increase in alanine aminotransferase (ALT) upon initiation and therefore, should not be used by patients with hepatic transaminase levels > 3 times the upper limit of normal.  

The correct answer is: C  
ACE inhibitors can cause life-threatening angioedema. The other choices are all false – combined use of ACE inhibitors and ARBs is not routinely recommended and an ACE induced cough will not resolve itself. While ACE inhibitors and ARBs can potentially cause an increase in ALT, this is not a major concern and these agents can be used in the presence of hepatic impairment. More commonly, these agents can cause an acute increase in serum creatinine upon initiation.
4. Which of the following is TRUE regarding the length of therapy with beta-blockers in a post-MI population without contraindications:

A. Beta blockers should be continued indefinitely in all patients with prior ST segment elevation myocardial infarction (STEMI)
B. Beta-blockers should be continued indefinitely in all patients with prior unstable angina/ non-ST segment elevation myocardial infarction (UA/NSTEMI)**
C. Beta-blockers should be discontinued in all patients with prior UA/NSTEMI after a period of three years
D. Beta-blockers should be discontinued in all patients with prior STEMI after a period of 3 years

The correct answer is: B
Beta-blockers should be continued indefinitely by all UA/NSTEMI patients (not discontinued after 3 years as choice C suggests). For patients with STEMI complicated by heart failure, left ventricular dysfunction, or ventricular arrhythmias, beta-blocker therapy should be continued indefinitely. Other STEMI patients without these complications should be on beta-blocker therapy for at least 1 to 3 years, at which point therapy can be discontinued. Treatment beyond 3 years is reasonable as well, but with questionable benefit.

5. Which of the following is TRUE regarding monitoring for statin medications:

A. Routinely drawing low-density lipoprotein cholesterol (LDL-C) levels is still recommended, although LDL-C treatment goals have essentially been abandoned by updated guidelines***
B. Routine monitoring of liver function tests is recommended
C. All patients presenting with muscle symptoms should have a creatine kinase level monitored to rule out rhabdomyolysis
D. Triglycerides should be monitored periodically and levels > 300 mg/dL should be treated with nonstatin alternatives

The correct answer is: A
While it is true that LDL treatment goals have essentially been abandoned by up-to-date guidelines, routine monitoring every 3 to 12 months is still recommended to ensure patients are adhering to therapy and regimens are working as expected. The other choices are all false – routine monitoring of liver function tests is not recommended, only patients with severe muscle symptoms should have a creatine kinase level monitored, and while triglycerides should be monitored periodically, current guidelines only suggest treating levels > 500 mg/dL, not > 300 mg/dL.

6. Which of the following is TRUE regarding the epidemiology and economic impact of acute coronary syndromes:

A. Less than 10% of the total annual costs of ACS result from rehospitalization because of secondary complications
B. Although a large percentage of patients will die within 5 years after their first MI, the remaining population is at a low risk of further complications
C. Medications used for secondary prevention are effective in decreasing the prevalence of complications associated with MI***
D. Depending on the estimates used, ACS account for less than half a million hospitalizations each year
The correct answer is: C
Choice C is true. Nearly 60% (not less than 10%) of the total annual costs of ACS result from rehospitalization after an initial discharge because of secondary complications. Choice B is false because these patients are at a very high risk of further complications. Choice D is also false, in that more than half a million to 1 million hospitalizations each year are a result of ACS (not less than half a million as the choice suggests).

7. Which of the following is FALSE regarding adherence:

A. It is the responsibility of all health care providers to assist patients with overcoming barriers associated with obtaining and adhering to medications
B. Nonadherence to secondary preventative medications following MI has been shown to lead to poorer outcomes
C. Pillboxes, calendars, refill reminders, and synchronization are all useful tools for improving adherence
D. Patients should be switched to brand-name medications to help reduce confusion regarding lengthy, difficult to pronounce generic names***

The correct answer is: D
Patients may find brand names easier to pronounce; however, since cost is such a well-known driver of adherence and brand-name medications often cost significantly more than their generic counterparts, patients are less likely to adhere to brand-name therapy. Instead patients should be counseled about the brand and generic names of each medication they are taking. The other choices are all true.

8. Which of the following is TRUE regarding aspirin:

A. Higher doses of aspirin, such as 325 mg daily, are associated with better outcomes and an increased bleeding risk compared with lower doses, such as 81 mg daily
B. The highest dose of aspirin that can be safely used with clopidogrel is 81 mg daily
C. Patients with gout should completely avoid aspirin because of aspirin’s ability to increase urate excretion and increase serum uric acid concentrations
D. The bleeding risk of triple antithrombotic therapy with aspirin, a P2Y12 inhibitor, and a vitamin K antagonist is 3 to 4 times greater than the bleeding risk of aspirin alone***

The correct answer is: D
While higher doses of aspirin, such as 325 mg daily, are more likely to cause bleeds than lower doses, such as 81 mg daily, outcomes are actually similar between these 2 dosing regimens. No recommendations exist suggesting a maximum dose of aspirin when used in combination with clopidogrel. On the other hand, the maximum dose of aspirin that should be used with ticagrelor or prasugrel is 81 mg daily. Finally, patients with gout should be monitored, but can still use aspirin.

9. Which of the following is TRUE regarding the efficacy of beta-blockers:

A. For patients with STEMI, beta-blockers should be withheld in the acute setting and started within 7 days
B. Certain beta-blockers have specific beneficial effects for other disease states and therapy should be tailored to patients’ specific needs***
C. Beta-blockers definitively improve outcomes in patients treated with percutaneous coronary intervention (PCI)
D. Reduced mortality is a class effect in patients with heart failure with left ventricular systolic dysfunction

The correct answer is: B
Certain beta-blockers have beneficial effects on other disease states. Propranolol, for instance, can be used in migraine prophylaxis and to reduce tremors. The other choices are all false – beta-blockers should be started within the first 24 hours in hemodynamically stable patients experiencing STEMI without contraindication; beta-blockers may or may not be beneficial for patients who have undergone PCI; and finally, only metoprolol succinate, bisoprolol, and carvedilol have been shown to reduce mortality in patients with heart failure and left ventricular systolic dysfunction.

10. Which of the following is TRUE regarding the treatment of statin-induced myopathy:

A. The first step in establishing a causal relationship between statin therapy and mild-to-moderate muscle symptoms is to slowly titrate the dose of the statin down
B. For mild-to-moderate muscle symptoms, the statin should be discontinued promptly and the patient evaluated for the possibility of rhabdomyolysis
C. If mild-to-moderate muscle pain resolves upon initial discontinuation of a statin, the patient should be switched to a nonstatin alternative
D. Creatine kinase levels greater than 10 times the upper limit of normal and an increase in serum creatinine are indicative of rhabdomyolysis

The correct answer is: D
The only true answer is choice D. Choices A and C are false – To establish a causal relationship, the statin should be discontinued. No downward dose titration is necessary. The next step in determining if a causal relationship exists is to retry the patient with the same dose or a lower dose of the original statin, not a nonstatin alternative as choice C suggests. Choice B is false as that recommendation is specific for severe muscle pain, not mild-to-moderate symptoms.