Why do we need Comprehensive Geriatric Assessment in cancer care?

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NO CONFLICTS OF INTEREST TO DECLARE
Patient, 96 years

“......you know, I am not 80 years anymore.......”
Life expectancy increases

- UK: Life expectancy increases at the rate of 5 hours per day¹
- Why declining late-life mortality?

¹Kirkwood Nature 2008
Case – male with rectal cancer

- 69 years old, home dwelling
- Locally advanced rectal cancer
- Admitted for preoperative chemoradiotherapy according to guidelines

- After a week non-cooperative, pulled out i.v. lines, completely bed-ridden, aggressive
- How was his premorbid *functional status*?
OUTLINE

- Heterogeneity in the older population
- Old and frail – lack of evidence
- Answer: Comprehensive Geriatric Assessment
- Functional status and cognition
Challenges when patient age increases

- Heterogeneity – differences in remaining life expectancy\(^1\)
- Chronological age not sufficient
- Comorbidity, functional decline, dementia
- Evidence-based data are scarce, guidelines have limited value\(^2\)
- Other endpoints than survival: independence, cognitive function\(^3\)

\(^1\)Walter, JAMA, 2001; \(^2\)Hubbard, Biogerontology, 2010; \(^3\)Fried, NEJM, 2002
Patient preferences

- 226 patients over 60 y with serious illness
- Asked about treatment preferences (without treatment the disease would lead to death)
- 89% wanted burdensome treatment if health was improved/remained unchanged
- Treatment improved survival, but lead to severe
  - functional decline: 74% would say no
  - cognitive impairment: 89% would say no
- These outcomes were more important than survival

Guidelines and older patients¹

- 79 year old woman

- Osteoporosis, arthrosis, diabetes, asthma, and hypertension (all moderately severe)

- Follow the guidelines for the five conditions:
  - 12 medications daily (19 doses per day, intake 5 x daily)
  - 14 non-pharmacological interventions suggested (diet, exercise)
  - Doctor visits 2-4 times a year
  - Follow all the guidelines: disagreement between medications and training recommendations

¹Boyd CM JAMA 2005
“After age 30, it is all downhill”

RA Marottoli, 2011
Heterogeneity

A Life Expectancy for Women

Years

<table>
<thead>
<tr>
<th>Age, y</th>
<th>Top 25th Percentile</th>
<th>50th Percentile</th>
<th>Lowest 25th Percentile</th>
</tr>
</thead>
<tbody>
<tr>
<td>70</td>
<td>21.3</td>
<td>15.7</td>
<td>9.5</td>
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<tr>
<td>75</td>
<td>17</td>
<td>11.9</td>
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<tr>
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<td>13</td>
<td>8.6</td>
<td>4.6</td>
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<td>85</td>
<td>9.6</td>
<td>5.9</td>
<td>2.9</td>
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<tr>
<td>90</td>
<td>6.8</td>
<td>3.9</td>
<td>1.8</td>
</tr>
<tr>
<td>95</td>
<td>2.7</td>
<td>1.1</td>
<td>0.0</td>
</tr>
</tbody>
</table>

B Life Expectancy for Men

Years

<table>
<thead>
<tr>
<th>Age, y</th>
<th>Top 25th Percentile</th>
<th>50th Percentile</th>
<th>Lowest 25th Percentile</th>
</tr>
</thead>
<tbody>
<tr>
<td>70</td>
<td>18</td>
<td>12.4</td>
<td>6.7</td>
</tr>
<tr>
<td>75</td>
<td>14.2</td>
<td>9.3</td>
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</tbody>
</table>

Reprinted and adapted with permission from Walter LC, Covinsky KE. Cancer screening in elderly patients. JAMA 2001;285:2750-2758.
Categorizing patients

Geriatric assessment

- Fit
- Intermediate
- Frail
Geriatric Assessment (GA)\(^1\)

- Functional status  
- Comorbidity  
- Polypharmacy  
- Cognitive function/dementia  
- Nutritional status  
- Depression  
- Social support

- Remaining life expectancy  
- Detection of unidentified problems  
- Optimization before treatment  
- Prediction of adverse outcomes  
- Treatment planning  
- Baseline information  
- Shared decision-making

\(^1\)Wildiers et al, JCO, 2014
Optimal management of elderly cancer patients: usefulness of the Comprehensive Geriatric Assessment

Philippe Caillet\textsuperscript{1,2}
Marie Laurent\textsuperscript{1,2}
Sylvie Bastuji-Garin\textsuperscript{1,3,4}
Evelyne Liuu\textsuperscript{2}
Stephane Culin\textsuperscript{5}
Jean-Leon Lagrange\textsuperscript{6}
Florence Canoui-Poitrine\textsuperscript{1,2,3,*}
Elena Paillaud\textsuperscript{1,2,*}

\textit{Clinical Interventions in Aging 2014:9 1645–1660}
Results

• Each CGA domain was associated with chemotoxicity and survival in at least one study

• The domains most often predicting mortality and chemotoxicity:
  ▪ functional impairment
  ▪ malnutrition
  ▪ comorbidities
The effect of a geriatric evaluation on treatment decisions and outcome for older cancer patients – A systematic review

Marije E. Hamaker a,*, Marthe te Molder b, Noortje Thiel b, Barbara C. van Munster c, Anandi H. Schiphorst d, Liece H. van Huis b

a Department of Geriatric Medicine, Diakonessenhuis Utrecht, The Netherlands
b Department of Internal Medicine, Diakonessenhuis Utrecht, The Netherlands
c Department of Geriatric Medicine, Gele Ziekenhuizen, Apeldoorn, The Netherlands
d Department of Surgery, Diakonessenhuis Utrecht, The Netherlands
Methods and results

• 36 studies included in the review
• Change in oncologic treatment:
  • the initial treatment plan modified in 28% (8-54%) of patients after geriatric evaluation
  • primarily to less intensive treatment
• Implementation of non-oncologic interventions
  • interventions were suggested in 72% of patients
  • most frequently social issues, nutrition and polypharmacy
Effect on treatment outcome

• Varying

• Trend towards positive effect on
  – treatment completion (75% of studies)
  – treatment-related toxicity/complications (53% of studies)
Time to Stop Saying Geriatric Assessment Is Too Time Consuming

Marije E. Hamaker, Diakonessenhuis, Utrecht, the Netherlands
Tanya M. Wildes, Washington University School of Medicine, St Louis, MO
Siri Rostoft, Oslo University Hospital and University of Oslo, Oslo, Norway

Table 1. Comparative Cost of Nurse’s Salary Compared With That of Other Diagnostic Instruments Used in Oncologic Workup

<table>
<thead>
<tr>
<th>Diagnostic Instrument</th>
<th>Cost ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nurse’s salary for 1 hour</td>
<td>28</td>
</tr>
<tr>
<td>Complete blood count</td>
<td>17</td>
</tr>
<tr>
<td>Carcinoembryonic antigen</td>
<td>50</td>
</tr>
<tr>
<td>Chest x-ray</td>
<td>67</td>
</tr>
<tr>
<td>Bilateral screening mammography</td>
<td>321</td>
</tr>
<tr>
<td>Abdominal or chest CT scan</td>
<td>640</td>
</tr>
<tr>
<td>MRI pelvis</td>
<td>739</td>
</tr>
<tr>
<td>Liver biopsy</td>
<td>879</td>
</tr>
<tr>
<td>Whole-body PET-CT</td>
<td>1,788</td>
</tr>
<tr>
<td>Colonoscopy with biopsy</td>
<td>2,187</td>
</tr>
<tr>
<td>Breast cancer genomic testing (Oncotyped)</td>
<td>3,416</td>
</tr>
<tr>
<td>Liquid biopsy (Guardant360)</td>
<td>5,800</td>
</tr>
</tbody>
</table>
Evidence GA

• GA uncovers problems even if ECOG 0-1
• GA predicts toxicity, complications, and survival
• GA changes the treatment in 28% of cases, mostly to less aggressive
• New relevant problems detected in 72%
• GA is superior to oncologists’ clinical judgment in identifying frailty

A FEW WORDS ABOUT FUNCTIONAL STATUS
“She Was Probably Able to Ambulate, but I’m Not Sure”

• Failure to assess functional status in hospitalized patients is the norm
• Basic: ADL-function, mobility, and cognition
• 1/3 of patients 70+ encounter hospitalization-associated disability (even when acute illness is effectively treated)

Covinsky JAMA 2011
How to measure functional status

ADL = activities of daily living
- survive (eat, go to the toilet, move from bed to chair)

IADL = instrumental ADL
- live independently (manage money, shop, medication use)

Performance measures: Gait speed, TUG (timed up and go test), grip strength

Ask about falls

Look at the patient – ambulation skills, handgrip

Document what you see
Relationship Between Asking an Older Adult About Falls and Surgical Outcomes

Teresa S. Jones, MD; Christina L. Dunn, BA; Daniel S. Wu, MD; Joseph C. Cleveland Jr, MD; Deidre Kile, MS; Thomas N. Robinson, MD, MS

Figure 2. Prior Falls and Postoperative Complications in Colorectal Operations

- Incidence of ≥1 Postoperative Complications, %
- Falls in the 6 mo Prior to a Major Operation, No.

P = .03
COGNITIVE FUNCTION
Clinical warning signs

- The wife/children answer all the questions
- The patient is not sure why he/she ended up in your office
- The patient keeps asking the same questions
- You get a feeling that your information does not get through
Conclusion

• Older patients are heterogeneous

• Comprehensive Geriatric Assessment provides relevant information

• Frailty describes the vulnerable subset of the older population
Study: Older patients (70+) with colorectal cancer

» Geriatric assessment pre-surgery

» Classified patients as fit, intermediate or frail

Kristjansson et al, CROH, 2010
Study cohort

Geriatric Assessment
178 patients
Mean 80 years

FIT
21

INTERMEDIATE
81

FRAIL
76
RESULTS

» Frail patients had more severe complications than non-frail patients

» Age was not a predictor of complications

» Frail patients had poorer 5-year survival than non-frail patients

» Age was not a predictor of survival

Kristjansson et al, CROH, 2010
Ommundsen et al, The Oncologist, 2014
5-year survival by frailty status
5-YEAR OVERALL SURVIVAL ACCORDING TO AGE