Approach to End-of-Life in Heart Failure

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The Burden of Advanced Heart Failure

- More than 5 million Americans have heart failure
- Yearly incidence estimated to be > 500,000
- The number of deaths due to heart failure (284,365) exceeds the deaths due to lung cancer, breast cancer, prostate cancer and HIV/AIDS combined (2004)
- Deaths due to heart failure increased by 28% from 1994 to 2004

Circulation. 2008;117:e25-e146
WWW.cdc.gov/uscs
Economic Impact of Heart Failure

- Yearly costs of heart failure was roughly $30 billions in 2006
- Average mean hospital stay length is 6 days
- > 1/3 of the patients admitted for > 5 days
- Nearly half of the hospitalizations of heart failure exceed Medicare diagnosis-related group reimbursement

Circulation.2006;113:285-e151
CVD Deaths vs. Cancer Deaths by Age (US)

Deaths in Thousands

Ages

<45 45-54 55-64 65-74 75-84 85+ Total

CVD Cancer

25 21 48 50 81 101 120 138 242 165 315 85 831 560

NCHS 2006
Severity of Heart Failure
Modes of Death

NYHA II
- CHF: 12%
- Other: 24%
- Sudden Death: 64%
  n = 103

NYHA III
- CHF: 26%
- Other: 15%
- Sudden Death: 59%
  n = 103

NYHA IV
- CHF: 33%
- Other: 11%
- Sudden Death: 56%
  n = 27

Stages of Heart Failure and Treatment Options

What Define End Stage Clinically?

- Intolerance of beta-blockers
- Intolerance of ACE-I / ARB’s
- Recurrent hospitalizations specially if on optimal medical therapies/CRT
- Inotropes use/dependant
- Hyponatremia
- Anemia
- Progressive renal insufficiency
- BUN > 40
- SBP < 110
- BNP or NT-proBNP >5 X normal
Stage D Heart Failure

- Refractory symptoms despite optimal medical and device therapy
- 5% of patients with heart failure*
- Eend stage heart failure has one of the largest effects on QOL of any advanced disease
- Palliative care relieves symptoms, improves patient satisfaction and decreases the costs of care
- Recommended by ACC/AHA guidelines as A1**

* Costanzo et al, (ADHERE), Am Heart J. 2008

**Hunt et al, Circulation. 2005
Palliative Care Movement

- Started in mid 1970s as a grassroots community hospice movement aimed at caring for cancer patients in their homes
- Added to Medicare benefits in 1982
- > 50% of patients enrolled in hospice have cancer as primary diagnosis and only 12% has CV disease

*Fox e et al, JAMA. 1999*
Palliative Care

Non-hospice Care Model
- Aimed at improving QOL and supporting patients and the families of patients with serious chronic illnesses in whom prognosis is uncertain or may be measured in years
- Based on patient and family needs, independent of prognosis
- Life prolonging therapies are continued

Hospice Care Model
- Aimed to provide pain & suffering relief to terminal patients
- Based on patient prognosis
- Life prolonging therapies are d/c
Model for Palliative Care

Old concept

TREATMENT

Curative care
Palliative care

Death

Time

Better concept

Disease modifying or potentially curative
Supportive and palliative care
Bereavement care

Time

Communication in End-Stage Heart Failure

Not Doing a Good Job!

- 37 % of patients are aware of poor prognosis
- 8 % of patients and 44 % of family members were told by physician that the time is short
- 36 % of patients die alone

Early approach:

- Discuss advance directives
- Appoint healthcare proxy decision maker
- Discuss cardiopulmonary resuscitation options

Example of Effective Dialogue

“Some of my patients tell me that if they were permanently comatose or severely brain injured and unable to recognize or interact with loved ones, they would want care focused only on making sure they were comfortable. Other patients of mine tell me they would want all life-prolonging technologies, no matter how brain damaged they were. Which would you choose?”
The three main trajectories of decline at the end of life

- Cancer
- Organ failure
- Physical and cognitive frailty

The graph shows the decline in function over time for different conditions until death.
Impact of Palliative Care on Clinical Outcome

- Improve patient and family satisfaction with care and symptoms management *
- Patient who receive in-home palliative care are more likely to die at home which is consistent with the expressed wishes of most patients **
- Improves patient well-being and dignity (less burden on the their families).
- Addresses patient spiritual and emotional needs
- Provides better access to community support services ***


Impact of Palliative Care on Mortality?

- Comparing Hospice and Non-hospice Patient Survival Among Patients Who Die Within a Three-Year Window
- Retrospective analysis of Medicare beneficiaries
- Survival CHF:(402 vs. 321 days).

Impact of Palliative Care on Healthcare Costs

- Decrease the number of procedures or interventions performed near the end of life *
- Decrease the length of stay in inpatient wards **
- Decrease hospital indirect costs including pharmacy and imaging ***
- A study in 1995 showed that enrollment in hospice resulted in reduction in mean Medicare cost per heart failure patient from 53 K to 46 K +

* Field BE et al, *chest.* 1089
Mean direct costs per day for patients who died and who received palliative care consultation on hospital days 7, 10, and 15 compared with mean direct costs for usual care patients matched by propensity score

The palliative care patients had an adjusted net savings of $4908 in direct costs per admission ($P = .003$) and $374$ in direct costs per day ($P < .001$).

End-of-Life Care

- Medical therapy discontinuation: if it will improve QOL (BB, ACE I, ARB)
- Inotropes (dobutamine vs. Milrinone)
- ICD deactivation (discuss early, explain how ICD works, keep Brady therapy, keep CRT).

**VAD deactivation:**
- Challenging, group discussion (patient, family, CT surgeons, HF specialists, palliative care specialist)

→ best to establish advanced directives prior to implant that outline conditions under which he or she desires the device to be turned off
ACC/AHA Guidelines, 2009 focused update

End-of-Life Considerations
End-of-Life Considerations

Aggressive procedures performed within the final days of life (including intubation and implantation of a cardioverter-defibrillator in patients with NYHA functional class IV symptoms who are not anticipated to experience clinical improvement from available treatments) are not appropriate.
“No one wants to die. Even people who want to go to heaven don’t want to die to get there. And yet, death is the destination we all share. No one have ever escaped it, and that is how it should be, because death is the single best invention of life. It is life’s change agent. It clears out the old to make the new”
Thank You