A Practical Strategy to Screen Cardiac Patients for Depression

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Presenter Disclosure Information

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BECKA WILL MAKE AN APPOINTMENT FOR YOU WITH A CARDIOLOGIST!

DO YOU THINK I DAMAGED MY HEART, DOC?

I DOUBT IT, BUT WE'RE GOING TO FIND OUT FOR SURE!

ONE LAST THING, JACK... LET'S TALK A LITTLE ABOUT DEPRESSION!
Depression

• Affects 16-35% of patients with CVD
• Mortality associated with post-MI depression is $\geq$ than any medical predictor of risk
• Seldom diagnosed and rarely treated in cardiac patients
• Failure to recognize is a failure to provide the best care for our patients

Rumsfeld JS. *Circulation*. 2005; 111:250-253
What is Major Depression?

For at least 2 weeks:

1) Depressed mood most of the day and/or
2) Markedly diminished interest or pleasure
3) 3-4+ of the following:
   • Sleep disturbance
   • Fatigue nearly every day
   • Feelings of worthlessness or guilt
   • Decreased concentration
   • Significant weight loss/gain
   • Psychomotor agitation/retardation
   • Suicidal ideation

American Psychiatric Association, 1994
Impact of Depression Post-MI

6-Month Mortality:
- 17% depressed vs. 3% nondepressed
- Univariate hazard ratio of depression: 5.7 (4.6-6.9)

Frasure-Smith N. JAMA 1993; 270:1819
Impact of Depression Post-MI

Cumulative probability of survival

$P = 0.0001$

No. without depression: No. with depression

0 1 2 3 4 5 6 7 8 9

Years of follow-up

0 0.5 1

0.5 0.6 0.7 0.8 0.9 1

Depression score <40

Depression score ≥40

Impact of Depression Post-MI

Mortality Following MI (N=896):

Lesperance F. Circulation 2002; 105:1049-53
Impact of Depression on CHF

12-Month Mortality

No Depression
Mild Depression
Major Depression
(vs. No Depression
Adj. RR: 1.4; (1.03-2.01)

Jiang W. Arch Intern Med 2001; 161:1849-56
Impact of Peri-CABG Depression

- 16-47% pre/post-operative prevalence
- 50% symptomatic up to 3 years later
- Associated with higher rates of hospital readmission, cardiac events, and death
How Depression May Affect CAD

Depression

Behavioral Risk Factors
- Smoking
- Alcohol
- Medical Adherence
- Physical Activity

Physiological Risk Factors
- Platelet Activity
- HPA Axis Dysregulation
- ANS Dysregulation
- Inflammation
- Traditional Risk Factors
  - Diabetes
  - Obesity
  - Hypertension

Clinical Events
(e.g. AMI, sudden cardiac death, etc.)
Bypassing the Blues: A Study to Improve the Quality of Life Following Cardiac Bypass Surgery

R01 HL70000: 7/1/03-6/30/08

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University of Pittsburgh School of Medicine

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Professor of Psychiatry and Neuroscience
University of Pittsburgh School of Medicine

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Mercy Hospital Heart Inst.
V. Krishnaswami, M.D.

UPMC-Passavant
Bradley S. Taylor, M.D.

UPMC-Presbyterian
Peter J. Counihan, M.D.

UPMC-Shadyside
V.R. Machiraju, M.D.

VA Medical Center
Mark A. Wilson, M.D., Ph.D.

Westmoreland Regional
Mark M. Suzuki, M.D.

West Penn Allegheny Hospital
Michael H. Culig, M.D.
Objectives:

To examine if treating depression improves HRQoL and functional status, and decreases cardiovascular morbidity, depressive symptoms and health care costs s/p CABG;

To identify predictors for post-CABG depression;

To study the effect of depression and our intervention on subgroups defined by age, sex, race, and co-morbid illness.
Bypassing the Blues

Design: Randomized effectiveness study.
Setting: 8 Pittsburgh-area hospitals.
Patients: 300 Depressed (PHQ-9 ≥ 10) randomized to Inter. vs. “Usual Care” 2-weeks post-CABG; & 150 Non-depressed “control patients.”
Intervention: Phone-based collaborative care.
Follow-up: 8-44 months.
Bypassing the Blues

Study Design

PHQ-2
In-Patient Post-CABG Depression Screen

(-) screen

PHQ-9 Depression Screen 2 weeks after Hospital Discharge

PHQ-9 ≤ 4
Non-Depressed Control (N=150)

PHQ-9 > 4

(-) screen

PHQ-9 Depression Screen 2 weeks after Hospital Discharge

PHQ-9 ≤ 10
Ineligible

PHQ-9 ≥ 10

RANDOMIZE

(+) screen

"Usual Care" for Depression (N=150)

(+) screen

Stepped Collaborative Care for Depression (N=150)
Patient Health Questionnaire (PHQ-2)

In the *past two weeks*, have you had:

- Little interest or pleasure doing things?
- Feeling down, depressed, or hopeless?
# PHQ-2

## Major Depression

<table>
<thead>
<tr>
<th></th>
<th>Sensitivity</th>
<th>Specificity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Primary care patients</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Past 2 weeks, ≥1 vs. 0</td>
<td>98%</td>
<td>59%</td>
</tr>
<tr>
<td>Kroenke K. Med Care 2003; 41:1284-92</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cardiac patients</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Past month, ≥1 vs. 0</td>
<td>90%</td>
<td>69%</td>
</tr>
<tr>
<td>McManus D. Am J Cardiol 2005; 9:1076-81</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Signed HIPAA Consent
- 3388
- Not Approached
- 676

Approached
- 2712
- 83.0%

Consented to PHQ Screening
- 2195
- 80.9%

Completed PHQ Screening
- 2195
- 100.0%

Screen (+)
- Positive
- 1149
- 52.3%
- Protocol Eligible
- 1054
- 91.7%
- Refused Consent
- 10
- 0.9%
- Consented to Study
- 1044
- 99.1%

Screen (-)
- Negative
- 1045
- 47.6%
- Protocol Eligible
- 285
- 72.9%
- Refused Consent
- 1
- 0.1%
- Consented to Study
- 285
- 100.0%

Time Constraint/Discharge
- 377
- Deceased/Major Medical
- 56
- Other
- 243

Baseline Completion
- Pending
- 8
- Refused Screening
- 509

Sampled Out
- Not Interested
- 558
- 94
PHQ-9

II. Objective

1. PATIENT HEALTH QUESTIONNAIRE - 9

Over the last 2 weeks, how often have you been bothered by any of the following problems?

| A. Little interest or pleasure in doing things. | Not at all | Several days | More than half the days | Nearly every day |
| B. Feeling down, depressed, or hopeless. |       |              |                        |               |
| C. Trouble falling or staying asleep, or sleeping too much. |       |              |                        |               |
| D. Feeling tired or having little energy. |       |              |                        |               |
| E. Poor appetite or overeating. |       |              |                        |               |
| F. Feeling bad about yourself - or that you are a failure or have let yourself or your family down. |       |              |                        |               |
| G. Trouble concentrating on things, such as reading the newspaper or watching television. |       |              |                        |               |
| H. Moving or speaking so slowly that other people could have noticed? Or the opposite - being so fidgety or restless that you have been moving around a lot more than usual. |       |              |                        |               |
| I. Thoughts that you would be better off dead or of hurting yourself in some way. |       |              |                        |               |

PHQ Score: [ ]
Calculate PHQ Score

Go to Meds

# PHQ-9
## Major Depression

<table>
<thead>
<tr>
<th></th>
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<th>Specificity</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Primary care patients</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Past 2 weeks, ≥10 vs. &lt;10</td>
<td>88%</td>
<td>88%</td>
</tr>
<tr>
<td>Kroenke K. J Gen Intern Med 2001;16:606-613</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Cardiac patients</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Past 2 weeks, ≥10 vs. &lt;10</td>
<td>54%</td>
<td>90%</td>
</tr>
<tr>
<td>McManus D. Am J Cardiol 2005; 9:1076-81</td>
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</tbody>
</table>
## Baseline Sociodemographics

<table>
<thead>
<tr>
<th></th>
<th>Trial N=231</th>
<th>Control N=142</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Age (SD)</strong></td>
<td>63.7 (10.8)</td>
<td>66.2 (9.8)</td>
<td>.02</td>
</tr>
<tr>
<td><strong>Male</strong></td>
<td>59%</td>
<td>63%</td>
<td>.52</td>
</tr>
<tr>
<td><strong>Caucasian</strong></td>
<td>91%</td>
<td>82%</td>
<td>.07</td>
</tr>
<tr>
<td><strong>Marital status</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>8%</td>
<td>8%</td>
<td>.82</td>
</tr>
<tr>
<td>Married</td>
<td>66%</td>
<td>69%</td>
<td></td>
</tr>
<tr>
<td>Sep/Div/Widowed</td>
<td>26%</td>
<td>23%</td>
<td></td>
</tr>
<tr>
<td><strong>Working</strong></td>
<td>37%</td>
<td>42%</td>
<td>.33</td>
</tr>
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</table>
## Clinical Characteristics

<table>
<thead>
<tr>
<th></th>
<th>Trial N=231</th>
<th>Control N=142</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hypertension</td>
<td>82%</td>
<td>79%</td>
<td>.48</td>
</tr>
<tr>
<td>Diabetes</td>
<td>44%</td>
<td>39%</td>
<td>.37</td>
</tr>
<tr>
<td>CHF</td>
<td>17%</td>
<td>19%</td>
<td>.53</td>
</tr>
<tr>
<td>Smoked, past year</td>
<td>28%</td>
<td>14%</td>
<td>.002</td>
</tr>
<tr>
<td>Hyperlipidemia</td>
<td>77%</td>
<td>71%</td>
<td>.17</td>
</tr>
<tr>
<td>MI, prior</td>
<td>42%</td>
<td>41%</td>
<td>.89</td>
</tr>
</tbody>
</table>
## Surgical Characteristics

<table>
<thead>
<tr>
<th></th>
<th>Trial N=231</th>
<th>Control N=142</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>CABG type:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Conventional</td>
<td>84%</td>
<td>80%</td>
<td>.65</td>
</tr>
<tr>
<td>Minimally invasive</td>
<td>3%</td>
<td>4%</td>
<td></td>
</tr>
<tr>
<td>Off-pump</td>
<td>13%</td>
<td>16%</td>
<td></td>
</tr>
<tr>
<td>CABG type:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>CABG</td>
<td>74%</td>
<td>77%</td>
<td>.05</td>
</tr>
<tr>
<td>CABG redo</td>
<td>8%</td>
<td>2%</td>
<td></td>
</tr>
<tr>
<td>CABG + procedure</td>
<td>18%</td>
<td>21%</td>
<td></td>
</tr>
<tr>
<td>Graft #, median</td>
<td>3</td>
<td>4</td>
<td>.63</td>
</tr>
<tr>
<td>Cross-clamp time,</td>
<td>71</td>
<td>69</td>
<td>.68</td>
</tr>
<tr>
<td>minutes, median</td>
<td></td>
<td></td>
<td></td>
</tr>
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</table>
## Baseline Mental Health

<table>
<thead>
<tr>
<th></th>
<th>Trial N=231</th>
<th>Control N=142</th>
<th>P</th>
</tr>
</thead>
<tbody>
<tr>
<td>PHQ-9 (SD)</td>
<td>13.7 (3.5)</td>
<td>1.8 (1.4)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>SF-36 MCS (SD)</td>
<td>42.9 (11.4)</td>
<td>61.5 (6.0)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>SF-36 PCS (SD)</td>
<td>30.3 (6.8)</td>
<td>37.4 (7.6)</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>Hx of Depression</td>
<td>41%</td>
<td>5%</td>
<td>&lt;.001</td>
</tr>
<tr>
<td>On SSRI/SNRI</td>
<td>20%</td>
<td>0%</td>
<td>&lt;.001</td>
</tr>
</tbody>
</table>
Why Bother to Screen and Treat Depressed Patients with CAD?

Pharmacologic treatment of depression may reduce cardiovascular morbidity.

Depression adversely impacts health-related quality of life and may lead to suicide.

Effective treatments are available that can be initiated by non-psychiatrists.
Depression:
To Screen or Not to Screen

American College of Cardiology and the American Heart Association guidelines recommend evaluation for symptoms of depression and consideration of treatment for patients with:

- Acute MI
- Chronic angina
- CABG surgery

Circulation 2005; 111:250-53
In the *past two weeks*, have you had:

- Little Interest or pleasure doing things?
- Feeling down, depressed, or hopeless?
Further Information


• www.depression-primarycare.org
  McArthur Foundation Initiative on Depression (toolkit, PHQ)