Therapeutic Issues in Chronic Heart Failure

1. (This is a group exercise—everybody to contribute answers) Find 14 probable errors in the management of the following patient with early heart failure.
   A 59 year old male presents at the Medplex Internal Medicine Clinic with the new onset of shortness of breath. He finds himself short of breath on walking a half a block with the slight incline nearest to his house. He has no PND. He also complains of a trace of ankle edema which occurs after he has been up and around. He reported a long history of hypertension although his financial circumstances have led him to avoid medications or doctors. He has long standing diabetes type 2 which has not been very well managed and in the past year, he has taken nothing for it. A couple of months ago he went to an emergency room with what he was told was a supraventricular regular tachycardia and he was started on cardizem 60mg q.i.d. He has had no recurrence of that difficulty. He was on no other medication. On PE in the clinic, his BP was 155/85 Pulse 80. He weighed 210 lb. and was 5'6' tall. He was not tachypneic. There was slight neck vein distention when he lay at a 30 degree angle. His chest revealed a few crackles at the base and on PE his heart was somewhat enlarged with a grade 2 systolic murmur at the apex---there was a hint of a S3. His liver was just palpable at the right costal margin. He had 2 plus ankle edema bilaterally. Lab work was generally unremarkable. His potassium was 4.9 and his creatinine was 1.3. Fasting blood glucose was 140. He did have micro albumin present in his urine and a FBS of 140. His BNP was 440. EKG showed voltage criteria for LVH with a sinus rhythm. Chest x ray showed moderate cardiomegaly with a suggestion of pulmonary congestion. Pulse oximetry was 90. The following clinical decisions were made:

   a. Continue the cardizem in current dose
   b. Order an echocardiogram
   c. Start hydrochlorothiazide 50mg a day
   d. Start lisinopril 5 mg each day.
   e. Return in 6 weeks.

   .
   Patient returned in 6 weeks slightly improved. The lungs were clear—there was still some ankle edema. BP was 155/85 P 80. Echocardiogram showed no valvular disease and some LVH and an ejection fraction of 35%. Labs revealed a creatinine of 1.5. Potassium was 3.4. FBS was 160. It was decided to order a BNP and the value was 420.

   It was decided to
   a. D/C the Cardizem
   b. Continue the lisinopril at 5 mg each day.
   c. Change to lasix 40mg each day and stop the HCTZ.
   d. Start Metoprolol tartrate at 50 mg bid.
   e. Deal with his type 2 diabetes by adding Actos 15 mg a day
   f. See him again in 8 weeks

Patient returns in 8 weeks He reports a weight gain of 4 kg. He has a very sore back due to stumbling from his scale on which he was weighing himself daily according to your instructions. His PE is largely unchanged. Continues in sinus rhythm with pulse of 68 and BP of 115 over 70.The ankle edema seems more prominent. Creatinine is 1.3 Potassium is 4.5

You take the following steps

a. Increase the lisinopril to 10 mg per day
b. Increase the metoprolol tartrate to 100 mg b.i.d.
c. To deal with the sore back add Naproxen 750 mg b.i.d.
d. You increase the lasix to 40 mg bid
e. You replace the actos with metformin
f. You add spironolactone 25 mg a day
g. You decide to add digoxin to improve inotropic effect and lengthen his life span. You order .125mg a day.

2. In patients with chronic systolic heart failure, ACE inhibitors:

a. Improve symptoms
b. Decrease hospitalization
c. Improve survival
d. All of the above

3. ACE inhibitors should not be used in patients with:

a. Diabetes
b. A history of myocardial infarction
c. Bilateral renal artery stenosis
d. Hypertension

4. Like ACE inhibitors, ARBs have not improved clinical outcomes in patients with:

a. LVEF > 40%
b. LVEF < 40%
c. Diabetes
d. Renal impairment

5. A beta-blocker is recommended for treatment of systolic heart failure:

a. In addition to an ACE inhibitor
b. As an alternative to an ACE inhibitor
c. Only for patients with symptoms
d. In maximum doses from the outset

6. Beta-blockers should be used cautiously, if at all, in a patient with:

a. Diabetes
b. Asthma
c. Hypertension
d. All of the above

7. Addition of spironolactone to standard therapy in patients with severe systolic heart failure reduced the risk of:

a. Hospitalization and death
b. Myocardial rupture
c. Atrial fibrillation
d. None of the above

8. The main concern with aldosterone inhibitors is:

a. Hyperglycemia
b. Hypernatremia
c. Renal failure
d. Hyperkalemia

9. Loop diuretics used to treat systolic heart failure have been shown to:

a. Improve survival
b. Decrease symptoms
c. Cause hyperkalemia
d. All of the above

10. Digoxin used to treat heart failure can:

a. Decrease symptoms
b. Increase exercise tolerance
c. Decrease hospitalizations
d. All of the above

11. Initial treatment of most patients with systolic heart failure should include:

a. An ACE inhibitor and an ARB
b. An ARB and a vasodilator
c. An ACE inhibitor and a beta-blocker
d. A beta-blocker and an aldosterone antagonist

12. Addition of hydralazine and isosorbide dinitrate has been effective particularly in:

a. Diastolic heart failure

b. Patients with left ventricular dysfunction after an MI
c. African-Americans
d. Patients who cannot tolerate an ACE inhibitor