UC Irvine

UC Irvine Previously Published Works

Title

Are norepinephrine levels at baseline related to depression levels at 12 months?

Permalink

<https://escholarship.org/uc/item/9rp3r2b4>

Journal

Journal of Cardiac Failure, 10(4)

ISSN

1071-9164

Authors

Westlake, Cheryl A
Evangelista, Lorraine S
Doering, Lynn
et al.

Publication Date

2004-08-01

DOI

10.1016/j.cardfail.2004.06.012

Copyright Information

This work is made available under the terms of a Creative Commons Attribution License, available at <https://creativecommons.org/licenses/by/4.0/>

Peer reviewed

Are Norepinephrine Levels at Baseline Related to Depression Levels at 12 Months?

Cheryl A. Westlake,¹ Lorraine S. Evangelista,² Lynn Doering,² Kathleen A. Dracup³;
¹Nursing, California State University, Fullerton, CA; ²Nursing, University of California, Los Angeles, CA; ³Nursing, University of California, San Francisco, CA

Background: Depression has been identified as an important predictor of mortality in patients with advanced heart failure. We hypothesized that patients with increased severity of disease as measured by increased serum norepinephrine levels and reduced functional status as measured by decreased six minute walk distance would be more severely depressed at one year. In addition, we sought to identify the role of other potential predictors of depression, namely, demographic factors (age and employment status) and baseline psychological variables (depression and neuroticism). **Methods:** Data were collected at baseline and 12 months from 52 patients with symptoms of heart failure and an ejection fraction $\leq 40\%$. Baseline assessment included age, employment status, six-minute walk distance, norepinephrine levels, depression (Beck Depression Inventory), and neuroticism (Eysenck Personality Inventory). **Results:** On average, patients were 53.04 (± 13.2) years old. The majority were male ($n = 36$, 69.2%) and unemployed ($n = 36$, 69.2%). On average, patients demonstrated a six minute walk distance of 1348.4 ± 222.4 feet and had an ejection fraction of $26.1 (\pm 6.9)\%$. Levels of norepinephrine were moderate (688.8 ± 337.4), while depression was mild (9.8 ± 7.0), and neuroticism was low (-0.8 ± 3.9). Thirty-six (69.2%) patients were receiving beta-blocker therapy. At 12 months, patients reported mild levels of depression (9.9 ± 7.8). Age ($r^2 = -0.30$; $p = 0.03$), employment status ($r^2 = 0.47$; $p < 0.01$), baseline depression ($r^2 = 0.49$; $p < 0.01$), and baseline neuroticism ($r^2 = 0.29$; $p < 0.01$) were related to depression at 12 months. There was no relationship between serum norepinephrine levels or functional status and depression. In a stepwise linear regression, age, employment status, baseline depression and neuroticism accounted for 8.8%, 31.9%, 46.8%, and 46.9% of the variance in depression at 12 months, respectively. **Conclusion:** Although intriguing as measures of illness severity, serum norepinephrine and functional status do not appear to be related to self-reported depression at one-year. However, younger age, unemployment, and baseline depression and neuroticism accounted for almost half the variance in depression at 12 months. These findings can assist clinicians to identify patients at risk for depression.

Stepwise Linear Regression

Variable	R ²	F	p
Age	0.088	4.81	0.033
Employment	0.319	11.47	<0.001
Baseline Depression	0.468	14.10	<0.001
Baseline Nueroticism	0.469	10.37	<0.001