Mood Disorders in Patients and Caregivers after ICU

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I have no conflict of interest to declare
Overview

• Impact of Chronic stress
• Mood Disorders in Families
• Mood Disorders in Patients
• How to Meet Needs- a longitudinal approach
Case

- 28 yo woman 1 year post DLTx for CF
- Was on extended work leave planting trees and noncompliant with meds
- Severe rejection episode - unable to resolve
- Progressive hypoxemic respiratory failure/ MODS
- Family characterized as ‘Difficult’, “Unable to Cope”
- Family and partner counseled to withdraw active treatment
- Partner Suicidal and parents severely depressed
- No follow-up after patient died
Families are not difficult - they are sick too
Symptoms of posttraumatic stress disorder and exposure to traumatic stressors are related to brain structural volumes and behavioral measures of affective stimulus processing in police officers

Janet Louise Shucard a,c,*, Jennifer Cox b,c, David William Shucard a,c, Holly Fetter d, Charles Chung e, Deepa Ramasamy b,c, John Violanti f

Psychiatry Research: Neuroimaging 204 (2012) 25–31

• Higher re-experiencing scores on PTSD measures were associated with higher arousal ratings of negative pictures and reduced amygdala, thalamus and globus pallidus volumes.

• Chronic re-experiencing of traumatic events may result in structural changes associated with autonomic arousal and acquisition of conditioned fear
Stress-induced cardiomyopathy (Takotsubo) – broken heart and mind?

- Emotional stress
- Anxiety
- Epileptic seizure
- Subarachnoid hemorrhage
- Somatic stress
- Ischemic stroke
- Psychosis
- Depression/mania

Vascular Health and Risk Management
16 April 2013
<table>
<thead>
<tr>
<th>Somatic stressors</th>
<th>Emotional stressors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vigorous exercise</td>
<td>Grief (e.g., death or illness of a loved one)</td>
</tr>
<tr>
<td>Pheochromocytoma</td>
<td>Receiving bad news (e.g., being diagnosed with major illness, learning of a daughter’s divorce)</td>
</tr>
<tr>
<td>Subarachnoid hemorrhage</td>
<td>Fear</td>
</tr>
<tr>
<td>Seizure</td>
<td>Relationship conflicts</td>
</tr>
<tr>
<td>Postoperative pain</td>
<td>Public speaking</td>
</tr>
<tr>
<td>Hyperthyroidism</td>
<td>Financial problems</td>
</tr>
<tr>
<td>Alcohol/opiate withdrawal</td>
<td>Being bullied</td>
</tr>
<tr>
<td>Invasive medical procedures</td>
<td>Surprise party</td>
</tr>
<tr>
<td>Exacerbation of underlying noncardiac disease</td>
<td>Changing residence</td>
</tr>
<tr>
<td>Sexual intercourse</td>
<td>Involvement in accident</td>
</tr>
<tr>
<td>Administration of sympathomimetics</td>
<td></td>
</tr>
</tbody>
</table>
Table 3. Physical Health Status by Caregiving Status: Crude Death Rates and Adjusted Relative Risks of 4-Year Mortality*

<table>
<thead>
<tr>
<th>Disease State</th>
<th>Cell n</th>
<th>No. of Deaths</th>
<th>% of Crude Death Rate</th>
<th>Adjusted Relative Risk† (95% Confidence Interval)</th>
</tr>
</thead>
<tbody>
<tr>
<td>No disease</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spouse not disabled</td>
<td>140</td>
<td>5</td>
<td>3.6</td>
<td>(Referent)</td>
</tr>
<tr>
<td>Not helping disabled spouse</td>
<td>14</td>
<td>3</td>
<td>21.4</td>
<td>6.17 (1.47-25.98)†</td>
</tr>
<tr>
<td>Helping, no strain</td>
<td>53</td>
<td>2</td>
<td>3.6</td>
<td>0.92 (0.18-4.75)</td>
</tr>
<tr>
<td>Helping, reports strain</td>
<td>54</td>
<td>4</td>
<td>7.4</td>
<td>1.71 (0.46-6.41)</td>
</tr>
<tr>
<td>Subclinical disease</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spouse not disabled</td>
<td>182</td>
<td>19</td>
<td>10.4</td>
<td>2.62 (0.97-7.02)</td>
</tr>
<tr>
<td>Not helping disabled spouse</td>
<td>31</td>
<td>4</td>
<td>12.9</td>
<td>2.42 (0.64-9.17)</td>
</tr>
<tr>
<td>Helping, no strain</td>
<td>47</td>
<td>5</td>
<td>10.6</td>
<td>2.04 (0.58-7.13)</td>
</tr>
<tr>
<td>Helping, reports strain</td>
<td>76</td>
<td>11</td>
<td>14.5</td>
<td>3.14 (1.07-9.20)†</td>
</tr>
<tr>
<td>Prevalent disease</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Spouse not disabled</td>
<td>105</td>
<td>16</td>
<td>15.2</td>
<td>3.43 (1.25-9.41)†</td>
</tr>
<tr>
<td>Not helping disabled spouse</td>
<td>30</td>
<td>6</td>
<td>20.0</td>
<td>4.39 (1.33-14.52)†</td>
</tr>
<tr>
<td>Helping, no strain</td>
<td>38</td>
<td>12</td>
<td>31.6</td>
<td>4.81 (1.63-14.16)§</td>
</tr>
<tr>
<td>Helping, reports strain</td>
<td>49</td>
<td>16</td>
<td>32.7</td>
<td>7.25 (2.61-20.14)</td>
</tr>
</tbody>
</table>

*Ellipses indicate not applicable.
†From a Cox regression model including age, sex, race, education, and stressful life events. Cell dummy variables were created and tested against the no disease, spouse not disabled reference cell.
‡P<.05.
§P<.01.
||P<.001.
Caregiver Burden

Psychiatric illness in the next of kin of patients who die in the intensive care unit*

Mark D. Siegel, MD, FCCP; Earle Hayes, DO, MS; Lauren C. Vanderwerker, PhD; Diane B. Loseth, RN, MSN, APRN, BC-PCM; Holly G. Prigerson, PhD

CCM 2008; 36: 1722-1728

PTSD symptoms consistent with a moderate to major risk of PTSD were found in 33% of family members.

Azoulay et al. AJRCCM 2005; 17: 987-994
Jones et al. Int Care Med 2004; 30: 456-460

Caregiver depression risk was 34%, 31% and 23% at 2, 6, 12 months
Lifestyle disruption and employment reduction were common.
Compromised HRQOL similar to caregivers of stroke/dementia
Depressive symptomatology associated with depression in ARDS survivors

Cameron et al. Crit Care Med 2006;34:26-33
Informal Caregiver Burden among Survivors of Prolonged Mechanical Ventilation

David C. Van Pelt, Eric B. Milbrandt, Li Qin, Lisa A. Weissfeld, Armando J. Rotondi, Richard Schulz, Lakshmipathi Chelluri, Derek C. Angus, and Michael R. Pinsky

Lifestyle Disruption

Mean activity restriction scale score

- 2 months: p = 0.89
- 6 months: p = 0.04
- 12 months: p = 0.29

Stopped Working

% stopping work to provide care

- 2 months: p = 0.37
- 6 months: p = 0.06
- 12 months: p = 0.71

Caregivers reported lifestyle restrictions which remained high when patients never returned home or never recovered their preadmission functional status.
Family Response to Critical Illness: Post intensive Care Syndrome-family

- Demographic Risk Factors
  - Female gender, younger patient age
  - Lower educational level
  - Pre-existing mental health problems
- Level of Stress
  - Higher levels of stress increase risk
- ICU Staff Communication
  - Involvement in Decision-making - discordance with preferred role is a risk

Family response to critical illness: Postintensive care syndrome-family.
Caregiver Outcomes (Quantitative) Cameron et al.

Care-giving Impact Scale

Centre for Epidemiological Studies Depression Scale

Care-giving impact scale at 7 day, 3-months, 6-months and 12-months post ICU discharge

Centre for Epidemiological Studies Depression (CESD) at 7 day, 3-months, 6-months and 12-months post ICU discharge

≥16 considered at risk for symptoms of depression
Persecutory Delusions/PTSD

Depression

- Prevalence 17-43%
- May decrease or stay the same over time (Hopkins 2010; Adhikari 2011)
- Risks include: alcohol dependence, female gender, younger age, cognitive dysfunction, hypoglycemia, severity of illness measures, mean ICU benzodiazepine dose
- Associated with ability to return to work

Davydow et al. Psychosom Med 2008; 70:512-9
Adhikari et al. Chest 2011; 140: 1484-93
Brain Atrophy

Ischemic Changes

Suchyta et al. Brain Imaging and Behavior 4:22-34, 2010
Enrolment in a conservative fluid-management strategy was associated with cognitive impairment

Lower partial pressure of oxygen was associated with cognitive and psychiatric impairment

Hypoglycemia was associated with mood disorders
Post Traumatic Stress Disorder

- Prevalence 21-35%
- Risk factors include benzodiazepine exposure, delusional memory, female sex, younger age, physical restraint in the ICU, low serum cortisol, not receiving corticosteroids, Vent days, ICU LOS
- Endogenous personality traits: pessimism

Jones et al. Critical Care 2010; 14(5): R168
Myhren et al. Crit Care 2010; 14: R14
Davydow Crit Care 2010; 14: 125
Kapfhammer et al. Am J Psychiatry 2004; 161: 45-52
ICU SURVIVORS

≥ 1 week vented ICU patients

7 days post-ICU discharge:
FIM, 6 MWT, evaluation of medical stability

3 months post-ICU discharge:
FIM, 6 MWT, PFT, SF-36, BDI-II, IES, Costs/Resources

6, 12, and 24 months post-ICU discharge: FIM, 6 MWT, PFT, SF-36, BDI-II, IES, Costs/Resources

FAMILY CAREGIVERS

Family Caregivers for ≥ 1 week vented ICU patients

7 days post-ICU discharge:
CAS, CIS, CESD, PAS, SS, SF-36, Personal Gain & Mastery

3 months post-ICU discharge:
CAS, CIS, CESD, PAS, SS, SF-36, Personal Gain & Mastery

6, 12, and 24 months post-ICU discharge: CAS, CIS, CESD, PAS, SS, SF-36, Personal Gain & Mastery

Prospective qualitative needs assessment to determine ICU survivors’ and family caregivers education and support needs corresponding to the phases of the Timing it Right Framework.
Challenges and Opportunities

- Chronic stress is making the caregiver sick too
- Caregiving is a risk factor for mortality
- The family caregiver needs support from the moment of ICU admission and through all health care transitions
- They are at risk for complicated grief and need bereavement assistance
- Patients have severe mood disorders and some risk factors may be modifiable
- Need to elucidate mechanism and understand individual risk