Symptom Relief for Patients with Heart Failure

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Conflicts of Interest

None to disclose
Objectives

Review Palliative Care Domains

Review Symptom Burden and Treatment in Heart Failure

Palliative Care Domains

- Structure and Process of Care
- Physical Aspects of Care
- Psychological Aspects of Care
- Social Aspects of Care
- Cultural Aspects of Care
- Care of the Imminently Dying
- Ethical and Legal Aspects of Care

http://www.nationalconsensusproject.org/guideline.pdf
PAL-HF Study of the Effectiveness of Palliative Care in Advanced Heart Failure

Kansas City Cardiomyopathy Questionnaire

![Graph showing Kansas City Cardiomyopathy Questionnaire scores over time for Usual Care and Usual Care + Palliative Care. The graph shows a statistically significant difference (P = 0.030) between the two groups.]

Functional Assessment of Chronic Illness Therapy-Palliative Care Scores

![Graph showing Functional Assessment of Chronic Illness Therapy-Palliative Care scores over time for Usual Care and Usual Care + Palliative Care. The graph shows a statistically significant difference (P = 0.035) between the two groups.]


N = 150
American Heart Association

“Palliative care, defined as patient- and family-centered care that optimizes health-related quality of life by anticipating, preventing, and treating suffering, should be integrated into the care of all patients with advanced cardiovascular disease and stroke early in the disease trajectory.”

AHA/ASA POLICY STATEMENT

Palliative Care and Cardiovascular Disease and Stroke
A Policy Statement From the American Heart Association/American Stroke Association

Physical Aspects of Care

- Expeditious management of symptoms such as pain and shortness of breath
Goal Directed Therapy

- The BEST treatment for symptoms of end stage heart failure is impeccable heart failure treatment

- New evidence for SGLT-2 inhibitors reducing hospitalizations

- Diuretic management in the home

- Always manage fluid first!

Symptoms of End Stage Heart Failure

Similar to Cancer and End Stage AIDS

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Occurrence</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fatigue</td>
<td>69-82%</td>
</tr>
<tr>
<td>Dyspnea</td>
<td>60-88%</td>
</tr>
<tr>
<td>Pain</td>
<td>41-77%</td>
</tr>
<tr>
<td>Anxiety</td>
<td>49%</td>
</tr>
<tr>
<td>Insomnia</td>
<td>36-48%</td>
</tr>
<tr>
<td>Lack of Appetite</td>
<td>21-41%</td>
</tr>
<tr>
<td>Delirium</td>
<td>18-32%</td>
</tr>
<tr>
<td>Nausea</td>
<td>17-48%</td>
</tr>
<tr>
<td>Depression</td>
<td>10-60%</td>
</tr>
</tbody>
</table>
Dyspnea 60-86%

- Opioids for dyspnea
- Bind to peripheral opioid receptors in lung
- Bind to central opioid receptors in brain reducing respiratory drive and central perception of dyspnea
- It’s SAFE!


Physiology of Dyspnea

- Involved central, peripheral, and mechanical receptors
- Mismatch between central drive and mechanical feedback
  - Peripheral chemoreceptor mechanical fibers in the chest wall and lung are processed in the limbic system and sensory motor cortex of the brain
  - Very complex interaction that isn’t fully understood
Trigeminal Nerve in Dyspnea

- Thermal and mechanoreceptors on the face
- Air moving across the face triggers mechanoreceptors reducing central respiratory drive
- One of the easiest interventions for dyspnea is a fan to the face

Safety of Opioids for Dyspnea

- 682 patients with heart failure
  - 24.6% taking opioids on admission
  - 30 day readmission – Odds Ratio 1.24 CI (0.8-1.93)
  - 30 day mortality – HR 0.91 CI (0.47-1.78)
  - 90 day mortality – HR 0.95 CI (0.58-1.54)
- 28.3% taking opioids at discharge
  - 30 day readmission – Odds Ratio 1.1 CI (0.72-1.96)
  - 30 day mortality – HR 0.51 CI (0.24-1.06)
  - 90 day mortality – HR 0.67 CI (0.41-1.1)
**Pain 41-77%**

- Occasionally related to chronic angina
- Often related to comorbid conditions
  - Degenerative joint disease
  - Neuropathy
  - Claudication
- Often limited use of adjuvant therapies (NSAIDS, neuropathic agents) due to renal disease and cardiac concerns

**Fatigue 69-82%**

- Cardiac rehab has been proven to improve quality of life
  - Effective as individual or group session
- Recently also proven to be effective in treatment of fatigue for patients with LVADs
  - 26 patients with new LVADs
  - 18 visits – Improved KCCQ, leg strength, and total treadmill time


Psychological Aspects of Care

- Depression is a serious complication of heart failure
- Complex grief associated with loss of independence
- Prognostic uncertainty

- 42% of patients with NYHA Class IV heart failure

Physiologic Effects of Depression

- 2 fold increased risk of death with depressive symptoms RR 2.1 (CI 1.7 to 2.6)

<table>
<thead>
<tr>
<th>Study</th>
<th>Depression Measure</th>
<th>Duration</th>
<th>Sample Size</th>
<th>% Women</th>
<th>Outcome(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Abramson et al. (61)</td>
<td>CES-D</td>
<td>4.5 yrs</td>
<td>4,538</td>
<td>57</td>
<td>Incident HF</td>
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<tr>
<td>Williams et al. (44)</td>
<td>CES-D</td>
<td>14 yrs</td>
<td>2,501</td>
<td>58</td>
<td>Incident HF</td>
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<tr>
<td>Himelhoch et al. (62)</td>
<td>Medical records</td>
<td>1 yr</td>
<td>139,089</td>
<td>NA</td>
<td>Health service use, hospitalization</td>
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<tr>
<td>Sullivan et al. (15)</td>
<td>Medical records</td>
<td>3 yrs</td>
<td>1,098</td>
<td>53</td>
<td>Health care costs, clinical events</td>
</tr>
<tr>
<td>Fulop et al. (58)</td>
<td>SCID interview</td>
<td>6 months</td>
<td>203</td>
<td>53</td>
<td>Hospitalization</td>
</tr>
<tr>
<td>Koenig et al. (48)</td>
<td>DIS interview</td>
<td>1 yr</td>
<td>107</td>
<td>52</td>
<td>Hospitalization</td>
</tr>
<tr>
<td>Rumsfeld et al. (14)</td>
<td>MOS-D</td>
<td>6 weeks</td>
<td>466</td>
<td>24</td>
<td>Hospitalization</td>
</tr>
<tr>
<td>De Denus et al. (49)</td>
<td>Medical records</td>
<td>7.5 months</td>
<td>171</td>
<td>36</td>
<td>Clinical events</td>
</tr>
<tr>
<td>Faris et al. (50)</td>
<td>Medical records</td>
<td>4 yrs</td>
<td>396</td>
<td>26</td>
<td>Hospitalization, clinical events</td>
</tr>
<tr>
<td>Freedland et al. (60)</td>
<td>DIS interview</td>
<td>1 yr</td>
<td>60</td>
<td>57</td>
<td>Hospitalization, mortality</td>
</tr>
<tr>
<td>Jiang et al. (12)</td>
<td>DIS interview</td>
<td>1 yr</td>
<td>357</td>
<td>36</td>
<td>Hospitalization, clinical events</td>
</tr>
<tr>
<td>Junger et al. (13)</td>
<td>HADS-D</td>
<td>24 months</td>
<td>209</td>
<td>28</td>
<td>Clinical events</td>
</tr>
<tr>
<td>Murberg et al. (63)</td>
<td>Zung</td>
<td>2 yrs</td>
<td>119</td>
<td>29</td>
<td>Clinical events</td>
</tr>
<tr>
<td>Sullivan et al. (11)</td>
<td>PRIME-MD interview</td>
<td>3 yrs</td>
<td>142</td>
<td>23</td>
<td>Clinical events</td>
</tr>
<tr>
<td>Vaccarino et al. (38)</td>
<td>Geriatric depression</td>
<td>6 months</td>
<td>391</td>
<td>49</td>
<td>Clinical events</td>
</tr>
</tbody>
</table>

CES-D Center for Epidemiological Studies–Depression; DIS Diagnostic Interview Schedule; HADS-D Hospital Anxiety and Depression Scale; HF heart failure; MOS-D Medical Outcomes Study–Depression, NA not available; PRIME-MD Primary Care Evaluation of Mental Disorders; SCID Structured Clinical Interview for DSM-IV.

Physiologic Effects of Depression

- Increased IL-1, IL-6, TNF alpha

<table>
<thead>
<tr>
<th>Table 1. Pathophysiologic effects of inflammatory mediators</th>
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</thead>
<tbody>
<tr>
<td>LV dysfunction</td>
</tr>
<tr>
<td>Negative inotropic effect</td>
</tr>
<tr>
<td>Hypertrophy</td>
</tr>
<tr>
<td>Fibrosis</td>
</tr>
<tr>
<td>Apoptosis</td>
</tr>
<tr>
<td>Endothelial dysfunction</td>
</tr>
<tr>
<td>Cachexia</td>
</tr>
<tr>
<td>Anemia</td>
</tr>
<tr>
<td>Activation of fetal gene program</td>
</tr>
<tr>
<td>Promotion of thromboembolism</td>
</tr>
<tr>
<td>β - receptor uncoupling from adenylate cyclase</td>
</tr>
<tr>
<td>Abnormalities of mitochondrial energetics</td>
</tr>
<tr>
<td>Muscular weakness</td>
</tr>
</tbody>
</table>


- Depression reduction may be be primary role of interdisciplinary palliative care showing a reduction in mortality from heart failure.
  - Positive Coping
  - Reframing function and loss
  - Early referral to psychology
  - Use of SSRI/SNRI

- Consider gratitude journaling, reframing
Social Aspects of Care

- 675 families 10 months after death
  - 54% hospital
  - 11% nursing home
  - 30% home


- Bereaved family members of heart failure patients with non-sudden death reported minimal communication with physicians about what to expect.
- 52% were aware of prognosis
  - 82% "worked this out on their own" and were not told by a provider
- 39% died alone
Caregiver Burnout

- 5 million adults with heart failure
- Caregivers should be integral part of evaluation and management
- 25.7% of caregivers report major depression
  - 109 caregivers interviewed (Age 59, 89% spouse)
  - Functional status
  - Perceived control
  - Caregiver burden

Post Traumatic Stress Disorder in Heart Transplant Recipients and Primary Family Caregivers

- Objective: Determine rates of PTSD in patients and primary caregivers
- Study: 158 recipients and 142 caregivers surveyed
- Results:

<table>
<thead>
<tr>
<th>Total sample</th>
<th>Recipients</th>
<th>Caregivers</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$n = 158$</td>
<td>$n = 142$</td>
</tr>
<tr>
<td>Number meeting diagnostic criteria (definite)</td>
<td>17 (10.8%)</td>
<td>11 (7.7%)</td>
</tr>
<tr>
<td>Number of definite + probable cases</td>
<td>25 (15.8%)</td>
<td>28 (19.7%)</td>
</tr>
</tbody>
</table>
Post Traumatic Stress Disorder

- Exposure to a traumatic event that meets specific stipulations
- Symptoms from each of four symptom clusters:
  - intrusion
  - avoidance
  - negative alterations in cognitions and mood
  - alterations in arousal and reactivity

Stress and Coping in the Pre-transplant Period

- Objective: Describe perceived stress while awaiting cardiac transplant
- Study: 38 family members interviewed
- Results: Stress Levels
  - 10% Severe; 53% Moderate; 47% Mild Stress
- Coping:
  - Knowing our family has the strength to solve our problems
  - Facing problems head-on
  - Seeking support from friends

Nolan MT, Cupples SA, Brown MM, Pierce L, Lepley D, Ohler L
Department of Nursing, Johns Hopkins Hospital, Baltimore, MD 21205.
Perceived Stress and coping during the organ waiting periods

Common Stressors:
- Requiring a heart transplant
- Having terminal heart disease
- Worrying about family members

Helpful Coping Skills:
- Thinking positively
- Using humor
- Trying to keep life as normal as possible