“Best of Journal of Geriatric Oncology”

Supriya Mohile, Editor-in-Chief
Siri Rostoft, Deputy Editor
Shabbir Alibhai, Deputy Editor
Disclosures

Receive funding from Elsevier for Editor Roles
Outline

• Mohile
  • Journal of Geriatric Oncology Review

• Rostoft
  • Top Cited Manuscript
  • Editor’s Pick

• Alibhai
  • Top Downloaded Manuscript
  • Editor’s Pick

• Editors’ Pick for Best Manuscript of the Year
  • Arti Hurria Manuscript Award ($1000 prize from Elsevier)
Aims and Scope

The Journal of Geriatric Oncology is an international, multidisciplinary journal which is focused on advancing research in the treatment and survivorship issues of older adults with cancer, as well as literature relevant to education and policy development in geriatric oncology.

The journal welcomes the submission of manuscripts in the following categories:
- Original research articles
- Review articles
- Clinical trials
- Education and training articles
- Short communications
- Perspectives
- Meeting reports
- Letters to the Editor

The Journal of Geriatric Oncology is the official journal of the International Society of Geriatric Oncology (SIOG).
Impact Factor

<table>
<thead>
<tr>
<th>Index</th>
<th>Category</th>
<th>Rank</th>
<th>Total Journals</th>
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<tr>
<td>SCIE</td>
<td>Geriatrics &amp; Gerontology</td>
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<td>SCIE</td>
<td>Oncology</td>
<td>107</td>
<td>229</td>
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Submitted Manuscripts & Editorial Outcomes

- **2015**: Submitted: 175, Rejected: 105, Accepted: 56, Withdrawn or Removed: 3
- **2016**: Submitted: 170, Rejected: 90, Accepted: 80, Withdrawn or Removed: 6
- **2017**: Submitted: 233, Rejected: 106, Accepted: 86, Withdrawn or Removed: 11
- **2018**: Submitted: 315, Rejected: 124, Accepted: 157, Withdrawn or Removed: 18
- **2019 YTD**: Submitted: 341, Rejected: 159, Accepted: 175, Withdrawn or Removed: 17

Legend:
- Orange: Submitted
- Blue: Rejected
- Dark Grey: Accepted
- Light Blue: Withdrawn or Removed
### ScienceDirect Usage: Top 10 Countries by Last Year

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<tr>
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<td>Rest of World</td>
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<td>18,553</td>
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<td><strong>Total</strong></td>
<td>41,176</td>
<td>49,295</td>
<td>64,079</td>
<td>61,291</td>
<td>79,997</td>
<td>68,550</td>
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Dr. Siri Rostoft:

- Top Cited Paper
- Editor’s Pick
Polypharmacy and potentially inappropriate medication use in geriatric oncology

Manvi Sharmaa,*, Kah Poh Lohb, Ginah Nightingalec, Supriya G. Mohiled, Holly M. Holmesd

aDepartment of Pharmaceutical Health Outcomes and Policy, College of Pharmacy, University of Houston, Houston, TX, USA
bJames P. Wilmot Cancer Institute, University of Rochester Medical Center, Rochester, NY, USA
cDepartment of Pharmacy Practice, Jefferson College of Pharmacy, Thomas Jefferson University, Philadelphia, PA, USA
dDivision of Geriatric and Palliative Medicine, University of Texas Health Science Center at Houston, McGovern Medical School, Houston, TX, USA
Polypharmacy in Geriatric Oncology

• Review
• Summarize evidence regarding the prevalence and impact of polypharmacy in geriatric oncology patients
• Provide recommendations for assessment and management
### Definition and Relation to Outcomes

#### Table 1 - Polypharmacy and association with outcomes in geriatric oncology.

<table>
<thead>
<tr>
<th>Study</th>
<th>Population</th>
<th>Definition of polypharmacy</th>
<th>Patients meeting polypharmacy criteria</th>
<th>Outcomes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cailet et al. 2011²⁵</td>
<td>375 patients ≥70 years with solid tumour in a GA intervention; 54.6% had metastatic disease</td>
<td>≥5 oral medications daily</td>
<td>242</td>
<td>6.7% Not associated with a change in cancer treatment plan</td>
</tr>
<tr>
<td>Parks et al. 2015²⁶</td>
<td>47 women ≥70 years with early stage, operable breast cancer</td>
<td>≥4 daily medications</td>
<td>27</td>
<td>5.9% Associated with non-surgical treatment of cancer (p = 0.002)</td>
</tr>
<tr>
<td>de Glos et al. 2013²¹</td>
<td>3179 women ≥65 years who underwent surgery for breast cancer (all stages)</td>
<td>≥5 different types of medication</td>
<td>428</td>
<td>14% Associated with the risk of postoperative complications OR 1.84, 95% CI 1.46–2.32</td>
</tr>
<tr>
<td>Badgwell et al. 2013³⁷</td>
<td>111 patients ≥65 years undergoing abdominal surgery for types of cancer, primarily GI</td>
<td>Use of ≥5 medications</td>
<td>53</td>
<td>4.8% Increased length of stay OR 2.45, 95% CI 1.09–5.49</td>
</tr>
<tr>
<td>Hamaker et al. 2014²⁴</td>
<td>73 women ≥65 years with metastatic breast cancer receiving first-line single-agent palliative chemotherapy</td>
<td>Use of ≥5 medications</td>
<td>37</td>
<td>5.1% Associated with grade 3–4 chemotherapy-related toxicity Unadjusted OR 6.38, 95% CI 1.99–23.47</td>
</tr>
<tr>
<td>Freyer et al. 2005³⁷</td>
<td>83 women ≥70 years with Stage III/IV ovarian cancer</td>
<td>≥6 daily medications</td>
<td>7</td>
<td>8% Lower overall survival (p = 0.04) for those with polypharmacy</td>
</tr>
<tr>
<td>Kim et al. 2014³⁴</td>
<td>98 patients ≥65 years receiving palliative chemotherapy (multiple cancer sites included)</td>
<td>&gt;6 medications</td>
<td>39</td>
<td>40% No association with early discontinuation of palliative chemotherapy</td>
</tr>
<tr>
<td>Turner et al. 2014²⁹</td>
<td>385 patients ≥70 years seen in an outpatient oncology clinic (multiple cancer sites included)</td>
<td>Use of ≥5 regular medications</td>
<td>221</td>
<td>5.7% Associated with impaired physical function (OR 1.13, 95% CI 1.06–1.20) and being frail (OR 4.48, 95% CI 1.90–10.54) and pre-frail (OR 2.35, 95% CI 1.43–3.86)</td>
</tr>
<tr>
<td>Senel et al. 2015²⁹</td>
<td>213 patients, mean age 60.3 years, in an inpatient palliative care unit (multiple cancer sites included)</td>
<td>Use of &gt;3 medications</td>
<td>111</td>
<td>5.2% Associated with incident delirium in univariate analysis (p &lt; 0.05)</td>
</tr>
<tr>
<td>Elliot et al. 2014³⁰</td>
<td>150 patients ≥60 years of age, with acute myelogenous leukemia (AML)</td>
<td>Use of ≥4 medications</td>
<td>78</td>
<td>5.2% Associated with 30-day mortality in adjusted analysis (OR 9.98, 95% CI 1.18–84.13). Lower odds of achieving remission (OR 0.20, 95% CI 0.06–0.65)</td>
</tr>
</tbody>
</table>
## Interventions for Polypharmacy

<table>
<thead>
<tr>
<th>Study</th>
<th>Definition of Polypharmacy</th>
<th>Interventions</th>
<th>Outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aparicio et al. 2010&lt;sup&gt;67&lt;/sup&gt;</td>
<td>1 anticoagulant or 2 cardiovascular or 2 psychotropic medications or ≥10 medications</td>
<td>Geriatricians proposed non-oncologic treatment adaptation</td>
<td>CGA led to an adaptation of the non-oncological treatment in 15 (72%) and of the social care in 8 (38%) patients, but never modified the oncological strategy</td>
</tr>
<tr>
<td>Caillet et al. 2011&lt;sup&gt;35&lt;/sup&gt;</td>
<td>Concurrent use of ≥5 medications</td>
<td>Geriatricians proposed change in prescribed medication</td>
<td>Functional status assessed by the ADL score and malnutrition were independently associated with changes in cancer treatment</td>
</tr>
<tr>
<td>Horgan et al. 2012&lt;sup&gt;28&lt;/sup&gt;</td>
<td>–</td>
<td>Geriatric oncology service made recommendations on medication change</td>
<td>Previously unidentified medical problems were identified in 70% of patients</td>
</tr>
<tr>
<td>Kalsi et al. 2015&lt;sup&gt;61&lt;/sup&gt;</td>
<td>Concurrent use of ≥5 medications</td>
<td>Intervention to reduce unnecessary medications such as adjustment of anti-hypertensive medications in over or undertreated patients</td>
<td>Geriatrician-led CGA interventions were associated with improved chemotherapy tolerance</td>
</tr>
</tbody>
</table>
Conclusions

• There is a need for validated methods to
  • define polypharmacy
  • incorporate assessment and evaluation as a standard part of GA

• To incorporate the assessment of polypharmacy into GA studies and interventions,
  • a clear, simple definition of polypharmacy would be beneficial,
  • methods of medication review and intervention need to be clearly described and developed
Declining cancer incidence at the oldest ages: Hallmark of aging or lower diagnostic activity?

Jacob K. Pedersen a,b,*, Jens-Ulrik Rosholm c, Marianne Ewertz a,d, Gerda Engholm e, Rune Lindahl-Jacobsen b,f, Kaare Christensen a,g

a Academy of Geriatric Cancer Research (AgeCare), Odense, Denmark
b Department of Epidemiology, Biostatistics and Biometry, Institute of Public Health, University of Southern Denmark, Odense, Denmark
c Department of Geriatric Medicine, Odense University Hospital, Odense, Denmark
d Oncology Unit, Department of Clinical Research, Odense University Hospital, Odense, Denmark
e Department of Documentation & Quality, Danish Cancer Society, Copenhagen, Denmark
f Max-Planck Odense Center on the Biodemography of Aging, University of Southern Denmark, Odense, Denmark
g The Danish Aging Research Center (KCI), Department of Epidemiology, Biostatistics and Biometry, Institute of Public Health, University of Southern Denmark, Odense, Denmark
Declining Cancer Incidence at the Oldest Ages

• Background: Incidence of cancer tends to level off or decrease at the highest ages

• Methods: Age-specific incidence rates were estimated up to ages 95+

• Results:
  • Age-specific incidence rates reached a peak between ages 65-89 after which rates declined.
  • Incidence pattern of suspected but not verified cancer was similar
  • Proportion with microscopic verification was 95% in 0-69 years and 80% at ages 90+
Conclusions

• The lower diagnostic verification of cancer at the highest ages suggests a lower diagnostic activity among the oldest-old.

• However, the proportion of suspected but not verified cancers did not increase with age, possibly partially due to lack of registration.

• The declining cancer incidence at oldest ages is probably partly due to lower diagnostic activity.
Dr. Shabbir Alibhai:

- Top Downloaded Paper
- Editor's Pick
Functional status decline in older patients with breast and colorectal cancer after cancer treatment: A prospective cohort study

Doris van Abbema a,1, Amée van Vuuren b, Franchette van den Berkmortel b, Marjan van den Akker c,d, Laura Deckx d,2, Frank Buntinx c,d, Roel van Kampen b, Els Lambooij c, Maaike de Boer a, Judith de Vos-Geelen a, Vivianne C. Tjan-Heijnen a,*

a Department of Medical Oncology, GROW – School for Oncology and Developmental Biology, Maastricht University Medical Center, Peter Debyelaan 25, 6229 HX, Maastricht, The Netherlands
b Department of Internal Medicine, Zuyderland Medical Center, Henri Dunantstraat 5, 6419 PC Heerlen-Geleen, The Netherlands
c Department of Family Medicine, Maastricht University, Peter Debyelaan 1, 6229 HX, Maastricht, The Netherlands
d Department of General Practice, KU Leuven, Kapucijnenvoer 33, PB 7001 3000 Leuven, Belgium
e Department of Internal Medicine, Maastricht University Medical Center, De Run 4600, 5304 DB, Veldhoven, The Netherlands
Functional Status in Patients Undergoing Cancer Treatment

• Along with survival and QOL, one of 3 key outcomes that matter to most older adults with cancer considering treatment

• Prospective cohort study (KLIMOP study)

• Patients with breast or colorectal cancer aged 70+ undergoing surgery along with 2 control groups – aged 70+ no cancer, and aged 50-69 with cancer

• Functional status measured with the Katz (basic ADL) and Lawton (instrumental ADL) scales over 1 year at 2 time points

• 179 older (age 70+) cancer pts, 341 younger (age 50-69) cancer pts, and 317 similar age controls
Declines in ADL, IADL, or Either in All Patients

(A) Percentage FS decline in breast and colorectal cancer patients aged ≥ 70 years and aged 50 - 69 years, and non-cancer patients aged ≥ 70 years over a 12-months observation period (raw estimates)

- ADL decline
  - Cancer patients aged 50 - 69 years: 16.7%
  - Cancer patients aged ≥ 70 years: 26.8%
  - Non-cancer patients aged ≥ 70 years: 16.7%

- IADL decline
  - Cancer patients aged 50 - 69 years: 12.6%
  - Cancer patients aged ≥ 70 years: 31.3%
  - Non-cancer patients aged ≥ 70 years: 17.4%

- FS decline
  - Cancer patients aged 50 - 69 years: 24.6%
  - Cancer patients aged ≥ 70 years: 43.6%
  - Non-cancer patients aged ≥ 70 years: 28.1%

* p < 0.02
* p < 0.001
Declines in Patients Without Chemotherapy

Percentage FS decline in breast and colorectal cancer patients aged ≥ 70 years and aged 50 - 69 years with no chemotherapy over a 12-months observation period (raw estimates)

- ADL decline
  - Cancer patients aged 50 - 69 years: 12.6
  - Cancer patients aged ≥ 70 years: 26.0

- IADL decline
  - Cancer patients aged 50 - 69 years: 6.9
  - Cancer patients aged ≥ 70 years: 30.8

- FS decline
  - Cancer patients aged 50 - 69 years: 17.6
  - Cancer patients aged ≥ 70 years: 44.5

* p < 0.02
* p < 0.001
* p < 0.001
Percentage decline in breast and colorectal cancer patients aged ≥ 70 years and aged 50 - 69 years with chemotherapy over a 12-months observation period (raw estimates)

- ADL decline: 20.3% for 50 - 69 years, 30.3% for ≥ 70 years
- IADL decline: 17.6% for 50 - 69 years, 32.9% for ≥ 70 years
- FS decline: 30.8% for 50 - 69 years, 39.4% for ≥ 70 years

* p = 0.20 for ADL decline
* p = 0.47 for IADL decline
* p = 0.33 for FS decline

Cancer patients aged 50 - 69 years vs. Cancer patients aged ≥ 70 years
Conclusions

• Strengths
  • Multi-centre study
  • Relevant outcome
  • Limited prior data

• Limitations
  • Significant rates of dropout and missing data
  • Functional status measured at only two time points
  • Functional status only by self-report

• Conclusion
  • Important data to counsel patients and families
  • What about interventions to prevent or treat decline?
Short communication

Oncologists' perceptions on the usefulness of geriatric assessment measures and the CARG toxicity score when prescribing chemotherapy for older patients with cancer

Erin B. Moth a,b,*, Belinda E. Kiely a,b, Natalie Stefanic b, Vasikaran Naganathan b,c, Andrew Martin b, Peter Grimison d, Martin R. Stockler a,b, Philip Beale a,b, Prunella Blinman a,b

a Concord Cancer Centre, Concord Repatriation General Hospital, Sydney, Australia
b University of Sydney, Sydney, Australia
c Centre for Education and Research on Ageing, Concord Repatriation General Hospital, Sydney, Australia
d The Chris O'Brien Lifehouse, Sydney, Australia
Usefulness of GA and CARG-I

• Growing evidence supporting value of GA (e.g. ASCO guideline, Mohile et al. JCO 2018) and CARG/CRASH in refining risk prediction and modifying treatment plans

• Enrolled 30 patients from 8 oncologists in Australia with solid cancer

• Performed GA and CARG, fed back info to oncologists, then surveyed oncologists about added value
Usefulness of GA and CARG-II

• Intermediate risk of toxicity 60%, high risk 17%
• GA provided new information in 40% (especially function and nutrition)
• GA led to supportive care interventions in 23%
• But only 7% had treatment modifications based on CARG, and none based on GA
So What?

• Australians are different!
So What?

• CARG may not be that useful (AUC 0.52) in Australia
So What?

• CARG may not be that useful in some health care systems
• 80% of oncologists reported that GA results were consistent with their practice; they may already be getting it right
• But also points out that it is hard to change human behaviour
• Need more trials showing value of GA (phase III RCT results coming soon...), more champions for GA, and more local implementation studies showing added value
Editor’s Pick:
Arti Hurria Manuscript of the Year
The prognostic value of G8 for functional decline

Camille Chakiba\textsuperscript{a}, Carine Bellera\textsuperscript{b,c}, Fanny Etchepare\textsuperscript{c}, Simone Mathoulin-Pelissier\textsuperscript{b,c}, Muriel Rainfray\textsuperscript{d,e}, Pierre Soubeyran\textsuperscript{a,d,f,*}

\textsuperscript{a} Department of Medical Oncology, Institut Bergonié, Bordeaux, France
\textsuperscript{b} Clinical and Epidemiological Research Unit, Institut Bergonié, Bordeaux, France
\textsuperscript{c} ISPED, INSERM U1219 Bordeaux Population Health Center, Epiteve Team, Bordeaux, France
\textsuperscript{d} Université de Bordeaux, France
\textsuperscript{e} Department of Geriatric Medicine, CHU Bordeaux, France
\textsuperscript{f} Inserm UMR1218, France
Methods

• Retrospective analysis of prospective data from pts aged 70+ with solid tumors/lymphoma starting first line chemotherapy

• Aims were to evaluate predictors of functional decline (0.5 ADL diff between baseline and cycle 2) and death within 6 months

• 292 patients (mean age 77)
  • 48 (16%) experienced decline
  • 41 (14%) experienced early death
## Results

### Predictors of Early Death

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<tr>
<th>Age</th>
<th>OR</th>
<th>95% CI</th>
<th>P-value</th>
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<td>0.66</td>
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<tr>
<td>76-80</td>
<td>0.96</td>
<td>[0.43; 2.18]</td>
<td>0.66</td>
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<tr>
<td>81-85</td>
<td>0.86</td>
<td>[0.32; 2.32]</td>
<td>0.66</td>
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<tr>
<td>&gt;85</td>
<td>0.25</td>
<td>[0.03; 2.19]</td>
<td>0.66</td>
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<th>OR</th>
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<th>P-value</th>
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<td>ref</td>
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<tr>
<td>Yes</td>
<td>4.13</td>
<td>[1.89; 9.04]</td>
<td>0.01</td>
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<table>
<thead>
<tr>
<th>Sex</th>
<th>OR</th>
<th>95% CI</th>
<th>P-value</th>
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<tr>
<td>Male</td>
<td>2.59</td>
<td>[1.12; 5.97]</td>
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### Predictors of Functional Decline

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<td>0.29</td>
</tr>
<tr>
<td>76-80</td>
<td>1.16</td>
<td>[0.56; 2.39]</td>
<td>0.02</td>
</tr>
<tr>
<td>81-85</td>
<td>0.637</td>
<td>[0.254; 1.597]</td>
<td>0.02</td>
</tr>
<tr>
<td>&gt;85</td>
<td>0.219</td>
<td>[0.027; 1.761]</td>
<td>0.02</td>
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<table>
<thead>
<tr>
<th>Sex</th>
<th>OR</th>
<th>95% CI</th>
<th>P-value</th>
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<tbody>
<tr>
<td>Female</td>
<td>ref</td>
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<td>0.46</td>
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<tr>
<td>Male</td>
<td>1.28</td>
<td>[0.66; 2.51]</td>
<td>0.02</td>
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<thead>
<tr>
<th>G8 score</th>
<th>OR</th>
<th>95% CI</th>
<th>P-value</th>
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<tbody>
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<td>Normal &gt;14</td>
<td>Ref</td>
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<td></td>
</tr>
<tr>
<td>Abnormal ≤14</td>
<td>4.38</td>
<td>[1.29; 14.92]</td>
<td>0.02</td>
</tr>
</tbody>
</table>

OR: odds ratio; CI: confidence interval.  
* Five patients were excluded from final analysis for missing data (creatinine clearance missing).
Study Adds to the Growing Literature in Support of G8

• Systematic review by Charlotte van Walree et al. JGO, 2019
  • Sensitivity and specificity of G8 for GA impairments was 85% and 64% (n=19 studies)
  • 15/24 studies (63%) found G8 associated with survival
  • 6/14 studies (43%) found association of G8 with treatment complications
  • 3/3 studies found G8 ≤ 14 was associated with functional decline

• Implementation considerations
  • Self-reported version: van Walree et al. JGO, 2019
  • Six-item version: Martinez-Tapia et al. Oncologist, 2016
  • Implementation study: Gulasingam et al. JAGS, 2019
  • ASCO guidelines: Mohile et al. JCO, 2018

• Evaluation of impact on decision making and interventions needed
Thank you!