

Pharmacological Management for Chronic Heart Failure

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Angiotensin-converting enzyme inhibitors (ACEI) and beta-blockers are main stream of pharmacological treatment for chronic heart failure. However, the role of angiotensin receptor blockers (ARB) as first line management for chronic heart failure is still not in consensus. Several studies such as Val-HeFT¹, STRETCH² and CHARM-overall³ trials show benefits of ARB in patients of heart failure. The benefits include improving exercise tolerance times, symptoms and signs of congestive heart failure (CHF), cardiothoracic ratio (STRETCH study), and reduced mortality (Val-HeFT and CHARM-overall studies). When comparing with ACEI, HEAVEN⁴ and RESOLVD⁵ show ARBs are similarly efficacious and safe for treating heart failure. ELITE⁶ study even shows ARB was associated with a lower mortality than ACEI in elderly heart failure patients. However, in ELITE study, the primary endpoint is not mortality and the case numbers is small (722 patients). In ELITE II trial with symptomatic CHF patients⁷, in OPTIMAAL⁸ and VALIANT⁹ trials involving high risk and heart failure after acute myocardial infarction, ARB does not prove to be superior to ACEI. According to CHARM-alternative¹⁰ trial, ARB was generally well tolerated and reduced cardiovascular mortality and morbidity in patients with symptomatic chronic heart failure and intolerance to ACE inhibitors.

The role for combination of ARB and ACEI in treatment of CHF patients is still controversial. In Val-HeFT¹ trial, combination of ARB and ACEI is associated with increased mortality. In VALIANT⁹ trials involving patients with heart failure after acute myocardial infarction, combining ARB with ACEI increase the rate of adverse events without improving survival. In CHARM-Added¹¹ trial, the addition of ARB to ACEI and other treatment leads to a further clinically important reduction in relevant cardiovascular events in patients with CHF and reduced left-ventricular ejection fraction. In a quantitative review of data from randomized clinical trials¹², combination ARB plus ACE inhibitor vs control treatment that included ACE inhibitors was associated with significant increases in medication discontinuations because of adverse effects in patients with chronic heart failure (RR, 1.38 [95% CI, 1.22-1.55]) or in patients with acute myocardial infarction with symptomatic left ventricular dysfunction (RR, 1.17 [95% CI, 1.03-1.34]), and for both conditions there were significant increases in worsening renal function (RR, 2.17 [95% CI, 1.59-2.97] and RR, 1.61 [95% CI, 1.31-1.98], respectively), hyperkalemia (RR, 4.87 [95% CI, 2.39-9.94] and RR, 1.33 [95% CI, 0.90-1.98], respectively; the latter was not significant), and symptomatic hypotension (RR, 1.50 [95% CI, 1.09-2.07], and RR,

1.48 [95% CI, 1.33-3.18], respectively).

The compliance of medication is very important in heart failure patients.¹³ The combined home-based intervention with clinical nursing specialists could improve compliance of medication for chronic heart failure. The system is capable of decreasing adverse outcome, most notably hospitalization and length of stay, could trigger significant cost savings in the management of heart failure.¹⁴

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