The Association of Mental Health Disorders with Heart Failure Outcomes and the Impact of Substance Abuse

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Introduction

Depression is associated with adverse heart failure (HF) outcomes. Substance abuse disorders often co-occur with depression and other psychiatric disorders. It is unclear if associations of psychiatric disorders with HF outcomes are confounded, mediated or enhanced by substance abuse.

Methods

Medical records and diagnosis codes of HF patients with reduced ejection fraction at UC San Diego between 2005 and 2016 were reviewed. Outcomes were total number of HF admissions, time to HF readmission, and total mortality. Associations of mood and anxiety disorders were assessed using hierarchical negative binomial regression and cox regression models adjusting for demographics, substance abuse, and medical co-morbidities. Effect modification by substance abuse was assessed using multiplicative interaction terms.

Results

Of 4529 patients (mean age 61.5 years, 69% male) included, 722 (16%) had an anxiety disorder and 222 (4.9%) had a mood disorder. Methamphetamine (6.6 %) and opioid (6.0%) abuse were common. Over a median follow up of 3.8 years (9999 HF admissions and 901 deaths), both anxiety and mood disorders were associated with total HF admissions and HF readmission; this was not attenuated by adjustment for substance abuse (Table). Further adjustment for medical co-morbidities weakened the associations modestly. These associations did not vary significantly by the abuse of any substance. Anxiety and mood disorders were associated with mortality only in patients with certain substance abuse disorders.

Conclusions

Anxiety and mood disorders are associated with adverse HF outcomes. Their associations are independent of and do not vary with substance abuse, however some substances appear to enhance the associations with total mortality. These results suggest that greater recognition and treatment of psychiatric disorders in HF patients, including in those with co-morbid substance abuse disorders, may improve clinical outcomes.