THE PALLIATION OF HEART FAILURE AND STROKE – MEDICAL MANAGEMENT AND DECISION MAKING
Faculty: Jana Pilkey MD, FRCPC
Associate Professor, University of Manitoba
Palliative Care Physician Consultant, Winnipeg Regional Health Authority

Relationships with commercial interests:
► Not Applicable

Potential for conflict(s) of interest:
► Not Applicable
Mitigating Potential Bias

► All the recommendations involving clinical medicine are based on evidence that is accepted within the profession.
► All scientific research referred to, reported, or used is in the support or justification of patient care.
► Recommendations conform to the generally accepted standards.
► Independent content validation.
► The presentation will mitigate potential bias by ensuring that data and recommendations are presented in a fair and balanced way.
► Potential bias will be mitigated by presenting a full range of products that can be used in this therapeutic area.
► Information of the history, development, funding, and the sponsoring organizations of the disclosure presented will be discussed.
Objectives

► To develop an approach to the management of common symptoms at the end of life for heart failure and stroke patients.
► To learn how to initiate opioids for the management of dyspnea and pain at end of life.
► To develop an approach to the prognostication of end stage heart failure and stroke.
► To develop an approach to complicated end of life discussions such as obtaining a DNR, and the initiation or discontinuation of artificial feeding and hydration.
► To discuss ethical complexities for heart failure and stroke patients within the context of new end of life legislation.
Objective 1.

List strategies to deal with symptoms at end of life
Heart Failure is a growing epidemic

Heart Failure is on the rise in Canada.

600,000 Canadians are living with heart failure.

50,000 Canadians are diagnosed each year with heart failure.

1 in 2 Canadians has been touched by heart failure.

Heart failure costs more than $2.8 billion per year.

Heart Failure Costs Everyone

Heart Failure patients have long and frequent hospital stays.

There is no cure for heart failure.

Heart Failure patients are complex, often managing other conditions.

Heart Failure patients experience shortness of breath, exhaustion, and swelling.

Heart Failure caregivers are often overwhelmed and stressed.
Palliative Patients with Heart Failure

Table 4. Comparison of ACCF/AHA Stages of HF and NYHA Functional Classifications

<table>
<thead>
<tr>
<th>ACCF/AHA Stages of HF (37)</th>
<th>NYHA Functional Classification (38)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A At high risk for HF but without structural heart disease or symptoms of HF</td>
<td>None</td>
</tr>
<tr>
<td>B Structural heart disease but without signs or symptoms of HF</td>
<td>I No limitation of physical activity. Ordinary physical activity does not cause symptoms of HF.</td>
</tr>
<tr>
<td>C Structural heart disease with prior or current symptoms of HF</td>
<td>I No limitation of physical activity. Ordinary physical activity does not cause symptoms of HF.</td>
</tr>
<tr>
<td></td>
<td>II Slight limitation of physical activity. Comfortable at rest, but ordinary physical activity results in symptoms of HF.</td>
</tr>
<tr>
<td></td>
<td>III Marked limitation of physical activity. Comfortable at rest, but less than ordinary activity causes symptoms of HF.</td>
</tr>
<tr>
<td></td>
<td>IV Unable to carry on any physical activity without symptoms of HF, or symptoms of HF at rest.</td>
</tr>
<tr>
<td>D Refractory HF requiring specialized interventions</td>
<td>IV Unable to carry on any physical activity without symptoms of HF, or symptoms of HF at rest.</td>
</tr>
</tbody>
</table>

ACCF indicates American College of Cardiology Foundation; AHA, American Heart Association; HF, heart failure; and NYHA, New York Heart Association.
Symptoms of Advanced Heart Failure

- Shortness of breath
- Swelling of feet & legs
- Chronic lack of energy
- Difficulty sleeping at night due to breathing problems
- Swollen or tender abdomen with loss of appetite
- Cough with frothy sputum
- Increased urination at night
- Confusion and/or impaired memory
Terminal CHF

Severe symptoms in last 48-72 hrs

- (SUPPORT study Krumholtz, Circulation 1998)
  - Breathlessness 66%
  - Pain 41%
  - Severe confusion 15%

Regional Study of Care of the Dying study

- (Addington, Pall Med, 1995)
  - Dyspnea 50%
  - Pain 50%
  - Low mood 59%
  - Anxiety 45%
(Janssen, Pall Med, 2008)
Case Study 1.

Mrs. G. M.
- 87 y.o. inoperable critical aortic stenosis
- Previous angio & 2 stents placed, CABG x3 10 years ago.
- R sided chest pressure every few days - unpredictable
- Takes NTG 0.4mg sL - If no response calls 911.
- Dyspnea on mild exertion
- Feels faint if stands quickly
- In ER weekly with chest pain or dyspnea
Case Study 1.

O/E:
- hr 60, bp 140/110. S1 soft, Normal S2. 3/6 SEM best at base with rad to carotids
- Mild bilat periph edema
- ++ Crackles half way up lung fields, JVP 5 cm

Meds:
- Ramipril 10mg po od, Furosemide 40mg bid, Slow K, Tylenol #3, NTP 0.8mg/hr in day, NTG 0.4 mg SL prn. Hydralazine 5 mg po od, Simvastatin 20 mg od.
How Do We Improve Her Symptoms?

- 1. Increase furosemide
- 2. Increase antianginal medications
- 3. Stop all current medications and start morphine
- 4. Other
## Classic Pharmacologic Management

<table>
<thead>
<tr>
<th>Drug</th>
<th>NYHA 1</th>
<th>NYHA 2</th>
<th>NYHA 3</th>
<th>NYHA 4</th>
<th>Survival</th>
<th>Hospital Admits</th>
<th>Functional Status</th>
</tr>
</thead>
<tbody>
<tr>
<td>Diuretic</td>
<td>X</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td></td>
<td></td>
<td>↑ → ↓</td>
</tr>
<tr>
<td>ACE-I/ARB</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td></td>
<td>↑ ← ↓</td>
<td>↑</td>
</tr>
<tr>
<td>Spironolactone</td>
<td>X</td>
<td>X</td>
<td>√</td>
<td>√</td>
<td></td>
<td></td>
<td>↑ ← ↓</td>
</tr>
<tr>
<td>B-blocker</td>
<td>X</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td></td>
<td></td>
<td>↑ ← ↓</td>
</tr>
<tr>
<td>Digoxin</td>
<td>X</td>
<td>√</td>
<td>√</td>
<td>√</td>
<td></td>
<td></td>
<td>↓ → ↑</td>
</tr>
</tbody>
</table>
Objective 2.

Initiating Opioids in Heart Failure
Opioids in Heart Failure

- For pain and dyspnea
- **Morphine and Hydromorphone**
  - Metabolized by liver and excreted by kidneys
    - Toxic metabolites
    - Morphine 2.5-5 q6h, HM 0.5 – 1mg q6h
- **Fentanyl**
  - Cleared through liver
  - Patches very strong
  - If given subling or intranasal quick onset and lasts 1 hr – good for incident pain or dyspnea
Case Study 1 - Continued

- Started HM 0.5mg q6h and q1h prn
- Started fentanyl 50 mcg subling q15 min x 3
- Furosemide doubled for 3 days with clinical reassessment
  - (pt did not desire lab work)
- Care plan:
  - If chest pain or dyspnea – nitro and fentanyl
  - Then call palliative care nurse
  - She will continue to see her Family Dr. and Pall Care for f/u
Case Study 1 Continued

To Establish DNR and Goals of Care we need to:

1. Tell patient she likely has only months of life left
2. Tell patient there is nothing further we can offer
3. Explore hopes and fears for the future
4. Talk about trades offs she might need to make
5. 1, 3 and 4
End of Life Conversations

► Video here: How to Talk End-of-Life Care with a Dying Patient – Atul Gawande

► URL
https://www.youtube.com/watch?v=45b2QZxDd_o
Communication Starters

► “Many people think about what they might experience as things change and their heart disease/condition progresses.” (Normalize)
  ▪ “Have you thought about this?”
  ▪ Do you want me to talk about what changes are likely to happen?”
► “If you think about the last days of your life – what would you like them to look like?”
► Talking early allows patients to make own decisions
Objective 3.

Prognostication
Heart Failure Prognostication

► Very difficult!
► Markers of poor prognosis (< 6 months)
  ▪ Liver failure, renal failure, delirium
  ▪ ACE-I intolerable
  ▪ NYHA Class 4
  ▪ EF < 20%
  ▪ Frequent hospitalizations
  ▪ Cachexia

► Scoring systems may/may not help

(Hauptman, Arch Intern Med 2005; Ward, Heart 2002)
Terminal Trajectory

Figure 1: Schematic Depiction of Comprehensive Heart Failure Care

Figure illustration by Rob Flewell.

(Goodlin, J Am Coll Cardiol, 2009)
© Original Artist

THE STROKE OF MIDNIGHT
Case Study 2.

Mrs. L. 82 y.o. - large L ICH, intubated in ER
CT- intraventricular extension and midline shift
Moving L arm towards face, eyes closed, nonverbal
Family wants extubation and comfort care only
What symptoms should we expect?
1. Nothing in particular
2. Possible dyspnea
3. Possible restlessness
4. Possible upper airway congestion
5. Any or all of the above
## Symptoms in Dying Stroke Patients

### Table 2 Symptom prevalence in the 42 patients

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dyspnoea or dyspnoea behaviour(s)</td>
<td>34 (81)</td>
</tr>
<tr>
<td>Pain or pain behaviour(s)</td>
<td>29 (69)</td>
</tr>
<tr>
<td>Mouth dryness</td>
<td>26 (62)</td>
</tr>
<tr>
<td>Constipation</td>
<td>16 (38)</td>
</tr>
<tr>
<td>Anxiety, sadness</td>
<td>11 (26)</td>
</tr>
<tr>
<td>Delirium</td>
<td>6 (14)</td>
</tr>
<tr>
<td>Sleep disorders</td>
<td>5 (12)</td>
</tr>
<tr>
<td>Other symptoms</td>
<td>5 (12)</td>
</tr>
</tbody>
</table>

n, number of patients

(Mazzocato, Eur J Neuro, 2010)
## Palliating A Minimally Conscious Patient

<table>
<thead>
<tr>
<th>Medication Class</th>
<th>Symptoms Treated</th>
<th>Drugs and Starting Doses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Opioid</td>
<td>Pain and/or Dyspnea</td>
<td>Morphine 2.5 – 5 mg subcut q1h prn</td>
</tr>
<tr>
<td></td>
<td></td>
<td>OR</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Hydromorphone 0.5-1 mg subcut q1h prn</td>
</tr>
<tr>
<td></td>
<td></td>
<td>OR</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Haldol 1-2 mg subcut q4h prn</td>
</tr>
<tr>
<td>Neuroleptic</td>
<td>Delirium and/or Nausea</td>
<td>Methotrimeprazine 6.25-12.5mg subcut q4h prn</td>
</tr>
<tr>
<td></td>
<td></td>
<td>OR</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Haldol 1-2 mg subcut q4h prn</td>
</tr>
<tr>
<td>Benzodiazepine</td>
<td>Delirium and/or Dyspnea</td>
<td>Lorazepam 0.5-1mg subling q4h prn</td>
</tr>
<tr>
<td></td>
<td></td>
<td>OR</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Midazolam 2.5-5 mg subcut q4h prn</td>
</tr>
<tr>
<td>Anticholinergic</td>
<td>Upper Airway Secretions (Death Rattle)</td>
<td>Glycopyrrolate 0.2-0.4 mg subcut q2h prn</td>
</tr>
<tr>
<td></td>
<td></td>
<td>OR</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Scopolamine 0.3 -0.6mg subcut q1h prn</td>
</tr>
</tbody>
</table>
Case Study 2.

► Family wants to know how long she has.
► How long do you think she will live?
  ▪ 1. minutes to hours
  ▪ 2. hours to days
  ▪ 3. days to weeks
  ▪ 4. weeks to months
  ▪ 5. months to years

► Is there any way to help improve our prognostication?
Stroke Mortality

► ICH - 50% die within 28 days
► Risk of death a year after all stroke:
  ▪ 2x for patients over 70
  ▪ 20x for patients under 60
  (Ebrahim, 2001 and Hankey, Cerebrovasc Dis 2003)

► If stroke pt referred to palliative care:
  ▪ Median time for referral 3.6 days
  ▪ Median time to death 8.5 days
  (Blacquierere, C J Neuro Sci, 2009)
Prognostication Scores

- Prognostication scores may/may not help
- Patients do worse if:
  - Older
  - Larger bleed volume
  - More neurologic sequelae
  - Decreased level of consciousness
  - Bleed is infratentorial

Mechanically Ventilated Stroke Patients

Inpatient mortality 55% (48%-70%).
- 30-day mortality 58% (46%-75%)
- 1 -2 year mortality 68% (59%-80%)
(Holloway, JAMA, 2005, Holloway AHA 2014)

Survival post extubation:
- 25% die within an hour
- 69% die within 24 hours
- Median survival 7.5 hours
- Majority experience agonal/labored breathing following extubation
(Mayer, Neurology, 1999)
After Ventilator Withdrawal

- Dyspnea managed with opioids
- Opioids significantly decrease tachypnea
  - No change in SaO2, PaCO2 and pulse rate
  - No statistical association between escalating opioids post vent withdrawal and time of death

Live every day like it’s your last?  
Like I’m going to drag those machines all over the place ...
Objective 4.

End of Life Issues of Artificial Feeding and Substitute Decision Making
Case Study 3.

► Mr. H. L. 87 y.o. male with dementia
► Large MCA infarct
► Hemiplegia, sensory loss and worsened cognition.
► You wonder about starting tube feeds and call for a family meeting to discuss the issue
Case Study 3.

How to counsel about tube feeds?

1. It is unlikely to extend his life
2. We need to start the feeding right away
3. Tube feeding will prevent aspirating
4. We have a little time to make decisions
Tube Feeding in Stroke

► No survival difference if enteral feeds in 1st days or not
► No excess pneumonia in early tube feeding
► Small improved survival offset by excess of survivors with poor outcome and worse quality of life

► “Thus, early feeding may keep patients alive but in a severely disabled state when they would otherwise have died.”

(Donnan, Lancet, 2005)
Tube Feeds in Acute Stroke

- NG feeds - limited protection against aspiration
  - Occurs in 44% of acute stroke pts with NG’s
- Aspiration risk worse if:
  - Decreased consciousness
  - Severe facial palsy

(Dziewas, J Neurol Neurosurg Psychiatry. 2004)
Case Study 3

- Patient is started on feeds, gradually stabilizes
- He is sent to a long term care facility
  - dementia, stroke and poor functional status
- How does his survival with feeding tube compare to other nursing home residents with difficulty eating but without feeding tubes?
  - 1. It is better
  - 2. It is worse
  - 3. It is the same
Feeding Tube Insertion in Nursing Home Residents

Does Feeding Tube Insertion and Its Timing Improve Survival?

Joan M. Teno, M.D., M.S.¹, Pedro L. Gozalo, Ph.D.¹, Susan L. Mitchell, M.D., M.P.H.¹, Sylvia Kuo, Ph.D.¹, Ramona L. Rhodes, M.D., M.P.H.¹, Julia P.W. Bynum, M.D., M.P.H.¹, and Vincent Mor, Ph.D.¹
¹The Center for Gerontology and Health Care Research, The Warren Alpert School of Medicine of Brown University, Providence, RI
²Hebrew SeniorLife Institute for Aging Research, Boston, MA
³University of Texas Southwestern Medical Center, Dallas, TX
⁴The Dartmouth Institute at Dartmouth Medical School, Hanover, NH

Abstract

Background/Objectives—The objective of this study was to examine survival with and without a percutaneous endoscopic gastrostomy (PEG) feeding tube using rigorous methods to account for selection bias. A second objective was to examine whether the timing of feeding tube insertion affected survival.

Design—Prospective cohort study

Setting—All U.S. Nursing Homes

Participants—36,492 nursing home residents with advanced cognitive impairment from dementia and new problems eating, studied between 1999-2007.

Measurements—Survival following the development of the need for eating assistance and feeding tube insertion.

Results—Of the 36,492 nursing home (NH) residents (88.4% white, mean age 84.9, 87.4% with one feeding tube risk factor), 1,517 (4.4%) had a feeding tube inserted within 1 year of developing eating problems. After multivariate analysis correcting for selection bias with propensity score weights, no difference was found in the survival of the 2 groups (AHR 1.01, 95% CI 0.96-1.05).

Among residents who were tube-fed, the timing of PEG tube insertion relative to the onset of eating problems was not associated with improved survival post feeding tube insertion (AHR 1.01, 95% CI 0.98-1.04) comparing those persons with a PEG inserted within a month of developing an eating problem compared to later (4 months) insertion.

Corresponding Author: Joan M. Teno, M.D., M.S., 121 South Main Street, Providence, RI 02902, Tel.: 401-463-9827, Fax: 401-463-7102, Teno_Joan@Brown.edu.

Conflict of Interest

Dr. Teno, Gozalo, Kuo, and Mor are affiliated with the Warren Alpert School of Medicine at Brown University; Dr. Mitchell is affiliated with Hebrew SeniorLife Institute for Aging Research; Dr. Rhodes is affiliated with University of Texas Southwestern Medical Center; Dr. Bynum is affiliated with Harvard University; Dr. Mor is affiliated with Hebrew SeniorLife Institute for Aging Research. Dr. Teno holds grants from the Robert Wood Johnson Foundation, the National Institute on Aging, and the National Institute of nursing Research. None of these relationships pose a conflict of interest or potential conflict of interest.

Author Contributions

All authors contributed to data analysis and manuscript preparation.
Survival in Nursing Home Patients

Dementia patients (Alzheimer's, Vascular and Lewy Body) with severe cognitive impairment who needed “Assistance in Feeding”

(Teno, Am Ger Soc 2012)
Substituted Decision Making – Phrasing for Families

► “If he could come to the bedside as healthy as he was a year ago, and look at the situation for himself now, what would he tell us to do?”

Or

► “If you had in your pocket a note from him telling you that to do under these circumstances, what would it say?”
Helping Families Who Missed The Death

- Some family members will miss being present at the time of death
- Consider discussing the meaningfulness of their connection in thought & spirit vs. physical proximity
Objective 5.

Discuss complexities of heart failure and stroke within new end of life legislation
Medical Assistance in Dying

► NOT part of palliative care
  ▪ MAID Intent to end life
  ▪ PC Intent to provide symptom control while death occurs naturally
► Most who request do not end up having
► Heart and Stroke patients don’t request often
► Turning off ICDs, CRT, Pacemakers, LVADs, feeding tubes and IVs is withdrawal of care, NOT MAID
Medical Assistance in Dying

► In Ontario
  ▪ Ministry of Health and Long Term Care for advice 1-844-243-5880

► Look on provincial licencing body websites (CPSO) for legal clarification

► All health care providers should explore the suffering behind the request
Eligibility Requirements for MAID

► Patient must:
  ▪ Be an Adult
  ▪ Be Competent
  ▪ Have an irremedial condition & death is foreseeable.

► Which of our Case patients would be eligible?
  ▪ 1. GM with AS
  ▪ 2. L with ICH
  ▪ 3. HL with L MCA and dementia
The Canadian Virtual Hospice provides support and personalized information about palliative and end-of-life care to patients, family members and health care providers.

www.virtualhospice.ca
Aboriginal
Advanced care planning / Decision making
Assessment tools
Clinical practice guidelines
Communication
Complementary therapies
Culture
Diseases
Cancer
Chronic Obstructive Pulmonary Disease (COPD)
Congestive Heart Failure (CHF)
Canadian Cardiovascular Society consensus conference recommendations on heart failure 2006: Diagnosis and management.
This clinical practice guideline provides recommendations for the management of CHF including symptom management at end-of-life. read more...

Congestive Heart Failure
This 30-minute powerpoint presentation provides an overview of the etiology, diagnosis and pharmacological management of... read more...

Heart Failure Care
This clinical practice guideline reviews clinical evidence and provides recommendations for the management of heart failure... read more...

Palliative Care for Non-Cancer Patients
Comprehensive coverage on the current knowledge of the needs of, and appropriate care for, people dying from causes other... read more...
Programs and Services

Click on a province or territory to find out about palliative care associations, drug/benefit programs, home care programs, residential hospices and other programs and services.

The listings include programs and services offered in both French and English, to offer you the broadest possible range of available information.

If we're missing a resource or need to update some information, please suggest a program or service below.

Provincial  National

Resources

Books, Links, and More
• Programs and Services

Most Popular Articles

When Death is Near - Learn more about changes people may experience in the final days of life.
Health Care Directives - Having a health care directive can ensure treatment decisions
“Yes! That was very loud Mr. Trainer, but I said I wanted to hear your HEART!”
Questions?
Thank you.