Worsening depression is associated with a doubling in the risk of cardiac-related hospitalization or death.

The significant increase in poor cardiovascular outcomes was seen regardless of any changes in the status of heart failure, suggesting that depression exerted the biggest influence on the increased risk, Andrew Sherwood, Ph.D., and his colleagues wrote (J. Am. Coll. Cardiol. 2011;57:418-23).

“Our findings support the recent American Heart Association position encouraging depression screening, and further suggest that it may be prudent for clinicians to reassess symptoms of depression routinely in heart failure patients who are at increased risk for adverse clinical outcomes and impaired quality of life,” wrote Dr. Sherwood of Duke University Medical Center, Durham, N.C., and his coauthors.

The prospective study examined a cohort of 204 outpatients with confirmed heart failure; 27 died during the first year and 30 were unavailable for follow-up. Therefore, 147 were followed for a mean of 5 years. At baseline, patients’ mean age was 57 years; 70% were men. Most had a New York Heart Association functional class of II (66%) or III (37%). The most common baseline medications were beta-blockers (88%) and ACE inhibitors (86%). Antidepressant use occurred in 20% of patients at baseline.

The study was unique among similar investigations because it assessed several clinical aspects of heart failure and depression at baseline and in each of the follow-up years. Heart failure assessments included plasma N-terminal pro-B-type natriuretic peptide (NT-proBNP; mean baseline measure 1,159 pg/mL) and left ventricular ejection fraction (LVEF; baseline mean 32%).

At baseline, the average score on the Beck Depression Inventory (BDI) was 10, a level considered clinically significant for depressive symptoms.

Patients who died during the first year had significantly higher resting heart rates, lower LVEFs, and higher NT-proBNP levels, and were less likely to be taking nitrates. Analysis showed that only NT-proBNP and LVEF were significantly associated with early death.

Among the group of 147 followed through 5 years, 127 (86%) either died or were hospitalized (53). Of the deaths, 40 were from cardiac conditions and 15 occurred before any hospitalization.

Significant risks for cardiac hospitalization or death included cardiac ischemia (hazard ratio 1.84), NT-proBNP increase of 1,000 pg/mL (HR 1.17), and hospitalization within the first year (HR 2.4).

Over the follow-up period, 65 patients (44%) showed a 2-point change or less in either direction from their baseline BDI score; 43 (29%) showed an increase of 3 or more points in the BDI and 39 (27%) showed a decrease of 3 or more points.

Compared with those whose BDI changed 2 or fewer points, those with a 3-point or greater increase were twice as likely to experience cardiac hospitalization or death (HR 2.12), a significant difference. Those whose BDI was 3 points lower than baseline (indicating improvement in depression) showed a proportional risk reduction, compared with those with a change of 2 points or less (HR 0.87), but this was not a significant association.

The extent of depression at baseline was significantly related to the risk of cardiovascular hospitalization or death, with a 6% increase in risk for every 1-point increase in BDI. The 5-year change in BDI was also significantly related to the poor cardiovascular outcomes, with a 7% increased risk for every 1-point increase in the scale.

The extent of depression at baseline also significantly increased the risk of all-cause hospitalization or mortality, with a 9% increase in risk for every 1-point increase in BDI. The 5-year change in BDI increased the risk of all-cause hospitalization or mortality by 6% for every 1-point increase in BDI.

The relationship between increasing depression and adverse outcome remained significant, even after controlling for the severity of heart failure.

The study was sponsored by the National Institutes of Health. Dr. Sherwood had no financial declarations, but a coauthor, Dr. Christopher O’Connor, also of Duke University, declared relationships with Amgen, Abbott, GE Healthcare, Amgen, Medpace, Roche, Actelion, Johnson & Johnson, Novella, and Trevena.