The Interface of Cardiology and Palliative Medicine

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May 3, 2013
Disclosure / Acknowledgements

No relevant financial conflicts to disclose.

Special thanks to Dr. Jill Kalman – my collaborator in all things heart failure related.
Learning Objectives

After attending this presentation, the learner will be able to:

• Better understand the trajectory of heart failure and how this relates to palliative care
• Describe barriers to palliative care consultation for patients with advanced heart disease
• Identify solutions for developing effective relationships between cardiology specialists and palliative care clinicians
Who gets hospice?

52 year old man with metastatic colon cancer s/p resection and 3 rounds of chemotherapy. He is now readmitted for decreased po intake, weakness, lethargy. He has lost 20 pounds and spends 50% of his day in bed.

52 year old man with HTN, DM, CABG x2 and hypercholesteremia. His EF < 30% and he has a prolonged QT interval on his EKG. Readmit for increasing SOB due to worsening HF, no precipitating factors. He complains of decreased po intake, weakness, lethargy. He has lost 20 pounds and spends 50% of his day in bed.
Options

Cancer Patient
- Clinical trial
- Hyperthermic Intraperitoneal Chemotherapy (Hipec)
- Hospice

Heart Failure Patient
- Heart Failure outpatient management program
- Investigational drugs / gene therapy
- High Risk CV surgery (ventricular reduction)
- BiV pacer
- Inotropes
- Mechanical Circulatory Support (MCS)
- Transplant
- Hospice
Why do we need a talk about Palliative Care and Heart Failure?

- Traditional models for palliative care focus on patients with cancer, but care for patients with heart failure requires a fundamentally different set of assumptions.
Palliative Care Concept of HF vs. HF Clinicians View of HF
Palliative Care Vision of Pall Care

Disease Modifying Therapy
curative or restorative intent

Life Closure

Diagnosis
Palliative Care
Hospice
Death & Bereavement
Trajectories of Fxn in Patients with Advanced Illness

(slid adapted from Joanne Lynn, MD, Rand Health/CMS)
The Heart Failure Clinician’s View of the Trajectory of Heart Disease

ACC/AHA Practice Guidelines

Pyramid Approach to HF Stages

HF Epidemiology and Treatments
Heart Failure
Epidemiology/Facts

- Prevalence: ~ 7 million in US (2.5%)
- Incidence: ~ 550,000/year
- Mortality: ~ 300,000/year
- Office visits: ~ 3.4 million (2004)
- Hospital discharges: ~ 1,000,000 (2001)
- Health care costs exceed $30 billion/year
- Single largest expense for Medicare
HF Prevalence Projections

Heart Failure Patients in US
millions

<table>
<thead>
<tr>
<th>Year</th>
<th>Patients</th>
</tr>
</thead>
<tbody>
<tr>
<td>1991</td>
<td>3.5</td>
</tr>
<tr>
<td>2000</td>
<td>4.7</td>
</tr>
<tr>
<td>2037*</td>
<td>10</td>
</tr>
</tbody>
</table>

Multivariable Models for Very Sick Patients Cannot Predict Time of Death Precisely (from SUPPORT)*

# HF Stratification for Mortality

## Seattle Heart Failure Score

**Baseline Characteristics**

<table>
<thead>
<tr>
<th>Clinical</th>
<th>Medications</th>
<th>Diuretics</th>
<th>Lab Data</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>✓ ACE-I</td>
<td>Furosemide</td>
<td>Hgb</td>
</tr>
<tr>
<td>Gender</td>
<td>Male</td>
<td>Bumetanide</td>
<td>Lymphocyte%</td>
</tr>
<tr>
<td>NYHA Class</td>
<td></td>
<td>Torsemide</td>
<td>Uric Acid</td>
</tr>
<tr>
<td>Weight (kg)</td>
<td></td>
<td>Metolazone</td>
<td>Total Chol</td>
</tr>
<tr>
<td>EF</td>
<td></td>
<td>HCTZ</td>
<td>Sodium</td>
</tr>
<tr>
<td>Syst BP</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**Interventions**

- ✓ ACE-I
- ARB
- Beta-blocker
- Statin
- Aldopurinol
- Aldosterone blocker

**Survival**

<table>
<thead>
<tr>
<th>1 year</th>
<th>2 year</th>
<th>5 year</th>
</tr>
</thead>
<tbody>
<tr>
<td>70%</td>
<td>49%</td>
<td>17%</td>
</tr>
<tr>
<td>30%</td>
<td>51%</td>
<td>83%</td>
</tr>
<tr>
<td>Mean life expectancy: 2.7 years</td>
<td></td>
<td></td>
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**Mortality**

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**Graph**

- Survival rate over 5 years.
- Mortality rate over 5 years.

**Devices**

- None
- BIV Pacer
- ICD
- BIV ICD
- QRS > 120 msec

**Note:** Some devices may be disabled if CMS clinical criteria are not met. See below.

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Re-hospitalization as Marker for Mortality

• British Columbia Cohort of 4,374 patients hospitalized for HF
• Mortality significantly increased after each HF hospitalization. Number of HF hospitalizations was a strong predictor of all-cause death.
• Median survival after the first, second, third, and fourth hospitalization was 2.4, 1.4, 1.0, and 0.6 years.

Treatments by HF Stage

Stage A
High risk with no symptoms

Stage B
Structural heart disease, no symptoms

Stage C
Structural disease, previous or current symptoms

Stage D
Refractory symptoms requiring special intervention

- Hospice
- VAD, transplantation
- Inotropes
- Aldosterone antagonist, nesiritide
- Consider multidisciplinary team
- Revascularization, mitral-valve surgery
- Cardiac resynchronization if bundle-branch block present
- Dietary sodium restriction, diuretics, and digoxin
- ACE inhibitors and beta-blockers in all patients
- ACE inhibitors or ARBs in all patients; beta-blockers in selected patients
- Treat hypertension, diabetes, dyslipidemia; ACE inhibitors or ARBs in some patients
- Risk-factor reduction, patient and family education

Technology and HF

• Rapid advancements in technology alter the trajectory of patients with end stage heart failure
• Rethink the role of these devices
  • In terms of benefit burden analysis when patients approach the end of life
  • Ways they can enhance and improve quality of life
What is an ICD?

An ICD is an implanted electronic device that continuously monitors heart rhythm and can deliver rapid electrical pulses to terminate an arrhythmia.

ICDs save lives.
What is CRT?

CRT (Cardiac Resynchronization Therapy) re-coordinates the beating of the two ventricles by pacing both simultaneously. This increases heart’s efficiency with each beat and reduces cardiac workload.

CRT saves lives and improves quality of life.
What is an LVAD (MCS)?

VADs save lives and improve quality of life.

Taken from: http://www.bonsecoursgoodsharing.org/mission-values/patients/lvad/.

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Role of Palliative Care in Patients with Heart Failure
Heart Failure and Palliative Care

- Symptomatic HF confers a worse prognosis than cancer, with 1-year mortality near 45%
- Less than 10% of patients with HF receive pall care services; as of 2007, less than 12% of hospice admissions were patients with HF
- Pain, dyspnea, fatigue, cachexia, anorexia, bloating, depression, anxiety, and insomnia are all common symptoms
  - Heart failure is NOT just a disease of the heart

Goodlin S. *J Am Coll Cardiol.* 2009;54:386-396
What is the evidence for palliative care improving outcomes?

• Studies of comprehensive outpatient case management demonstrate some reduction of hospitalizations and ED use
  

• Little data demonstrating PC improves outcomes in HF patients
  
  One RCT of PC for Hospitalized patients – 50% HF – no change in symptoms of perceived quality of care  
Early Palliative Care for Patients with Metastatic Non–Small-Cell Lung Cancer


Aug 19 2010;363(8):733-42.
Hospice for HF Prolongs Survival

Using 5% Medicare file – 83 Hospice patients and 457 non-hospice patients - 402 vs. 321 days, \( P = 0.05 \)

Despite lack of evidence, guidelines promote PC for HF

American College of Cardiology Guidelines for Treatment of HF

“Patient and family education about options for formulating and implementing advance directives and the role of palliative and hospice care services with reevaluation for changing clinical status is recommended for patients with HF at the end of life.”

Despite lack of evidence, guidelines promote PC for HF

HRS Expert Consensus Statement on the Management of Cardiovascular Implantable Electronic Devices (CIEDs) in Patients Nearing End of Life or Requesting Withdrawal of Therapy

• “Communication about CIED deactivation is an ongoing process that starts prior to implant and continues over time as patient's health changes”

• Referral to palliative care occurs at the time of “progression of cardiac disease, including repeated hospitalizations for heart failure and/or arrhythmias”

Heart Rhythm 2010; 7(7) 1008-1026.
Despite lack of evidence, guidelines promote PC for HF

AHA Scientific Statement

Decision Making in Advanced Heart Failure

A Scientific Statement From the American Heart Association

Endorsed by Heart Failure Society of America, American Association of Heart Failure Nurses, and Society for Medical Decision Making

Larry A. Allen, MD, MHS, Co-Chair; Lynne W. Stevenson, MD, Co-Chair; Kathleen L. Grady, PhD, APN, FAHA, Co-Chair; Nathan E. Goldstein, MD; Daniel D. Matlock, MD, MPH; Robert M. Arnold, MD; Nancy R. Cook, ScD; G. Michael Felker, MD, MHS; Gary S. Francis, MD, FAHA; Paul J. Hauptman, MD; Edward P. Havranek, MD; Harlan M. Krumholz, MD, SM, FAHA; Donna Mancini, MD; Barbara Riegel, DNSc, RN, FAHA; John A. Spertus, MD, MPH, FAHA; on behalf of the American Heart Association Council on Quality of Care and Outcomes Research, Council on Cardiovascular Nursing, Council on Clinical Cardiology, Council on Cardiovascular Radiology and Intervention, and Council on Cardiovascular Surgery and Anesthesia

Despite lack of evidence, guidelines promote PC for HF

Review Articles Outlining Role of PC in HF


Ways to Better Integrate Palliative Care into Care of Patients with Advanced Heart Failure
Reaching out to HF Patients, Families, and Clinicians

• First step is to acknowledge this complexity

• Depending on the patient, “cure” (transplant) or “stabilization” (LVAD) may be right around the corner

• Different model than cancer trajectory
Goals of Palliative Care Consult

• Goal of consults is not to force acceptance that patient is at EOL (not on pt, family, or clinicians)

• Instead to help patients / families understand complex trajectory

• Clarify goals, review over time (assist—not take over-conversations)
Goals of Palliative Care Consult

- Support the plan of the primary cardiologist in helping improve/maintain quality of life until either advanced therapy or end of patient’s life

- Role of device therapies makes conversations more complicated

- Assure symptom control at all times
Who is the “right” HF patient to refer to Palliative Care?

- Multiple admissions
- Uncontrolled symptoms, despite maximal treatment of disease
- Complex home/social situation such that discharge isn’t safe
- Patient/family don’t seem to “get it”
Summary

• Patients with heart failure have significant palliative care needs
• HF isn’t like cancer – so we have to rethink the role of PC for HF patients
• State of the art treatment for patients with HF is rapidly changing, but the evidence for PC still lags

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