The Role that Geriatricians Can Play in the Care of Older Patients with Cancer Across the Care Continuum

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Disclosures: Holly M. Holmes, MD

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Acknowledgement for use of slides: Tanya Wildes, MD, MSCI, Washington University School of Medicine

Objectives

- 1. Understand the potential role of primary and consultative geriatrics relating to the continuum of care of an older adult who has received a cancer diagnosis.
- 2. Understand and use geriatric medicine centered principles and cancer focused geriatric assessment to enhance the delivery of comprehensive supportive cancer care for older adults.

Aging of the global population

Trends in proportion of population age 60 and older, by region, 1990–2030^{2,3}





From Health in 2015: from MDGs to SDGs. World Health Organization



New cancers are increasing,



because the numbers of older people are increasing.

Smith BD, Smith GL, Hurria A, Hortobagyi GN, Buchholz TA. J Clin Oncol 27:2758-2765.

Common themes across oncology, supportive care, and geriatric medicine

- Workforce shortages
- Specialty identity
- Shifting to a chronic disease model
- Need to integrate care earlier
- Multidisciplinary focus

There are 3.6 geriatricians for every 10,000 people >75 years in the US.





Source: He, Wan, et al. U.S. Census Bureau, Current Population Reports, P23-209,65+ in the United States: 2005, U.S. Government Printing Office, Washington, DC, 2005.

Population by Age and Sex: 2040

Significant heterogeneity in survival



Upper, Middle, and Lower Quartiles of Life Expectancy for Women and Men at Selected Ages from the 2008 Life Tables of the United States

Walter LC and Schonberg MA. JAMA. 2014;311(13):1336-1347.



Treating Older Adults with Cancer

- Estimating Prognosis (with and without cancer)
- "Staging the Aging" (along with the cancer)
- Shared Decision Making and Communication

Models of shared cancer care



Cohen HJ. J Am Geriatr Soc 57:S300-S302, 2009.

Chemotherapy in older adults: Undertreatment or tailored treatment?

- Breast cancer¹⁻⁴
- Ovarian cancer^{4,5}
- Colorectal cancer⁶⁻⁸
- Prostate cancer^{9,10}
- Sarcoma¹¹

• Acute myeloid leukemia¹²⁻¹⁴

- Diffuse large B-cell lymphoma^{15,16}
- Melanoma^{17,18}
- Nonsmall cell lung cancer^{19,20}
- Pancreatic cancer²¹

¹Weiss Ann Surg Oncol 2013
²Malik J Cancer Epidemiol 2013
³van de Water Br J Surg 2012
⁴Bouchardy JCO 2007
⁵Fourcadier BMC Cancer 2015
⁶Ko Clin Colorectal Cancer 2015
⁷Quipourt JAGS 2011
⁸Wildes J Geriatr Oncol 2010
⁹Bratt Eur Urol 2015
¹⁰Chen Int J Radia Oncol Biol Phys 2014
¹¹Al-Refaie Ann Surg Oncol 2010
¹²Finn Curr Opin Hematol 2016
¹³Master Anticancer Res 2016
¹⁴Medeiros Ann Hematol 2015
¹⁵Ha Cancer Res Treat 2016

¹⁶Hamlin Oncologist 2014
 ¹⁷Balch Ann Surg Oncol 2015
 ¹⁸Monroe Ann Surg Oncol 2013
 ¹⁹Hardy Cancer 2009
 ²⁰Ramsey JCO 2004
 ²¹Enewold J Gastrointest Cancer 2015

Chemotherapy in the noncurative setting: Overtreatment

- Aggressive care in the end-of-life is common
 - 4.5% of Medicare beneficiaries receive chemotherapy within 14 days of death¹
 - Chemotherapy use in last 30 days similar across age spectrum²
- Chemotherapy use in the end-of-life:
 - No difference in survival³
 - Quality of death poorer³
 - Less likely to die in their preferred place⁴

¹Wang J Geriatr Oncol 2016 ²Mack Cancer 2015 ³Prigerson JAMA Oncol 2015 ⁴Wright JAMA 2016

Older people are at greater risk of toxicities

- Decline in renal function with age
- Similar benefits from adjuvant chemotherapy for breast cancer, but higher side effects and TRM with age.
- Similar benefit in DFS or OS with 5-FU based tx but greater risk of heme toxicities.
- Greater risk of death with induction therapy and SCT for leukemias.

The Oncologist's Focus



Hanahan and Weinberg. Cell 2011.

The Gerontologist's Focus



Lopez-Otin C, The Hallmarks of Aging. Cell 2013.

My bias: the Geriatrician's Focus



Cases: With and Without Geriatric Assessment (GA)

Case 1

- 78 year old woman with breast cancer recurrence
- Referred to Geriatrics because she thinks she's "too old for treatment"
- Had left breast cancer in 1998
- Now presents with right breast cancer

Case 2

- 73 year old man diagnosed with pancreatic cancer
- Seems "older than his age" and his surgeon is concerned about his likelihood of recovering from surgery
- His daughter moved in with him after his wife died one year ago

Cases: without GA

Case 1

 Patient refuses treatment and is lost to follow up (?)

Or

 Patient completes partial treatment and stops AI after 8 months

Case 2

 Receives FOLFIRINOX and is admitted to the ICU; dies of sepsis (?)

Cases: with GA

Case 1

- GA: FIT, no issues except tremor and spinal stenosis
- Encourage to pursue "the same therapy a 50 year old woman in your situation would receive"
- Completes standard therapy but unable to complete AI

Case 2

- GA: FRAIL, due to moderate dementia and severe comorbidity >> safe home care arranged
- Hospitalized for dehydration after 1st dose gemcitabine
- Enrolls in hospice and lives 11 months

NCCN Senior Adult Oncology Guidelines

- Is the patient at moderate or high risk of dying or suffering from cancer given his/her overall life expectancy?
- Does the patient have decision-making capacity? Are goals and values consistent with treating cancer?
- Are there risk factors for adverse outcomes from cancer treatment?

Geriatric Assessment (GA)

- Test multiple domains that are associated with bad outcomes.
- Use of validated tools to measure common geriatric problems.

 Ability to diagnose and intervene to treat reversible problems.



Recommendations for Geriatric Assessment



SIOG.org

Incorporating GA into cancer care

- **Comorbid conditions**: number and severity
- **Medications:** drug interactions, inappropriate meds
- **Cognitive**: screening tools for cognition and executive function
- Affective: screening for depression and anxiety
- Nutritional: weight loss, nutrition risk
- **Social**: living situation, support at home, ability to get meds
- Functional: activities/instrumental activities of daily living
- **Physical**: gait speed, timed-up-and-go, short physical performance battery



Mohile and Rodin. JCO 2007;25:1936–1944. Wildiers et al. JCO 2014.

Utility of Comprehensive Geriatric Assessment in Older Adults with Cancer



CRASH Score to Predict Toxicity

| Predictors | | Points | | | |
|-------------------------|--------------|-----------|-----------|--------|--|
| | | 0 | 1 | 2 | |
| Hematologic score | | | | | |
| | Diastolic BP | ≤72 | >72 | | |
| | IADL | 26-29 | 10-25 | | |
| | LDH | 0-459 | | >459 | |
| | Chemotox | 0-0.44 | 0.45-0.57 | >0.57 | |
| Nonhematologic score | | | | | |
| | ECOG PS | 0 | 1-2 | 3-4 | |
| | Cognition | MMSE 30 | | <30 | |
| | Nutrition | MNA 28-30 | | MNA<28 | |
| | Chemotox | 0-0.44 | 0.45-0.57 | >0.57 | |

Extermann, et al. Cancer 2012;118:3377-86.

CRASH Score to Predict Toxicity

Heme score





Non-heme score

Extermann, et al. Cancer 2012;118:3377-86.

The CARG Score



Hurria, et al. JCO 2011;29:3457-3465

CARG Score Validation

A Development and

B Validation cohorts





GA in Surgical Oncology

CATEGORIZATION BASED ON CGA DOMAINS

| | FIT | FRAIL |
|--------------|--------------------------------|---------------------------|
| | All of: | Any of: |
| Function | ADL >18 and IADL>43 | ADL <19 |
| Comorbidity | None >grade 2 OR <3 grade 2 | Any grade 4 >2 grade 3 |
| Polypharmacy | <5 daily meds | > 7 daily meds |
| Nutrition | MNA ≥24 | MNA <17 |
| Cognition | MMSE >26 | MMSE <24 |
| Depression | GDS >13 | |

Prediction of toxicity:

3.13 (1.65–5.92) times the odds of severe toxicity for frail vs. nonfrail based on CGA in 178 patients 70+ years with colorectal cancer

IADLs associated with perioperative complications

Kristjansson SR, et al. Crit Rev Oncol Hematol. 2010;76:208-17.

GA: Predicting toxicity in myeloma

Non-hematologic Adverse Events



Discontinuation of Therapy



CGA: Predicting Early Mortality

| Table 4. Logistic Regression Model Analysis for Early Deaths (within 6 months) That Occurred for All Patients Who Received First-Line Chemotherapy (n = 339) | | | | | | | |
|--|------------|--------------|------|--|--|--|--|
| Risk Factor* | Odds Ratio | 95% CI | Р | | | | |
| Sex | | | | | | | |
| Female | 1 | Reference | | | | | |
| Male | 2.40 | 1.20 to 4.82 | .013 | | | | |
| Tumor stage | | | | | | | |
| Localized | 1 | Reference | | | | | |
| Advanced | 3.9 | 1.59 to 9.73 | .003 | | | | |
| Mini Nutritional Assessment | | | | | | | |
| Good nutrition, score > 23.5 | 1 | Reference | | | | | |
| At risk/poor nutrition, score \leq 23.5 | 2.77 | 1.24 to 6.18 | .013 | | | | |
| Timed Get Up and Go | | | | | | | |
| No impairments (≤ 20 seconds) | 1 | Reference | | | | | |
| Impaired | 2.55 | 1.32 to 4.94 | .006 | | | | |

NOTE: Model was adjusted for treatment site (regional and teaching hospitals *v* community hospitals).

*Age, tumor site, Activities of Daily Living, Mini-Mental State, platelet count, and performance status were also included in the model but not retained because they were not significant.

Soubeyran J Clin Oncol 2012

Utility of Comprehensive Geriatric Assessment in Older Adults with Cancer



A conceptual model of decision-making



Patient Preferences



Figure 2. Treatment Preferences According to the Burden and Outcome of Treatment.

CGA to Guide Treatment Planning

- 161 patients age 73-97
- Colorectal & GI > Breast > Lung > Other
- CGA: severe comorbidity in 75, ADL impaired in 52, decreased cognition in 42, malnutrition in 104, depression in 39 people
- Results:
 - Same dose 82 (53 required geriatric intervention)
 - Lower dose 34
 - Higher dose 45

Treatment Modifications Based on CGA



- French ASRO study
- N=217, mean age 83 years
- 40% treatment recommendation modifications
- On multivariate analysis: ADL dependence and Fried's frailty markers associated with treatment modifications

CGA for treatment allocation



Utility of Comprehensive Geriatric Assessment in Older Adults with Cancer



CGA intervention associated with improved chemotherapy tolerance

- Pre-post study design
- N=135, age 70+ undergoing chemotherapy
- Participants completed self-report CGA
- In intervention arm, high-risk patients referred to geriatrician
- Outcomes:
 - Intervention group were more likely to complete treatment as planned (33.8% vs 11.4%, p=0.006) and required fewer treatment modifications (43.1 vs 68.8%, p=0.006)
 - Rate of grade 3+ toxicity similar (43.8% vs 52.9%, p=0.29)

Gap 70+ Study



GA-driven recommendations

How can GA drive non-oncologic intervention and cancer treatment decision making?

- Panel of 30 experts
- 3 rounds of survey
- 67% agreement = consensus



Mohile. JNCCN 2015;13:1120-30.



Models of shared cancer care



Cohen HJ. J Am Geriatr Soc 57:S300-S302, 2009.

Care of older survivors

- Adverse event management
- Short- and long-term toxicity assessment
- Ongoing surveillance and screening
- End of life care

Cancer Increases the Odds of Frailty and Vulnerability in Older Persons



Mohile S, et al. J Natl Cancer Inst 2009;101:1206–1215

Increased Prevalence of Geriatric Syndromes in Cancer Survivors

- Vision loss
- Hearing loss
- Eating problems
- Memory loss/dementi a
- Incontinence
- Osteoporosis
- Depression
- Falls Mohile S, et al. J Clin Oncol 29:1458-1464.



Fig 1. Prevalence of geriatric syndromes (weighted prevalence, χ^2 tests; P < .001).

The importance of shared care at the end of life

- Older people less likely to receive high quality palliative care: less informed, not assessed, undertreated
- Older patients more likely to value quality of life and function
- Oncologists and older patients want primary care involved

Lindskog et al Eur J Cancer 2015 Owusu, J Amer Geriatr Soc 2009.



Slide courtesy of Tanya Wildes

Summary

- Incorporating geriatricians or geriatrics care principles into cancer care can provide value information on prognostication and modification to treatment plans with a goal toward more patient-centered care.
- Shared care models between oncology, palliative care, and geriatrics may represent best supportive care.

Thank you

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