Clinical Case:

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The patient is a 63 year old female (75 kg) who presented with jaw pain, sweating, and shortness of breath. ECG shows ST elevation, and she has positive troponins. She is taken emergently for percutaneous coronary intervention and has a bare metal stent placed in her right coronary artery (100% stenosis). Her past medical history is significant for a myocardial infarction (1992), hypertension, hyperlipidemia, and Type 2 diabetes mellitus. Patient stated that she was only taking her metformin because she couldn't afford her other medications.

Active Prescriptions: aspirin 325 mg qday, lisinopril 20 mg qday, metformin 1000 mg BID, omeprazole 20 mg qday, 400 mg ibuprofen prn for headache/pain

Admission:

BP: 177/69 mmHg HR: 68 bpm Temp: afebrile
Na: 139 mEq/L; K: 3.9mEq/L; Cl: 104 mEq/L; CO2: 27 mEq/L; BUN: 18 mg/dL; Glu: 347 mg/dL; Ca: 9.0 mEq/L; SCr: 0.9 mg/dL

TG: 158 mg/dL; TChol: 179mg/dL; HDL: 32 mg/dL LDL: 127mg/dL

Day 1:

BP: 128/62 mmHg HR: 56 bpm Temp: afebrile
Ejection Fraction: 35-40%
Na: 139 mEq/L; K: 4.6 mEq/L; Cl: 105 mEq/L; CO2: 26 mEq/L; BUN: 13 mg/dL Glu: 149mg/dL; Ca: 8.3 mEq/L; Scr: 0.6 mg/dL
TG: 90 mg/dL; TChol: 139 mg/dL; HDL: 29mg/dL LDL: 98 mg/dL

Case Questions:

1. What medications are indicated for a patient post-STEMI?
2. The patient had a bare metal stent placed. How long should she take her antiplatelet medications?
3. What changes need to be made to the patient's home medications?
4. Which statin is most appropriate for this patient?

Case Answers:

1. What medications are indicated for a patient post-STEMI (myocardial infarction with ST-elevation)?
    a. According to the 2011 ACCF/AHA/SCAI Guidelines for PCI, the patient should be on:
        i. Beta blocker (metoprolol succinate, carvedilol or bisoprolol). Metoprolol succinate, carvedilol and bisoprolol have been shown to reduce mortality in this setting. The clinician should work with the patient to determine the most affordable beta-blocker option in her areas.
        ii. ACE inhibitor or ARB if the patient cannot use an ACE inhibitor.
        iii. Spironolactone (due to her EF <40% s/p MI (EPHESUS trial))
        iv. Aspirin 81 mg
        v. $P2Y_{12}$ Agent (clopidogrel, ticagrelor, or prasugrel). Clopidogrel might be the more affordable option.
        vi. Statin
        vii. Sublingual nitroglycerin (prn)

2. The patient had a bare metal stent placed. How long should she take her antiplatelet medications?
    a. In the ACS setting, dual anti-platelet therapy should be continued for at least one year for both bare metal and drug eluting stents. The patient should take clopidogrel 75 mg once daily, ticagrelor 90 mg BID, or prasugrel 10 mg daily for at least 1 year and Aspirin 81 mg for life. If this patient had presented for an elective PCI procedure (non ACS), clopidogrel is recommended for a minimum of 1 month following a bare metal stent and 12 months after a drug eluting stent.

3. What changes need to be made to the patient's home medications?
    a. Patient should avoid taking omeprazole while on clopidogrel. Clopidogrel's label recommends avoiding omeprazole and esomeprazole since they can reduce the metabolism of clopidogrel to its active metabolite by inhibiting CYP2C19 activity. Alternative PPIs can be used; however, currently, she does not meet the criteria for GI prophylaxis per the ACC/ACG statement.
    b. The patient should take low dose aspirin instead of aspirin 325 qday.
    c. Patient needs to be counseled to use acetaminophen for headaches and pain instead of ibuprofen.
    d. Check A1C to determine blood glucose control. Per the package labeling for metformin, patients with heart failure are at increased risk for lactic acidosis and the use of metformin in these patients is listed as a warning especially in the setting of an acute exacerbation. Metformin can be continued currently, but should be changed to another agent if she has frequent HF exacerbations or change in renal function.

4. Which statin is most appropriate for this patient?
    a. According to the ACC/AHA 2013 Blood Cholesterol guidelines, patients <75 years old with CVD and no contraindications, conditions, or drug-drug interactions influencing statin safety, or a history of statin intolerance should be started on high intensity statin (Atorvastatin 40-80 mg or Rosuvastatin 20 mg). Atorvastatin may be the more affordable option.