



Heart Failure and Cardiomyopathies

HEART RATE REDUCTION AND EXERCISE PERFORMANCE IN RECENT ONSET HEART FAILURE WITH REDUCED EJECTION FRACTION: ARGUMENTS FOR BETA-BLOCKER HYPO-RESPONSE

Poster Contributions

Poster Hall B1

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Background: Beta-blockers reduce mortality and readmissions in heart failure with reduced ejection fraction (HFrEF), which might be explained by resting heart rate (HR) reduction.

Methods: Consecutive patients (n=50) with recent-onset HFrEF (<30 days) performed a standardized exercise protocol with respiratory gas analysis at baseline, as well as after 6 and 12 months. Guideline-recommended target doses for beta-blocker therapy were aimed.

Results: At baseline, 6 and 12 months, 36%, 70% and 62% of patients, respectively, had a resting HR <70 bpm. Beta-blocker dose after 12 months was comparable in patients with resting HR <70 versus ≥70 bpm (P-value=0.631). However, with similar dose uptitration, the former versus latter had a significantly larger HR reduction (17±22 versus 4±15 bpm; P-value=0.027). Peak oxygen consumption (VO₂max) was significantly higher when resting HR was <70 versus ≥70 bpm (17.5±5.5 versus 14.4±3.3 mL/min/kg, respectively; P-value=0.038; Figure). Patients in whom resting HR decreased at follow-up compared to baseline had a 2.0±3.2 mL/min/kg increase in VO₂max compared to a 1.2±7.7 mL/min/kg increase in patients who did not demonstrate a lower resting HR (P-value=0.033).

Conclusion: In recent onset HFrEF, exercise performance was better when resting HR was controlled <70 bpm with beta-blocker therapy. However, despite aggressive dose uptitration, many patients did not achieve this target as they had little HR reduction with beta-blocker therapy.

