Symptom Relief for Patients with Heart Failure

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Conflicts of Interest

None to disclose

Objectives

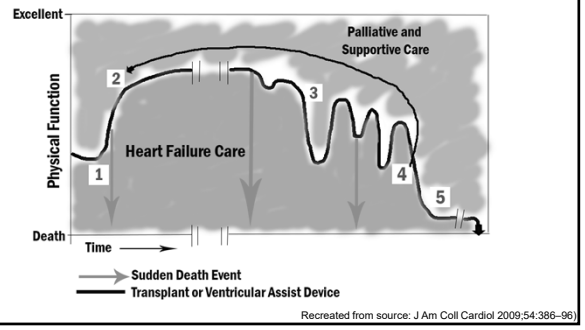
Review Palliative Care Domains

Review Symptom Burden and Treatment in Heart Failure

Palliative Care Domains

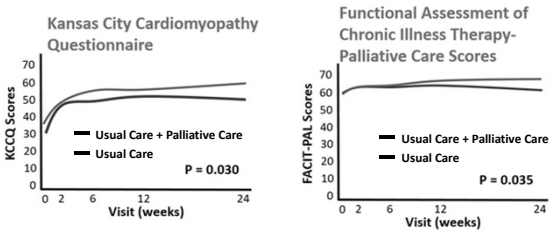
- Structure and Process of Care
- Physical Aspects of Care
- Psychological Aspects of Care
- Social Aspects of Care
- Cultural Aspects of Care
- Care of the Imminently Dying
- Ethical and Legal Aspects of Care

http://www.nationalconsensusproject.org/guideline.pdf



Recreated from source: J Am Coll Cardiol 2009;54:386–96)

PAL-HF Study of the Effectiveness of Palliative Care in Advanced Heart Failure



Rogers JG, et al. J Am Coll Cardiol. 2017; 70:331-41

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

	Symptoms in Heart Failure
Symptom	Occurrence
Fatigue	69-82%
Dyspnea	60-88%
Pain	41-77%
Anxiety	49%
Insomnia	36-48%
Lack of Appetite	21-41%
Delirium	18-32%
Nausea	17-48%
Depression	10-60%

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!

Mahler DA. Opioids for refractory dyspnea. Expert Rev Respir Med. 2013;7(2):123–34. quiz 135.Paper outlines the mechanism of action of opioids for dyspnea

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

Chest. 2010 Nov; 138(5): 1196–1201.
doi: 10.1378/chest.10-0534
PMCID: PMC2972628
PMID: 21051395

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)


Opioid Use in Patients with Congestive Heart Failure

Nancy L. Dawson, MD, Victoria Roth, David O. Hodge, MS, Emily R. Vargas, MPH, MS, M. Caroline Burton, MD

Pain Medicine, pna103, https://doi.org/10.1093/pm/pna103
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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

Papathanasiou J, et al. The effect of group-based cardiac rehabilitation models on the quality of life and exercise capacity of patients with chronic heart failure. Hell J Cardiol. 2017;1–4.

Kerrigan DJ, et al. Cardiac rehabilitation improves functional capacity and patient-reported health status in patients with continuous-flow left ventricular assist devices: the rehab-VAD randomized controlled trial. JACC Heart Fail. 2014;2(6):653–9.

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 3. A Description of HF Studies Reporting Relationships Between Depression and Clinical Outcomes

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

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.

Source: J Am Coll Cardiol. 2006 Oct 17;48(8):1527-37.doi: 10.1016/j.jacc.2006.06.055.

Physiologic Effects of Depression

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

Table 1. Pathophysiological effects of inflammatory mediators
LV dysfunction
Negative inotropic effect
Hypertrophy
Fibrosis
Apoptosis
Endothelial dysfunction
Cachexia
Anemia
Activation of fetal gene program
Promotion of thromboembolism
β - receptor uncoupling from adenylate cyclase
Abnormalities of mitochondrial energetics
Muscular weakness

Gullestad L, Ueland T, Vinge L, E, Finsen A, Yndestad A, Aukrust P: Inflammatory Cytokines in Heart Failure: Mediators and Markers. Cardiology 2012;122:23-35. doi: 10.1159/000338166

- 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

Mccarthy M, Hall JA, Ley M. Communication and choice in dying from heart disease. J R Soc Med. 1997;90:128 –131.

- Bereaved family members of heart failure patients with non-sudden death reported minimal report 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:

Total sample	Recipients $n = 158$	Caregivers $n = 142$
Number meeting diagnostic criteria (definite)	17 (10.8%)	11 (7.7%)
Number of definite + probable cases	25 (15.8%)	28 (19.7%)

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.
Heart & Lung : the Journal of Critical Care [1992, 21(6):540-547]

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