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Young Investigator Research Award Nominee

Abstract 8

Depression, Cardiovascular Symptom Reporting, and Functional Status in Heart Failure Patients

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**Background:** Depression is common among heart failure (HF) patients and can influence reporting of cardiovascular symptoms; depression may precipitate psychosomatic symptom reporting and worsen functional health status. This study examines the relationship between depression and cardiovascular symptoms through self-reports and objective measures.

**Methods:** Eighty-one patients (64 males; mean = 55.8 ± 11.2 years at baseline) with HF (ejection fraction ≤ 40) were examined at intake and again 3 months later. The Beck Depression Inventory (BDI) and the Kansas City Cardiomyopathy Questionnaire (KCCQ) as subjective measures along with the Six-Minute Walk Test (6MWT) as a measure of objective functional status were administered at both time points.

**Results:** Baseline BDI scores correlated negatively with nine of the 10 subscales of the KCCQ (physical limitation:  $r = -0.44$ ;

symptom frequency:  $r = -.52$ ; symptom burden:  $r = -0.50$ ; total symptoms:  $r = -0.53$ ; self-efficacy:  $r = -0.27$ ,  $P = .019$ ; quality of life:  $r = -0.72$ ; social limitation:  $r = -0.56$ ; clinical summary:  $r = -0.55$ ; overall summary:  $r = -0.67$ ; all  $P < .001$  unless noted) but was not related to symptom stability. Mean BDI scores significantly decreased from baseline (13.6 ± 10.5) to 3 months (9.2 ± 7.7) indicating less depressive symptoms over 3 months ( $P > .001$ ). In addition, changes in BDI scores and the KCCQ from baseline to 3 months were also negatively related to all KCCQ subscales ( $r$  range:  $-0.52$  to  $-0.32$ ,  $P < .05$ ) except for symptom stability. Increasing BDI scores were related to decreased 6MWT performance ( $r = -.33$ ,  $P = .024$ ); after controlling for age, gender, body mass index, current smoking status, diabetic status, and serum creatinine, only worsening BDI scores significantly predicted a decrease in distance walked on the 6MWT ( $\beta = -.38$ ,  $P = .017$ ; overall model  $R^2 = 0.18$ ,  $P = .039$ ) between baseline and 3-month follow-up.

**Conclusions:** In HF patients studied prospectively, depressive symptoms were related to poorer self-reported HF symptoms at baseline; over time, increases in depression were related to increased subjective symptom reporting and worsening functional status. These findings suggest that depression can negatively impact both subjective and objective health outcomes in HF patients; mechanisms of this association require further investigation.

The *Young Investigator Research Award* is a competition open to graduate students, postdoctoral fellows, residents, fellows, and junior faculty (within 2 years of their first appointment). It is made possible by the continued support of **Thomas F. Peterson, Jr.**, who also supports the Thomas F. Peterson, Jr. Center for Heart-Brain Research within the Earl and Doris Bakken Heart-Brain Institute at Cleveland Clinic. The 2010 recipient is **Kyoung Suk Lee, PhD**.