
BACKGROUND: Metoprolol can improve hemodynamics in chronic heart failure, but survival benefit has not been proven. We investigated whether metoprolol controlled release/extended release (CR/XL) once daily, in addition to standard therapy, would lower mortality in patients with decreased ejection fraction and symptoms of heart failure.

METHODS: We enrolled 3991 patients with chronic heart failure in New York Heart Association (NYHA) functional class II-IV and with ejection fraction of 0.40 or less, stabilized with optimum standard therapy, in a double-blind randomized controlled study. Randomization was preceded by a 2-week single-blind placebo run-in period. 1990 patients were randomly assigned metoprolol CR/XL 12.5 mg (NYHA III-IV) or 25.0 mg once daily (NYHA II) and 2001 were assigned placebo. The target dose was 200 mg once daily and doses were up-titrated over 8 weeks. Our primary endpoint was all-cause mortality, analyzed by intention to treat.

FINDINGS: The study was stopped early on the recommendation of the independent safety committee. Mean follow-up time was 1 year. All-cause mortality was lower in the metoprolol CR/XL group than in the placebo group (145 [7.2%, per patient-year of follow-up]) vs 217 deaths [11.0%], relative risk 0.66 [95% CI 0.53-0.81]; p=0.00009 or adjusted for interim analyses p=0.0062). There were fewer sudden deaths in the metoprolol CR/XL group than in the placebo group (79 vs 132, 0.59 [0.45-0.78]; p=0.0002) and deaths from worsening heart failure (30 vs 58, 0.51 [0.33-0.79]; p=0.0023).

INTERPRETATION: Metoprolol CR/XL once daily in addition to optimum standard therapy improved survival. The drug was well tolerated.