Screening the Older Surgical Oncology Patient: Opportunities to Impact Outcomes

Cassandra Vonnes MS ARNP GNP-BC
AOCNP FAHA
NICHE Coordinator
Moffitt Cancer Center
Objectives

• Understand why the presence of one or more geriatric syndromes can have a profound effect on perioperative risk

• Determine geriatric assessment tools to quantify function and frailty in the older adult

• Apply current clinical guidelines for assessment of perioperative risk in the older adult requiring oncological surgery
Cancer in the Older Adult

• Old age is the number one risk factor for cancer
• As the population ages, the incidence for cancer has been reported to be up to 11 times higher in people over 65
• Nearly two thirds of solid tumors are diagnosed in the same age group

The Issue

• 55% of all operative procedures performed in the U.S. are 65 years or older
• Nearly 50% of Americans will have an operation after age 65
• 23.3% risk of being unable to return home
• 35% decline in some basic ADL
• 50% of elderly patients experienced some kind of complication related to hospitalization

Geriatric Surgery

• Advanced age alone does not preclude surgical interventions aimed at improving function or quality of life.

• Management of elderly patients with cancer that require surgery is challenging with a greater risk of complications and mortality

• For solid tumors, surgery provides the best curative opportunity for patients

Functional Reserve

Even patients without apparent deficits may have little functional reserve so that an acute illness or insult can lead to disability and dependence far more frequently than among younger individuals.

Enhanced Recovery After Surgery (ERAS)

• Developed in Denmark in 1990s UK since 2002
• Professor Henrik Kehlet MD PhD
• Originally colorectal
• Structured approach to whole patient pathway
• Evidenced based approach
• Patient is active participant in preparation and recovery

www.erasociety.org
ERAS: Begins in preoperative period

- Pre-op clinic
- Optimize patient- BP, DM
- Health promotion
- Discharge planning/expectations
- Patient Diary /Education
- CHO Loading
- No bowel prep
ERAS: Intra-operative

- Minimal invasive surgery
- Individualized goal-directed fluid therapy
- Avoid crystalloid overload
- Epidural/ spinal/regional
- Hypothermia prevention
ERAS: Post-op and Follow-up

• No routine, NG tubes or drains
• Active mobilization
• Early oral hydration and nutrition
• IV, catheters removed early
• Avoid opiate-based analgesia

• Discharge as close to planned day as possible
• Support services as needed
• Phone call with-in 24 hours
Hmmmmm....my patient will undergo surgery.....hmmmmm...
Details.....

• My patient is old....
• And has several diseases and taking corresponding medications...
• And has another surgical disease that can worsen or may interact with her other diseases and medications
• Will need anesthesia...(Type? Effects? Complications?)
• And has a risk for functional decline and disability
• And can possibly die on me.....
Optimal Perioperative Management of the Geriatric Patient

Best Practice Guidelines
Immediate Preoperative Management

- patient goals, & preferences
- advance directives
- Limit preoperative fasting
- antibiotic prophylaxis
- VTE prevention
- medication management

Intraoperative Management

- Use of anesthesia in older adults
- pain control in older adults
- nausea and vomiting
- prevent postop complications
- fluid management;
- targeting physiologic parameters

Postoperative Management

- prevent postop delirium, pulmonary complications and functional decline
- postoperative nutrition
- interventions to prevent UTIs, pressure ulcers and falls
A. R. Feinstein: Father of “comorbidity”

- Physician and epidemiologist
- How to evaluate a patient who suffers from a number of diseases simultaneously?


30 YEARS OF COURAGE
Frequency of Main Comorbidities

- Hypertension: 50-60%
- Coronary artery disease: 15%
- Cardiac failure: 15%
- Dementia: 30%
- Diabetes: 10-20%
- Repeated falls: 25%
- Arthrosis: 30%
- Hearing loss: 35%
- Cancer: 20%
- Vision loss: 20%

Beyond 70 years = 5 comorbidities

Charlson Comorbidity Index (CCI)

- Predicts the ten-year mortality for a patient with range of comorbidities
- Each condition is assigned a score of 1, 2, 3.
- Scores are summed to provide a total score to predict mortality

1 each: MI, HF, PVD, dementia, CVD, COPD, connective tissue disease, ulcer, chronic liver disease, DM.

2 each: Hemiplegia, CKD, DM with EOD, tumor, leukemia, lymphoma.

3 each: Moderate or severe liver disease.

6 each: Malignant tumor, metastasis, AIDS.

Cumulative Illness Rating Scale in Geriatrics (CIRS-G)

- Total Severity Score (TSC) = sum of each 14 individual system score
- Severity (SV) = mean of first 13 categories (excludes psychiatric)
- Comorbidity Index (CM) calculated as categories >2

Evaluation of comorbidities and preoperative testing

• The ASA Practice Advisory for Preanesthesia Evaluation recommends assessment of anesthetic risks associated with the severity of the patient’s medical condition(s) and the invasiveness of the proposed surgical procedure

• Routine preoperative testing is not recommended, even in older adults

ASA Physical Status Classification System

• ASA I  A normal healthy patient
• ASA II  A patient with mild systemic disease
• ASA III A patient with severe systemic disease
• ASA IV  A patient with severe systemic disease that is a constant threat to life
• ASA V   A moribund patient who is not expected to survive without surgery

Where to begin?

1. Risk index
2. Surgical risk for cardiac events
3. Patient functional capacity
4. Frailty
VA Surgical Quality Improvement Program (VASQIP)

Independent variables in predicting all cause mortality:

- PVD, CVD, disseminated CA, HF, ESRD on HD, COPD, Recent weight loss
- Classified by death/complications with distribution by ASA Class
- Risk of death/complications both perioperative and all cause mortality

Cardiac events in non-cardiac surgery

• 2.5% of unselected patients aged >40 years had a 30-day incidence of cardiac events after surgery

• Cardiac death is the first symptom in 50% of patients with heart disease

Factors predictive of MICA (myocardial infarction/cardiac arrest)

• Type of surgery
• Dependent functional status
• Abnormal creatinine
• American Society of Anesthesiologists’ (ASA) class
• Increased age
Cardiovascular Risk in non-cardiac surgery

Risk Stratification for Non-cardiac Procedures

- **High (Cardiac Risk ≥ 5%)**
  - Vascular surgeries (aortic major vascular, peripheral vascular)

- **Intermediate (Cardiac Risk ≥ 1.0% and <5%)**
  - CEA and endovascular AAA, H&N, intraperitoneal and intrathoracic, ortho, prostate surgeries

- **Low (Cardiac risk < 1.0%)**
  - Endoscopic procedures, superficial surgeries, cataract, breast, OP surgery
Scales to measure frailty, disability, and comorbidity/cardiac surgery risk
Inflammation, Androgen deficiency, Insulin resistance

Sarcopenia

Slowness Weakness Inactivity Fatigue Weight Loss

Subclinical multisystem dysfunction

CV disease “wear & tear” Genetic risk

Fried Frailty Index

- Total number of deficits measured
e.g. in a dataset with 50 health deficit measures, a person with 10 things wrong (10 deficits) has a frailty index of 10/50 = 0.20.

The frailty phenotype:
- Slow mobility
- Weakness
- Weight loss
- Decreased activities
- Exhaustion

Balducci Frailty Criteria

Age
- ≥ 85 Years of age

ADLs
- Dependence for ≥ 1

Comorbidity
- 3 or more

Geriatric Syndromes
- Presence 1 or more
Assessment of Functional Capacity

• Functional status=metabolic equivalents

1 MET is defined as 3.5 mL O2 uptake/kg per min (resting oxygen uptake in a sitting position).

• Set of questions to determine a patient's functional capacity

• Utilized to risk stratify and determine need for CV testing
• Can take care of self, such as eat, dress, or use the toilet (1MET)
• Can walk up a flight of steps or a hill or walk on level ground at 3 to 4 mph (4 METs)
• Can do heavy work around the house such as scrubbing floors or lifting or moving heavy furniture or climb two flights of stairs (between 4 and 10 METs).
• Can participate in strenuous sports such as swimming, singles tennis, football, basketball, and skiing (>10 METs)

*J Am Coll Cardiol.* 2014;64(22):e77-e137. doi:10.1016/j.jacc.2014.07.944
Preoperative assessment in elderly cancer patients (PACE)

Shall we operate?

Prospective international study from 5 countries to outline the fitness of the elderly surgical cancer patient

Components of PACE

- Mini-mental state inventory MMS 10–30
- Activities of daily living  ADL  0–6
- Instrumental activities of daily living IADL  0–8
- Geriatric depression scale  GDS  0–15
- Brief fatigue inventory BFI  0–90
- ECOG performance status  PS 0–4
- American Society for Anesthesiologist Scale ASA 1–4
- Satariano’s index of co-morbidities  SIC  0–6
Comprehensive Geriatric Assessment

- Depression (GDS)
- Cognitive Status (MMSE)
- Geriatric Syndromes
- Nutritional Status (MNA)
- Functional Status (IADL, ADL)
- Poly-pharmacy (>5 meds)
- Co-morbidity
CGA

MAJOR COMPONENTS
• Functional capacity
• Fall risk
• Cognition
• Mood
• Polypharmacy
• Social support
• Financial concerns
• Goals of care
• Advanced care preferences

Additional components:
• Nutrition/weight change
• Urinary continence
• Sexual function
• Vision/hearing
• Dentition
• Living situation
• Spirituality

THIRTY YEARS OF COURAGE
Consensus Recommendations for CGA

• SIOG International Society of Geriatric Oncology Consensus on Geriatric Assessment in Older Patients With Cancer (2014) Journal of Clinical Oncology Vol. 22, 24

• NCCN Clinical Practice Guidelines Senior Adult Oncology 2014

• IOM

Delivering High Quality Cancer Care 2013
Barriers

• Time constraints
  – provider and patient

• May not need comprehensive evaluation

• Reimbursement

• Identify potential patients

• Targeted interventions

• Interprofessional team
Senior Adult Oncology Screening Instrument SAOP

• More than 8 years of clinical use
• 63% of senior cancer patients needed psychosocial counseling
• 40% dietary intervention
• 14% medication counseling and assistance (probably underestimated)
• Validated against a Multidimensional Geriatric Assessment (MGA)

SAOP-3

- Social Support
- Depressive symptoms
- QOL
- HRQOL
- ADL
- IADL
- Weight loss
- Nutrition
- Sleep
Cognition

- 3 word recall

- Clock

Senior Adult Supplement Screening Questionnaire (SAOP3)

The Mini-Cog Evaluation™

1. Instruct the patient to listen carefully and repeat the following words: [ ] Apple [ ] Watch [ ] Penny

2. Instruct the patient to draw a clock and put in all the numbers where they go. Then instruct the patient to place the hands of the clock to represent the time “forty-five minutes past ten o’clock.”

3. Ask the patient to repeat the three words previously given: ___________ ___________ ___________

Scoring:
Number of correct items recalled: _____ (if 3, then Normal. Stop; if 0, then cognitive impairment. Stop)
If 1-2, is clock drawing abnormal? [ ] Yes (cognitive impairment) [ ] No (Normal)
Psychosocial items 1-3: if at least one Yes response, then consult Social Work
ADL/IADL mobility items (6a-6c): if at least two Yes responses, then consult Outpatient Physical Therapy
ADL/IADL items (6c-6m): if at least one No response, then consult Outpatient Occupational Therapy
Quality of Life (QOL) and self-rated health items (4-5): if score less than 8, then consult Social Work
Nutrition items (7-9): if at least two Yes responses, then consult Outpatient Nutrition
Mini-Cog: if cognitive impairment, then consult Outpatient Occupational Therapy or Speech Language Pathologist
Number of medications greater than 5, then consult Pharmacy
Social Worker Geriatric Depression Scale Score: ____, if score is greater than 5, then consult Behavioral Medicine
Referral: [ ] Yes [ ] No

Targeted Interventions

- Mini-Cog
  - SW, OT
  - SLP
- Mobility, PT, Gait and Balance Clinic
- Falls
  - Pharmacist
  - Gait and Balance Clinic
- Nutrition
  - RD
- ADL OT
- Polypharmacy
  - Pharmacist
- QOL, Depression
  - SW, Behavioral Health

THIRTY YEARS OF COURAGE
What the admitting care team can do

- Establish baseline
- Compare baseline
- Prevent iatrogenic illness
- Understand patient values
- Initiate discharge planning
- Ongoing communication with family
Summary

• Age is not an accurate predictor of condition or function
• Co-morbidities are common
• Homeostatic control is less efficient
• The geriatric surgical oncology is complex
• Geriatric care is best provided by an inter-professional team