Integrating Geriatrics into Oncology Care

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No disclosures.
The Challenge for Geriatrics
Why Treating Older Adults is Challenging

- High Prevalence
- Multimorbidity
- Age-Associated Problems
- “Evidence-Based Medicine” with Little Evidence
- Clinical Pressures
Emphasis on Evidence

3rd Edition

An Evidence-Based Approach

4th Edition
Enrollment of Older Adults in Cancer Trials

Fig 1. Proportion of elderly patients enrolled onto registration trials compared with the proportion of elderly patients in the US cancer population. The differences between the two groups were significant for all age groups ($P < .001$).

Smith, Hurria, JCO, 2011
Thinking Like a Geriatrician: Acting in a Sea of Uncertainty
Sailing Between Scylla and Charybdis

Ageism: Making disease management choices for a person solely based on (older) age

Overtreatment: Making management choices solely based on mortality and no other valued outcomes

Cognitive Biases: Committing (psychological) decision errors
Geriatric Treatment Strategy for Older Adults with Cancer

• Stage the Cancer: Disease Prognosis
  • Treat the Cancer as Aggressively as Possible
  • Minimize Toxicities
  • Consider Timelines

• Stage the Aging: Health Status Prognosis
  • Demographic Profile
  • Health status → Geriatric Assessment

• Make Shared Decisions
  • Preferences
  • Expectations
  • Communication
Age & Life Expectancy

Walter et al, JAMA, 2001, 285
Question to Answer

- Which older patients with cancer are robust, frail, or “vulnerable”?

Patient: H.F.
Age: 70
Health status: Excellent
Life Expectancy: 18 yrs

Patient: J.N.
Age: 76
Health status: Fair
RLE: 9 yrs

Patient: D.C.
Age: 72
Health status: Poor
RLE: 4
Geriatrics Conceptual Domains

- **Multimorbidity**: Number and severity of additional medical diagnoses.

- **Frailty**: Vulnerability to decline in the face of a stressor.

- **Cognitive Impairment**: Acquired decline in memory and one other cognitive function sufficient to affect daily life.

- **Disability**: Dependency in carrying out activities essential to independent living.

- **Geriatric Syndromes**: Problems caused by a cluster of underlying sub-clinical physiological deficits.
Comprehensive Geriatric Assessment (CGA): Measuring & Categorizing Patients’ Risk

- CGA: a way to measure risk in older cancer patients

- Includes:
  1. Functional status (ADL/IADLs)
  2. Comorbidities (Charlson Index)
  3. Cognitive status (MMSE, BMOC, MoCA)
  4. Geriatric syndromes assessment (Falls)
  5. Nutritional status (MNA)
  6. Mood assessment (GDS, HADS)
  7. Social support

- Each domain independently predicts morbidity mortality in the older patient
Are Evidence-Based Assessment Tools Available?
Comorbidities & Cancer Outcomes

Vulnerable Elders’ Survey (VES-13)

- **Age**
  - 75-84 years +1
  - ≥ 85 years +3

- **Self-rated health**
  - Fair or poor +1

- **Physical function limitation**
  - Count = 1 +1
  - Count ≥ 2 +2

- **Functional disability**
  - Any of 5 IADL/ADLS +4
VES-13 Identifies Need for CGA

AUC: 0.90

VES-13 Predicts Overall Survival in Colon Cancer Patients on Chemotherapy

Ramsdale et al, JAGS, 2013
Short Physical Performance Battery (SPPB)

Score: 0 - 12

1. Timed 4-meter walk → Gait Speed
2. Timed Repeat Chair Stand → LE Strength
3. Tandem Stand (10 seconds) → Balance

Mortality Rates by SPPB Summary Score

<table>
<thead>
<tr>
<th>Base Model</th>
<th>Major Complications</th>
<th>Surgical ICU Admission</th>
<th>Days in Hospital</th>
<th>Non-Home Discharge</th>
<th>30 Day Readmission</th>
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</thead>
<tbody>
<tr>
<td></td>
<td>OR</td>
<td>P-value</td>
<td>OR</td>
<td>P-value</td>
<td>β</td>
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<tr>
<td>Age</td>
<td>1.03</td>
<td>0.22</td>
<td>1.04</td>
<td>0.22</td>
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<tr>
<td>BMI</td>
<td>1.10</td>
<td>0.07</td>
<td>0.96</td>
<td>0.39</td>
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<tr>
<td>ASA</td>
<td>0.68</td>
<td>0.43</td>
<td>2.41</td>
<td>0.16</td>
<td>-0.10</td>
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<tr>
<td>Comorbidity</td>
<td>0.90</td>
<td>0.50</td>
<td>1.16</td>
<td>0.36</td>
<td>0.00</td>
</tr>
<tr>
<td>+</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight Loss</td>
<td>0.81</td>
<td>0.70</td>
<td>2.17</td>
<td>0.23</td>
<td>0.08</td>
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<tr>
<td>Exhaustion</td>
<td>4.06</td>
<td>0.01</td>
<td>4.30</td>
<td>0.01</td>
<td>0.27</td>
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<tr>
<td>Weakness</td>
<td>0.70</td>
<td>0.51</td>
<td>1.70</td>
<td>0.37</td>
<td>-0.09</td>
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<tr>
<td>Walk Time</td>
<td>-0.02</td>
<td>0.96</td>
<td>0.82</td>
<td>0.57</td>
<td>-0.07</td>
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<tr>
<td>Chair stands</td>
<td>0.82</td>
<td>0.34</td>
<td>0.74</td>
<td>0.20</td>
<td>-0.01</td>
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<tr>
<td>SPPB</td>
<td>1.06</td>
<td>0.62</td>
<td>0.93</td>
<td>0.55</td>
<td>0.12</td>
</tr>
<tr>
<td>VES-13</td>
<td>1.05</td>
<td>0.80</td>
<td>1.16</td>
<td>0.47</td>
<td>0.13</td>
</tr>
<tr>
<td>Memory Score</td>
<td>0.97</td>
<td>0.65</td>
<td>1.06</td>
<td>0.45</td>
<td>0.07</td>
</tr>
</tbody>
</table>
## CARG ChemoTox Model

### Risk factors for Gr. 3-5 Toxicity

<table>
<thead>
<tr>
<th>Risk Factor</th>
<th>OR (95% CI)</th>
<th>Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age ≥73 yrs</td>
<td>1.8 (1.2-2.7)</td>
<td>2</td>
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<tr>
<td>GI/GU cancer</td>
<td>2.2 (1.4-3.3)</td>
<td>3</td>
</tr>
<tr>
<td>Standard dose</td>
<td>2.1 (1.3-3.5)</td>
<td>3</td>
</tr>
<tr>
<td>Poly-chemotherapy</td>
<td>1.8 (1.1-2.7)</td>
<td>2</td>
</tr>
<tr>
<td>Hemoglobin (male: &lt;11, female: &lt;10)</td>
<td>2.2 (1.1-4.3)</td>
<td>3</td>
</tr>
<tr>
<td>Creatinine Clearance &lt;34</td>
<td>2.5 (1.2-5.6)</td>
<td>3</td>
</tr>
<tr>
<td>1 or more falls in last 6 months</td>
<td>2.3 (1.3-3.9)</td>
<td>3</td>
</tr>
<tr>
<td>Hearing impairment (fair or worse)</td>
<td>1.6 (1.0-2.6)</td>
<td>2</td>
</tr>
<tr>
<td>Limited in walking 1 block (MOS)</td>
<td>1.8 (1.1-3.1)</td>
<td>2</td>
</tr>
<tr>
<td>Assistance required in medications</td>
<td>1.4 (0.6-3.1)</td>
<td>1</td>
</tr>
<tr>
<td>Decreased social activity (MOS)</td>
<td>1.3 (0.9-2.0)</td>
<td>1</td>
</tr>
</tbody>
</table>

Hurria et al, JCO, 2011
Model Performance:
Prevalence of Toxicity by Score

ROC: 0.72

Grade 3-5 Toxicities

Total Score

<table>
<thead>
<tr>
<th>Score Range</th>
<th>N</th>
<th>&quot;Low&quot; 27% (0 to 5)</th>
<th>&quot;Mid&quot; 53% (6 to 11)</th>
<th>&quot;High&quot; 83% (≥12)</th>
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</thead>
<tbody>
<tr>
<td>0 to 4</td>
<td>39</td>
<td>21%</td>
<td></td>
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<tr>
<td>5</td>
<td>64</td>
<td>31%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 to 8</td>
<td>161</td>
<td>45%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9 to 11</td>
<td>123</td>
<td>63%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12 to 13</td>
<td>50</td>
<td>76%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>≥14</td>
<td>36</td>
<td>92%</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
MD-rated KPS vs. Model

Chi-square test

\[ p < 0.0001 \]

Chi-square test

\[ p = 0.17 \]
Schema for Geriatric Assessment

Age > 65

No apparent

Screen

Negative: No CGA

+ Refer for CGA

Vulnerable

Frail

CGA referral

Palliative

Looks age

Screen & CGA

Vulnerable

Frail

Obvious frail

Palliative

Fit full-dose
Making Choices
Starting Cancer Therapy

- Men over 65
- Biochemical prostate cancer recurrence
- Hormone ablation therapy started by clinical decision
Starting Hormone Therapy

Additional Time on Hormones = 14 Months
Practical Considerations: Building Infrastructure
Collaborative Model of Cancer Management for Older Adults

- **Oncology:** Stage the Cancer
  - Disease Burden
  - Gleason Scores
  - Cancer-based prognosis

- **Geriatrics:** Stage the Aging
  - Life Expectancy Estimation
  - Quality of Life Determination
  - “Host”-based prognosis

Elements

1. Sufficient time/space for Geriatric Assessments
2. Provide geriatrics-specific training to support staff
3. Exam rooms and equipment that accommodates older patients for assessments
4. Resources to facilitate/support caregivers and for transportation
5. Allow for information collection from remote areas with technology to facilitate evaluation
SOCARE Clinic: Oncology-Embedded Geriatrics

- Started in 2006
- Close Collaboration with Oncology
- Aging Assessment

- Clinical
- Teaching
- Research Hub
## SO CARE Referral Reasons

<table>
<thead>
<tr>
<th>Primary Referral Reason</th>
<th>Percentage of Patients (n=107)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Comprehensive Geriatric Assessment</td>
<td>15.9%</td>
</tr>
<tr>
<td>Recommendations Regarding Continuing Tx</td>
<td>10.3%</td>
</tr>
<tr>
<td>Recommendations Regarding Tx Initiation</td>
<td>38.3%</td>
</tr>
<tr>
<td>Initial Disease Management</td>
<td>29.9%</td>
</tr>
<tr>
<td>Questions Related to a Specific Problem</td>
<td>2.8%</td>
</tr>
<tr>
<td>Support Through Treatment</td>
<td>2.8%</td>
</tr>
</tbody>
</table>
Colleagues
Thanks!

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