The SOLVD Investigators. Effect of enalapril on mortality and the development of heart failure in asymptomatic patients with reduced left ventricular ejection fractions. 

BACKGROUND: It is not known whether the treatment of patients with asymptomatic left ventricular dysfunction reduces mortality and morbidity. We studied the effect of an angiotensin-converting--enzyme inhibitor, enalapril, on total mortality and mortality from cardiovascular causes, the development of heart failure, and hospitalization for heart failure among patients with ejection fractions of 0.35 or less who were not receiving drug treatment for heart failure.

METHODS: Patients were randomly assigned to receive either placebo (n = 2117) or enalapril (n = 2111) at doses of 2.5 to 20 mg per day in a double-blind trial. Follow-up averaged 37.4 months. RESULTS. There were 334 deaths in the placebo group, as compared with 313 in the enalapril group (reduction in risk, 8 percent by the log-rank test; 95 percent confidence interval, -8 percent [an increase of 8 percent] to 21 percent; P = 0.30). The reduction in mortality from cardiovascular causes was larger but was not statistically significant (298 deaths in the placebo group vs. 265 in the enalapril group; risk reduction, 12 percent; 95 percent confidence interval, -3 to 26 percent; P = 0.12). When we combined patients in whom heart failure developed and those who died, the total number of deaths and cases of heart failure was lower in the enalapril group than in the placebo group (630 vs. 818; risk reduction, 29 percent; 95 percent confidence interval, 21 to 36 percent; P less than 0.001). In addition, fewer patients given enalapril died or were hospitalized for heart failure (434 in the enalapril group; vs. 518 in the placebo group; risk reduction, 20 percent; 95 percent confidence interval, 9 to 30 percent; P less than 0.001).

CONCLUSIONS: The angiotensin-converting--enzyme inhibitor enalapril significantly reduced the incidence of heart failure and the rate of related hospitalizations, as compared with the rates in the group given placebo, among patients with asymptomatic left ventricular dysfunction. There was also a trend toward fewer deaths due to cardiovascular causes among the patients who received enalapril.