Inpatient Notes: Novel and Advanced Therapies for Heart Failure–What a Hospitalist Needs to Know

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Heart failure (HF) is one of the most common causes of hospitalization and has significant financial implications in the current era because of statutory penalties for rehospitalizations imposed with the Patient Protection and Affordable Care Act. Contemporary data suggest that although HF hospitalization rates have declined, mortality among those hospitalized remains high, approaching a rate of greater than 20% in the first month after discharge. This highlights an important opportunity for improvement because attempts to reduce rehospitalization risk have not translated into lower mortality risk. Hospitalists care for a large majority of hospitalized patients with HF and can play a key role in ensuring that appropriate therapies are instituted before discharge.

Why Should Hospitalists Be Involved in Medication Optimization When Patients With HF Are Hospitalized?

First, several studies have shown that patients are more likely to receive guideline-directed medical therapy if the medications are initiated during hospitalization, as opposed to deferring treatment initiation until after discharge. Second, patients may be more receptive to receiving a medication when it is prescribed (and its importance emphasized) in the hospital setting. Third, ensuring that patients are discharged on indicated therapies may be an effective strategy in reducing rehospitalizations.

Are There Any New Strategies Available to Facilitate an Effective Discharge and Reduce Morbidity or Mortality in Hospitalized Patients With HF?

The biggest paradigm shift in the treatment of HF with reduced ejection fraction (HFrEF) has been the introduction of a combination of an angiotensin-receptor blocker with a neprilysin inhibitor (ARNI). The only available ARNI is sacubitril–valsartan. Compared with angiotensin-converting enzyme inhibitors (ACEIs), this medication has shown an absolute risk reduction of 5% for all-cause mortality and rehospitalization (1). Initiation of sacubitril–valsartan has been shown to be safe during HF hospitalization, and it has a side effect profile similar to those of ACEIs and angiotensin II–receptor blockers (ARBs). Despite its advantages, sacubitril–valsartan has not been widely prescribed, likely because of unfamiliarity with the medication among clinicians and its higher cost compared with ACEIs and ARBs. Currently, all major cardiovascular societies recommend ARNIs over ACEIs and ARBs in patients with HFrEF.

A second class of drugs that has recently impacted managing HFrEF is sodium–glucose cotransporter-2 inhibitors. These agents have been shown to reduce morbidity and mortality in patients with HFrEF with and without diabetes (2). Apart from promoting osmotic diuresis and natriuresis, they also prevent cardiac reverse remodeling. Major adverse effects include recurrent urinary tract infections and euglycemic ketoacidosis, as these drugs promote glycosuria. They are weak glucose-lowering agents and are not first-line therapy for diabetes; however, they are indicated as second- or third-line agents, in combination with other drugs.

Apart from ARNIs and sodium–glucose cotransporter-2 inhibitors, there have been 2 other medications that have not been shown to reduce mortality but have been shown to reduce HFrEF rehospitalizations. The first one is ivabradine, a sinus node inhibitor. It has been shown to reduce HF hospitalizations when prescribed to patients with heart rates greater than 70 beats/min despite maximally tolerated doses of β-blockers (3). Adverse effects include bradycardia and transient visual brightness. Ivabradine is not a replacement for β-blockers but is additive to them. Another agent that has been shown to reduce hospitalizations in patients with HFrEF is vericiguat, a guanylate cyclase stimulant (4). Among patients with HFrEF with a recent decompensation, vericiguat reduced HF rehospitalizations and was well tolerated, with no need for laboratory monitoring. Compared with other medications that only reduce HF hospitalizations, such as digoxin, both vericiguat and ivabradine have a more favorable risk profile.

Although all of the above therapies have the potential to improve care for patients with HFrEF, specific therapies for HF with preserved ejection fraction (HFpEF) remain scant. To date, the only therapeutic agent that has shown efficacy in reducing HF hospitalizations among patients with HFpEF is spironolactone. Of note, compared with placebo, nitrates in patients with HFpEF have been associated with a progressive decrease in activity levels at higher doses and should be avoided unless there is another indication for them (for example, angina).

Should Hospitalists Play a Role in End-of-Life Care for Patients With End-Stage HF?

Heart failure can be a debilitating disease and is associated with high mortality in those with frequent rehospitalizations. Recognizing end-stage HF is important, not only to ensure that patients receive all indicated therapies but also to help with prognostication and to include palliative care at an early stage. Signs

and symptoms of end-stage HF include cardiac cachexia, hyponatremia, progressive renal dysfunction, and intolerance to guideline-directed medical therapy due to hypotension. Presence of these signs should warrant consultation with the cardiology department during hospitalization to assess if patients may be candidates for advanced therapies, including a cardiac transplant or left ventricular assist device. Although cardiac transplantation remains the gold standard for treatment of end-stage HF, with a median survival of 10 years, left ventricular assist devices have undergone a technological revolution. The current generation of devices have nearly eliminated device thrombosis, although recurrent gastrointestinal bleeds, strokes, and infections remain major adverse events.

Palliative care plays a central role in the management of patients with end-stage HF. Data from clinical trials support that multidisciplinary care, involving palliative care specialists, improves quality of life for these patients, as compared with usual care (5). Although specialized palliative care services are not always available, hospitalists play a central role in managing symptoms, facilitating patient-centered communication, and addressing goals of care.

Conclusion

Integration of these novel therapies and concepts of care in the management of patients with HF has the potential to reduce mortality and rehospitalizations and to improve patients' quality of life. Hospitalists are uniquely poised to play a key role in the adoption of these new therapies in hospitalized patients with HF.

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