END-OF-LIFE DECISION MAKING & CANCER: HOSPICE PERSPECTIVES ON THE ROLE OF CHEMOTHERAPY IN HOSPICE

Ronald Schonwetter, MD
Executive Vice President/Chief Medical Officer
LifePath Hospice and Palliative Care, Inc
Center for Hospice, Palliative Care & End-of-Life Studies, University of South Florida
Background

- Use of chemotherapy among hospices variable
- Significant use of chemotherapy in last 6 months of life
- Prognostication difficult
- Poorly studied in patients near end of life
- Perceived poor tolerance for chemotherapy near end of life
- Barrier to hospice admission
Chemotherapy National Survey*

- Random phone surveyed 300 hospices (6 per state) Response - 288
- Range of hospice size (2-1000)
- Mean/median size of hospice - 73/40
- 51.4% care for patients receiving chemotherapy
- Those who said yes, 22% had none with chemo, 46% had 5 or less, and 10.2% had >10 patients who received chemo in 2002.

*Thielemann, PhD, PI, personal communication, 2003
Chemotherapy National Survey*

Hospices don’t give chemotherapy because:

- Chemo is aggressive, not palliative: 51%
- Financial reasons: 44%
- Exploring feasibility: 1%
- Both philosophy/cost: 2%
- Never needed: 1%

*Thielemann, PhD, PI, personal communication, 2003
Chemotherapy National Survey**

<table>
<thead>
<tr>
<th>Provide Chemo</th>
<th>n</th>
<th>Hospice size (mean)*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Yes</td>
<td>146</td>
<td>95</td>
</tr>
<tr>
<td>No</td>
<td>134</td>
<td>49</td>
</tr>
</tbody>
</table>

\[p = .002\]

**Thielemann, PhD, PI, personal communication, 2003**
Hospice in the Continuum of Care*

Telephone/fax survey to 149 CA hospices (67% RR):

Hospice admission would be precluded by:

- Lack of caregiver: 26%
- Disagree to forgo hospitalization: 29%
- Use of TPN: 38%
- Use of radiotherapy: 36%
- Use of chemotherapy: 48%
- Use of transfusion: 25%
- Size of hospice related to all but TPN

Chemotherapy Use among Medicare Beneficiaries at the End of Life*

Determine the frequency and duration of chemotherapy use in last 6 months of life

Included Medicare cancer patients who died in MA and CA in 1996 (age >65)

33% received chemo in last 6 months of life
23% received chemo in last 3 months of life
9% received chemo in last month of life

Chemo use declined with increasing age
Chemo use similar in patients with chemo responsive and unresponsive cancers

Aggressiveness in Cancer Care Near the End of Life for Elderly Americans...

- 1991-2000 Medicare cancer patient data
- Received chemotherapy in last 2 weeks of life (1993-10%; 1999-12%)
- Entered hospice in last 3 days of life (1993-12%; 1999-15%)
- Percentage of Medicare cancer patients receiving aggressive treatments at the end of life increased slightly during the decade.
- ...If you are an oncologist outlier... and > ½ of your patients are getting chemotherapy in the last 2 weeks of life, perhaps an area for improvement.

*Earle CC. Presented at American Society of Clinical Oncology, June, 2006.*
Use of Chemotherapy in Hospice Patients - ISSUES

- Access to hospice care
- Use of chemo in last months/weeks of life
  - *Patient/ family centered decision making*
- Philosophy ? consistent with hospice
- Patient’s Values/Goals of Care
- Perception of worsened symptoms/QOL
- Cost/Justice
- Effective?
LifePath Hospice Chemotherapy Use By Cancer Type 2005

Cancer Type: Lung, Colorectal, Breast, Prostate

- Lung: Highest number of patients on chemotherapy
- Colorectal, Breast, Prostate: Lower numbers of patients on chemotherapy

Legend:
- # on Chemo
- % on Chemo
Decision Making in Hospice Cancer Patients Near the End of Life

- Clinical decision making in patients with advanced disease depends on accurate predictions
- Will patient live long enough to benefit from treatment?
- Avoid overly aggressive treatment in those that will not live long enough
- Weigh patient values/goals of care
Subjective Survival Predictions

- Review of eight studies*:
  - Predictions more than twice as likely to be overly optimistic
  - Predictions were correct within one week in only 25%
  - Predictions were off by more than one month in over 25%
  - Predictions of < 4 weeks were the most precise
  - Predictions beyond six months little relationship to survival

Physicians with training in oncology or palliative medicine are more accurate than other physicians

A close physician-patient relationship blunts prognostic accuracy

Typical “Death Trajectory” of Patients With Advanced Cancer

- Diagnosis of advanced, incurable cancer
- Onset of terminal phase
- Terminal Phase
- Time (4-8 weeks)
- Death

Health state:
- Normal
- Dead
Formulating Survival Predictions in Patients with Advanced Cancer

- **Actuarial Judgment**
  - Involve Prognostic Factors (anatomic extent, histologic grade, tumor bulk, tumor marker level)
  - Patient Related Factors (age, performance status, comorbidities)
  - Environmental Factors (social support, access to treatment, expertise of physician)
Possible Prognostic Factors in Patients With Advanced Cancer

<table>
<thead>
<tr>
<th>TUMOR-RELATED</th>
<th>PATIENT-RELATED</th>
<th>ENVIRONMENTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anatomic extent</td>
<td>Age, gender, race</td>
<td>Marital status, social support</td>
</tr>
<tr>
<td>Histologic grade and other features</td>
<td>Genetic make up</td>
<td>Geographic location</td>
</tr>
<tr>
<td>Tumor bulk</td>
<td>Performance status</td>
<td>Access to treatment</td>
</tr>
<tr>
<td>Tumor marker level</td>
<td>Symptoms and signs</td>
<td>Expertise of oncologist</td>
</tr>
<tr>
<td>Tumor molecular biology</td>
<td>Psychologic status</td>
<td>Response to treatment</td>
</tr>
<tr>
<td>Disease-free interval</td>
<td>Function of vital organs</td>
<td>Oncologist’s prediction of survival</td>
</tr>
<tr>
<td>Comorbidities</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Prognostic Factors in Patients with Far Advanced Cancer (<3 Months)

- Functional status: performance status
- Nutritional status: cachexia: anorexia, weight loss, dysphagia
- Other symptoms: delirium, dyspnea, pain
- Biological markers: leukocytosis, lymphocytopenia, C-reactive protein
Performance Status Measures

- Karnofsky Performance Status Scale (KPS) (early study score <50 correlated well with survival < 6 months)
- Eastern Cooperative Oncology Group (ECOG) correlates well with survival
- Palliative Performance Scale (PPS) correlates well with KPS and survival
# Palliative Performance Scale

<table>
<thead>
<tr>
<th>PERFORMANCE STATUS LEVEL(%)</th>
<th>MOBILITY</th>
<th>ACTIVITY LEVEL</th>
<th>EVIDENCE OF DISEASE</th>
<th>SELF-CARE</th>
<th>INTAKE</th>
<th>CONSCIOUS LEVEL</th>
</tr>
</thead>
<tbody>
<tr>
<td>100%</td>
<td>Full</td>
<td>Normal activity</td>
<td>No evidence of disease</td>
<td>Full</td>
<td>Normal</td>
<td>Full</td>
</tr>
<tr>
<td>90%</td>
<td>Full</td>
<td>Normal activity</td>
<td>Some evidence of disease</td>
<td>Full</td>
<td>Normal</td>
<td>Full</td>
</tr>
<tr>
<td>80%</td>
<td>Full</td>
<td>Normal activity with effort</td>
<td>Some evidence of disease</td>
<td>Full</td>
<td>Normal or reduced</td>
<td>Full</td>
</tr>
<tr>
<td>70%</td>
<td>Reduced</td>
<td>Unable to perform normal job/ housework</td>
<td>Some evidence of disease</td>
<td>Full</td>
<td>Normal or reduced</td>
<td>Full</td>
</tr>
<tr>
<td>60%</td>
<td>Reduced</td>
<td>Unable to perform hobby/ housework</td>
<td>Significant disease</td>
<td>Occasional assistance necessary</td>
<td>Normal or reduced</td>
<td>Full or confusion</td>
</tr>
<tr>
<td>50%</td>
<td>Mainly sit/ lie</td>
<td>Unable to do any work</td>
<td>Extensive disease</td>
<td>Considerable assistance necessary</td>
<td>Normal or reduced</td>
<td>Full or drowsy or confusion</td>
</tr>
<tr>
<td>40%</td>
<td>Mainly in bed</td>
<td>Unable to do any work</td>
<td>Extensive disease</td>
<td>Mainly assistance</td>
<td>Normal or reduced</td>
<td>Full or drowsy or confusion</td>
</tr>
<tr>
<td>30%</td>
<td>Totally bed bound</td>
<td>Unable to do any work</td>
<td>Extensive disease</td>
<td>Total care</td>
<td>Reduced</td>
<td>Full or drowsy or confusion</td>
</tr>
<tr>
<td>20%</td>
<td>Totally bed bound</td>
<td>Unable to do any work</td>
<td>Extensive disease</td>
<td>Total care</td>
<td>Minimal sips</td>
<td>Full or drowsy or confusion</td>
</tr>
<tr>
<td>10%</td>
<td>Totally bed bound</td>
<td>Unable to do any work</td>
<td>Extensive disease</td>
<td>Total care</td>
<td>Mouth care only</td>
<td>Drowsy or coma</td>
</tr>
<tr>
<td>0%</td>
<td>Dead</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Prognostic Models for Very Advanced Disease

- Palliative Prognostic Score (PaP score)
- Palliative Prognostic Index (PPI)

Developed from multivariate analysis and validated on specific populations may include measures of performance status, nutritional status, disease status, cognitive status, symptoms, biological measures, and physician subjective judgment.
Conceptual Model of Prognostication in Advanced Cancer

- Cancer type
  - Tumor markers
- Symptoms
  - Psychosocial factors
- Comorbidities
  - Novel factors (e.g., cytokines)

Generic prognosis

Individualized Prognosis (conditional)

Individualized Prognosis (revised)
Prognostigram Survival Curve

- Normal Life Expectancy
- Without comorbidity
- With severe COPD

Survival vs. Years
Patient Preference for Choosing Chemotherapy in Advanced Lung Cancer*

• 75% would consider side effects important in choosing a chemotherapy regimen
• Nausea the most important side effect
• Women worry more about infection and hair loss than men
• Less than half of people report that they had discussed specific side effects of chemotherapy regimen with their physicians prior to treatment

Quality of Life and Symptom Control in Hospice Cancer Patients Receiving Chemotherapy*

Ronald Schonwetter, MD
Lori Roscoe, PhD
Martin Nwosu, MD
Brian Zilka, MD
Sehwan Kim, PhD

LifePath Hospice and Palliative Care, Inc.
College of Medicine and School of Aging Studies
Center for Hospice, Palliative Care and End-of-Life Studies
University of South Florida

This study was supported in part by a Pilot Project Research Grant from The Center for Hospice, Palliative Care, and End-of-Life Studies at USF
Chemotherapy Use
Among Hospice Cancer Patients

PURPOSES OF PILOT PROJECT

1) Gather preliminary information about use of chemotherapy among hospice patients
2) Evaluate quality of life and symptom control
3) Evaluate patient expectations/outcomes
Chemotherapy Use Among Hospice Cancer Patients

**STUDY DESIGN**

- Case controlled study matched by age, gender, race, diagnosis
- N=20 in each group
- Demographic data
- MSAS, HQLI, patient expectations, patient outcomes, survival
- Data analysis with SPSS
Chemotherapy Use Among Hospice Cancer Patients

SETTING

LifePath Hospice and Palliative Care, Inc.:

- 40% admissions cancer patients
- Admitting prognosis < 1 year
- Approximately 200 lung cancer patients getting chemo over 1 year period of time

IRB approval
Excluded if SPMSQ < 8/10
Interviewed in home setting
# Chemotherapy Use Among Hospice Cancer Patients

## RESULTS*

<table>
<thead>
<tr>
<th>Patient Characteristics</th>
<th>Chemo (n=20)</th>
<th>No Chemo (n=20)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (mean-years)</td>
<td>61.7</td>
<td>63.1</td>
</tr>
<tr>
<td>Gender (% female)</td>
<td>60</td>
<td>60</td>
</tr>
<tr>
<td>Race (% Caucasian)</td>
<td>80</td>
<td>80</td>
</tr>
<tr>
<td>Educational level (mean-years)</td>
<td>12.2</td>
<td>11.8</td>
</tr>
<tr>
<td>Marital status (% married)</td>
<td>50</td>
<td>45</td>
</tr>
<tr>
<td>(% div/sep)</td>
<td>35</td>
<td>40</td>
</tr>
<tr>
<td>Living alone (%)</td>
<td>20</td>
<td>10</td>
</tr>
<tr>
<td>Religious affil (% Protestant)</td>
<td>53</td>
<td>58</td>
</tr>
<tr>
<td>(% Catholic)</td>
<td>32</td>
<td>21</td>
</tr>
</tbody>
</table>

* None of these are significant at .05 level
Chemotherapy Use
Among Hospice Cancer Patients

RESULTS

<table>
<thead>
<tr>
<th>Cancer diagnosis</th>
<th>Chemo</th>
<th>No Chemo</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lung</td>
<td>60%</td>
<td>60%</td>
</tr>
<tr>
<td>Breast</td>
<td>15%</td>
<td>15%</td>
</tr>
<tr>
<td>Colon</td>
<td>5%</td>
<td>5%</td>
</tr>
<tr>
<td>Prostate</td>
<td>5%</td>
<td>5%</td>
</tr>
<tr>
<td>Ovary</td>
<td>5%</td>
<td>5%</td>
</tr>
<tr>
<td>Brain</td>
<td>5%</td>
<td>5%</td>
</tr>
<tr>
<td>GU</td>
<td>5%</td>
<td>5%</td>
</tr>
<tr>
<td>Have living will</td>
<td>85%</td>
<td>95%</td>
</tr>
</tbody>
</table>
Chemotherapy Use Among Hospice Cancer Patients

**RESULTS**

<table>
<thead>
<tr>
<th></th>
<th>Chemo</th>
<th>No Chemo</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>HQLI (mean score)</td>
<td>52.9</td>
<td>48.8</td>
<td>0.62</td>
</tr>
<tr>
<td>Composite MSAS score</td>
<td>41.9</td>
<td>52.1</td>
<td>0.29</td>
</tr>
<tr>
<td>Symptom # (mean)</td>
<td>12.6</td>
<td>10.6</td>
<td>0.32</td>
</tr>
<tr>
<td>Symptom Severity</td>
<td>53.7</td>
<td>60.1</td>
<td>0.56</td>
</tr>
<tr>
<td>Symptom Distress</td>
<td>41.2</td>
<td>47.0</td>
<td>0.60</td>
</tr>
</tbody>
</table>
# Chemotherapy Use Among Hospice Cancer Patients

## RESULTS

<table>
<thead>
<tr>
<th></th>
<th>Chemo</th>
<th>Non-chemo</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Months since dx</td>
<td>30</td>
<td>50</td>
<td>.04</td>
</tr>
<tr>
<td>Total # chemo Rx</td>
<td>19</td>
<td>24</td>
<td>.53</td>
</tr>
<tr>
<td>Days hospital/hospice</td>
<td>.35</td>
<td>1.1</td>
<td>.09</td>
</tr>
<tr>
<td>LOS hospice (median days)</td>
<td>240</td>
<td>195</td>
<td>.52</td>
</tr>
<tr>
<td>Chemo made feel better</td>
<td>73.3</td>
<td>31.7</td>
<td>.01</td>
</tr>
<tr>
<td>Chemo better symptom control</td>
<td>71.7</td>
<td>33.3</td>
<td>.01</td>
</tr>
</tbody>
</table>
Chemotherapy Use
Among Hospice Cancer Patients

MSAS RESULTS (multiplicative approach)

• No difference total score b/t groups
• 30/36 symptoms no difference b/t groups
• 6/36 symptoms difference b/t groups
• 4/6 less symptom severity/distress on chemo
  (vomiting (p=.07), muscle weakness (p=.04), urination problems (p=.03), numbness/tingling (p=.02))
• 2/6 more symptom severity/distress on chemo (change in taste (p=.01), cough (p=.04))
Chemotherapy Use Among Hospice Cancer Patients

CONCLUSIONS

- Chemo group diagnosed later
- Chemo group trend less hospital days
- Quality of life similar
- Symptom control similar if not slightly better in 4/6 symptoms with changes in chemo patients
- Chemotherapy group reported better subjective symptom control and made patients feel better
- LOS difference but not significant
Chemotherapy Use Among Hospice Cancer Patients

LIMITATIONS
Small number/single site

FUTURE RECOMMENDATIONS
Expand study
Compare outcomes by cancer type
Compare outcomes using trend analysis
   b/t groups by time since last chemo
Add financial data regarding cost
Use of Chemotherapy in Hospice Patients - ISSUES

- Access to hospice care
- Use of chemo in last months/weeks of life
- Prognosis
- Patient/family centered decision making
- Philosophy ? consistent with hospice
- Patient values/goals of care
- Perception of worsened symptoms/QOL
- Cost/Justice
- Effective?