

# UCLA Heart Failure Top Ten List

## 10 Most Frequent Management Errors

10. *Renal Insufficiency is a Double Indication, Not Contraindication:* Patients with HF and renal insufficiency benefit from ACE inhibitors or ARBs, but frequently therapy is not initiated due to concern about worsening renal function. ACE inhibitors or ARBs decrease the risk of renal progression regardless of the etiology of the renal dysfunction or whether proteinuria is present. There is no degree of chronic kidney disease, including end-stage on dialysis, where an ACE inhibitor or ARB does not continue to be indicated for HF. Patients with HF and renal insufficiency should be started on lower ACEI or ARB doses and have frequent monitoring of their electrolytes and renal function. Attention to the patients volume status and avoiding NSAIDs can reduce the risk of worsening renal function. The only absolute contraindications to ACE inhibitor are angioedema, persistent hyperkalemia and pregnancy and for ARB persistent hyperkalemia and pregnancy. If the patient is discharged without an ACE inhibitor or ARB, contraindications to BOTH medication classes must be documented.

9. *Every Diet But a 2 gram Sodium Diet:* HF patients are frequently written for a CCU diet, cardiac diet, regular diet during hospitalization or at discharge. These diets contain 4 or more grams of sodium and contribute to further volume overload. A 2 gram sodium diet is indicated for all patients with congestive HF. This 2 gram sodium diet can be ordered along with other restrictions such as ADA or CCU diet.

8. *How Low is Too Low:* ACE inhibitors or ARBs, beta blockers, and aldosterone antagonists are commonly not initiated due to concern about the blood pressure being too low. The target systolic blood pressure for patients with systolic dysfunction heart failure is potentially between 80 to 95 mmHg. HF patients with SBP of  $\geq 95$  mmHg are relatively hypertensive with elevated afterload/systemic vascular resistance. So long as the SBP is 80 mmHg or higher and the patient is not having symptomatic hypotension, therapy may be initiated. Start at low dose of one medication at a time and titrate the dose upwards to target levels, as tolerated. Surprisingly, the HF patient's blood pressure may tend to rise after initiation of beta blockers and ACE inhibitors or ARBs due to the improvement in cardiac function and cardiac index.

7. *But the Chief Complaint was not LV Dysfunction:* Patients with asymptomatic LV dysfunction are frequently not receiving ACE inhibitors or ARBs, beta blockers, and aldosterone antagonists, because in the absence of symptoms the physician failed to consider starting these treatments. ACE inhibitors or ARBs, beta blockers, and aldosterone antagonists benefit patients with entirely asymptomatic left ventricular dysfunction by reducing/reversing ventricular remodeling, reducing the progression on to symptomatic HF, and improving survival. This is true for all known etiologies of LV dysfunction (ischemic cardiomyopathy, hypertensive heart disease, primary cardiomyopathies, diabetic heart disease, valvular cardiomyopathies, toxic cardiomyopathies, etc). For patients with LVEF of 40% or less ACE or ARB inhibitor and beta blocker should be utilized, unless contraindications are documented or it is demonstrated that the patient does not tolerate treatment. Patients with post-MI LVD should also be treated with an aldosterone antagonist, unless contraindicated.

6. *A Pain Reliever that is a Real Pain:* NSAIDs and COX-2 inhibitors are prescribed to patients with HF, without recognition as to the serious risks and this can lead to serious adverse consequences. Patients with HF and especially those on ACE inhibitors are very sensitive to alterations in renal hemodynamics. The use of NSAIDs including the COX-2 inhibitors in HF patients can result in worsened HF, acute renal failure, and hyperkalemia. Studies demonstrate that NSAID use increases the risk of HF hospitalization and death ten fold. These agents should be avoided, if at all possible. Alternative treatments for pain or control of gout (such as colchicine) should be utilized instead.

5. *My Patient is Now an Impressionist Painter:* Digoxin toxicity is frequent and commonly under-

recognized in HF, especially in the elderly. Digoxin is not indicated for most patients with heart failure. If indicated for atrial fibrillation rate control, digoxin levels should be kept in the range of 0.5 to 1.1 ng/ml. All patients with worsening renal function, worsening in HF status, or suspected toxicity should have a level checked. In general, digoxin doses of higher than 0.125 mg/dl should be avoided in the elderly. Remember drug-drug interactions such as with amiodarone. Any gastrointestinal symptoms, visual changes, or new arrhythmias should be assumed to be digoxin toxicity, until proven otherwise. At the earliest sign of potential digoxin toxicity, hold digoxin and check a level.

4. *How to Write the Medication Order so Not a Single Dose is Given:* Hold orders for ACE inhibitors, ARBs and beta blockers are frequently written at levels of 90 or 100 mmHg, which in general is not appropriate. While a hold order at that level may be reasonable for patients with hypertension whose baseline blood pressures is above 140/90 or patients in the first day of an ACS, it is not reasonable for HF patients where the baseline and ideal systolic blood pressure is frequently in the 80 to 90 mmHg range. Writing hold orders at the higher BP levels, inappropriately results in the HF patient missing multiple doses. When orders for ACE inhibitors, ARBs, and beta blockers are written for patients with HF, the hold orders should be written as hold for SBP < 80 mmHg and notify HO (with rare exceptions). As aldosterone antagonists have minimal BP effect in HF patients, hold orders are not needed. Remember these agents are being utilized to block neurohumoral activation in HF. For beta blockers heart rate hold orders <40 beats per minute are appropriate.

3. *What Got Them Here in the First Place:* Secondary prevention measures are underutilized in patients with HF. Coronary artery disease is a contributing etiology in approximately 70% of the cases of heart failure in the United States. In heart failure patients with coronary artery disease, evidence of atherosclerotic plaque disruption and an acute coronary syndrome is seen on autopsy in about 50% of sudden deaths and 25% of progressive HF deaths. The risk of coronary artery disease progression should be addressed with antiplatelet therapy (ASA or clopidigrel) and/or anticoagulation and statin treatment adjusted to achieve LDL-cholesterol  $\leq 70$  mg/dL and HDL  $\geq 40$  mg/dL. Smoking status (non, former, current) should be documented and advice to stop smoking in all current or recent smokers should be provided and documented in the medical record.

2. *I Must Have Told Them:* HF patient education and instructions are frequently not provided or adequately documented in the medical record. Patients with heart failure face a substantial risk of rehospitalization and death. Education of HF patients and their families is thus considered critical. Failure of patients to comply with physician instructions or failure to give these instructions is a frequent cause of recurrent HF. It is incumbent for health care professionals to be certain that patients have an understanding of their HF therapy, dietary restrictions, daily weights, activity, importance of compliance, and the signs and symptoms of recurrent heart failure. The medical record should contain a copy of written discharge instructions provided to the patient which includes all of the following: activity level, diet, discharge medications, follow-up appointment, daily weight monitoring, what to do if symptoms worsen. These can be found on the QMS link from the UCLA Mednet Homepage.

1. *They Really Went From Being Contraindicated to the Standard of Care:* Beta blockers have been shown to be the single most effective therapy to reduce morbidity and mortality in all classes of HF from asymptomatic LV dysfunction to Class IV. This means all HF patients with LVEF  $\leq 40\%$  should be treated, unless contraindications exist, intolerance has been clearly demonstrated and documented, or the patient refuses. Still less than 60% of HF patients are being treated with these agents. Patients that are severely volume overloaded or decompensated should have initiation delayed until they are diuresed and stabilized, however if already treated with beta blockers therapy should continue. Start prior to hospital discharge at low HF initiation doses and slowly titrate upwards at 2 week intervals. Contraindications are severe asthma and cardiogenic shock. Heart rates in the 50-60 range, if asymptomatic do not prevent initiation or uptitration of beta blocker therapy. Patients with symptomatic bradycardia, second or third degree heart block should have a pacemaker placed, then be started on beta blockers. Diabetes and peripheral vascular disease are not contraindications as these patients clearly benefit from beta blockers.