Several small studies have suggested beneficial effects of long-term beta-blocker treatment in idiopathic dilated cardiomyopathy. Our large multicentre study aimed to find out whether metoprolol improves overall survival and morbidity in this disorder. 383 subjects with heart failure from idiopathic dilated cardiomyopathy (ejection fraction < 0.40) were randomly assigned placebo or metoprolol. 94% were in New York Heart Association functional classes II and III, and 80% were receiving background treatment. A test dose of metoprolol (5 mg twice daily) was given for 2-7 days; those tolerating this dose (96%) entered randomisation. Study medication was increased slowly from 10 mg to 100-150 mg daily. There were 34% (95% CI -6 to 62%, p = 0.058) fewer primary endpoints in the metoprolol than the placebo group; 2 and 19 patients, respectively, deteriorated to the point of needing transplantation and 23 and 19 died. The change in ejection fraction from baseline to 12 months was significantly greater with metoprolol than with placebo (0.13 vs 0.06, p < 0.0001). Pulmonary capillary wedge pressure decreased more from baseline to 12 months with metoprolol than with placebo (5 vs 2 mm Hg, p = 0.06). Exercise time at 12 months was significantly greater (p = 0.046) in metoprolol-treated than in placebo-treated patients. In patients with idiopathic dilated cardiomyopathy, treatment with metoprolol prevented clinical deterioration, improved symptoms and cardiac function, and was well tolerated.