

**Title**

Tolerability of Target Doses of Metoprolol vs. Carvedilol in Patients with Heart Failure with Reduced Ejection Fraction

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**Background**

Current heart failure guidelines recommend a beta-blocker, such as carvedilol or metoprolol succinate, in addition to other therapies, for the treatment of heart failure with reduced ejection fraction (HFrEF). The morbidity and mortality benefit of beta-blockers is based on target doses achieved in clinical trials; however, data directly comparing the efficacy and tolerability is conflicting.

**Methods**

Patients  $\geq$  18 years with HFrEF initiated on metoprolol succinate or carvedilol between December 2016 – December 2018 were evaluated for inclusion. Patients treated with a non-dihydropyridine calcium channel blocker, sotalol, or mechanical ventricular assistance were excluded. The primary outcome was the proportion of patients that achieved target dose (metoprolol succinate 200mg daily, carvedilol 25mg twice daily).

**Results**

Of the 84 patients included, 28 (33.3%) received metoprolol and 56 (66.7%) received carvedilol. The mean total daily dose of carvedilol achieved was 33 mg and 93.8 mg for metoprolol succinate. Of the patients on metoprolol, 14.3% (n=4) achieved target dose compared to 39.3% (n=22) on carvedilol (P = 0.004). The most common adverse effect was hypotension occurring in 25% (n=7) of metoprolol and 21.4% (n=12) of carvedilol patients.

**Conclusion**

Patients treated with carvedilol for HFrEF may be more likely to achieve guideline-recommended target doses than those treated with metoprolol succinate.