
**BACKGROUND:** The beneficial effects of β-blockers on long-term outcome after acute myocardial infarction were shown before the introduction of thrombolysis and angiotensin-converting-enzyme (ACE) inhibitors. Generally, the patients recruited to these trials were at low risk: few had heart failure, and none had measurements of left-ventricular function taken. We investigated the long-term efficacy of carvedilol on morbidity and mortality in patients with left-ventricular dysfunction after acute myocardial infarction treated according to current evidence-based practice.

**METHODS:** In a multicentre, randomized, placebo-controlled trial, 1959 patients with a proven acute myocardial infarction and a left-ventricular ejection fraction of <40% were randomly assigned 6-25 mg carvedilol (n=975) or placebo (n=984). Study medication was progressively increased to a maximum of 25 mg twice daily during the next 4-6 weeks, and patients were followed up until the requisite number of primary endpoints had occurred. The primary endpoint was all-cause mortality or hospital admission for cardiovascular problems. Analysis was by intention to treat.

**FINDINGS:** Although there was no difference between the carvedilol and placebo groups in the number of patients with the primary endpoint (340 [35%] vs 367 [37%], hazard ration 0.92 [95%CI 0.80-1.07]), all-cause mortality alone was lower in the carvedilol group than in the placebo group (116 [12%] vs 151 [15%], 0.77 [0.60-0.98], p=0.03). Cardiovascular mortality, non-fatal myocardial infarctions, and all-cause mortality or non-fatal myocardial infarction were also lower on carvedilol than on placebo.

**INTERPRETATION:** In patients treated long-term after an acute myocardial infarction complicated by left-ventricular systolic dysfunction, carvedilol reduced the frequency of all-cause and cardiovascular mortality, and recurrent, non-fatal myocardial infarctions. These beneficial effects are additional to those of evidence-based treatments for acute myocardial infarction including ACE inhibitors.