Managing hemoglobin levels might improve outcome in patients with heart failure

Although evidence suggests that anemia is common in patients with heart failure (HF) and is linked with increases in mortality and morbidity, the underlying mechanism of action is unclear. In addition, it is not evident whether changes in hemoglobin over time are related to the occurrence of adverse events.

In this retrospective analysis of data from the Valsartan Heart Failure Trial, patients with the largest average decrease in hemoglobin over 12 months (from 142 g/l to 126 g/l) had a significantly greater risk of hospitalization, morbid events and death than the quartile of patients who showed little change in hemoglobin ($P \leq 0.01$ for all). Decrease in hemoglobin levels was independently associated with increased risk of death even in those patients who were not anemic at baseline. Interestingly, lack of anemia at baseline and increases in hemoglobin over 12 months were not associated with improved cardiac function. A range of factors, including serum albumin, glomerular filtration rate, blood pressure and C-reactive protein, were independently associated with hemoglobin levels at baseline and over time, suggesting multiple causes of anemia in patients with HF.

The link between changes in hemoglobin levels and mortality and morbidity seen in this study suggests that there might be potential benefits in managing anemia in patients with moderate to severe HF. What constitutes the optimal hemoglobin level and the best way to achieve this level remains to be addressed.

Carol Lovegrove

Original article Anand IS *et al.* (2005) Anemia and change in hemoglobin over time related to mortality and morbidity in patients with chronic heart failure: results from Val-HeFT. *Circulation* **112:** 1121–1127

PCI-CLARITY: is clopidogrel pretreatment before PCI beneficial?

Following percutaneous coronary intervention (PCI), antiplatelet therapy in the form of aspirin alone or dual therapy with aspirin and clopidogrel can lower the risk of adverse thrombotic and ischemic events. Whether treatment with clopidogrel before PCI prevents more complications than clopidogrel administered at the time of PCI in patients with ST-segment elevation myocardial infarction (STEMI) who have received fibrinolytic therapy is, however, unclear.

The PCI–Clopidogrel as Adjunctive Reperfusion Therapy (CLARITY) study was a prospective substudy of patients with STEMI who underwent PCI following initial fibrinolytic pharmacotherapy in the CLARITY–Thrombolysis in Myocardial Infarction (TIMI) 28 study. Patients were randomly assigned placebo or a loading dose of 300 mg clopidogrel administered in the 45 min after fibrinolysis followed by 75 mg clopidogrel daily.

Of the 1,863 patients who underwent PCI, 933 received clopidogrel and 930 received placebo. On the basis of intention to treat, the overall occurrence of stroke, recurrent myocardial infarction or cardiovascular-related mortality, from randomization to 30-day follow-up, was significantly lower in patients who had received clopidogrel pretreatment than in patients who received placebo (70 versus 112; number needed to treat 23, odds ratio 0.59, 95% CI 0.43–0.81; $P = 0.001$). Importantly, clopidogrel pretreatment did not raise the risk of bleeding complications.

The authors conclude that clopidogrel should be administered before PCI in patients with STEMI treated with fibrinolytic therapy.

Hannah Camm

Original article Sabatine MS *et al.* (2005) Effect of clopidogrel pretreatment before percutaneous coronary intervention in patients with ST-elevation myocardial infarction treated with fibrinolytics: the PCI–CLARITY study. *JAMA* **294:** 1224–1232

Concentric remodeling and myocardial dysfunction

Concentric remodeling is generally thought to be a compensatory response to increased cardiac afterload, but the way in which it develops into myocardial dysfunction and congestive heart failure is unclear. To examine the relationship between concentric remodeling and regional left ventricular failure, Rosen and colleagues used quantitative analysis of tagged MRI to look at regional myocardial function in a cross-sectional study of individuals with no previous history of heart disease who were participants in the Multi-Ethnic Study of Atherosclerosis (MESA).