

Performance of geriatric assessments in India - adaptation to our scenario

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DISCLAIMER

- The term 'older adult with cancer' or 'older adult oncology' preferred over terms like geriatric/elderly
- No relevant disclosures/conflicts of interest

Outline of the talk

- What is geriatric assessment?
- Need for geriatric assessment
- Components of GA and the Indian scenario
 - Status of geriatric assessment in India
 - Barriers
 - Future perspectives



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ASCO SPECIAL ARTICLE

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ESMO –SIOG module

[J Oncol Pract](#). 2018 Feb; 14(2): 85–94.

doi: [10.1200/JOP.2017.026435](https://doi.org/10.1200/JOP.2017.026435)

PMCID: [PMC5812308](#)

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What Every Oncologist Should Know About Geriatric Assessment for Older Patients With Cancer: Young International Society of Geriatric Oncology Position Paper

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Vol. 39, No. 19, July 1, 2021

OVERVIEWS

Caring for Older Adults With Cancer

- ✓ Geriatric Oncology Comes of Age: Advancing the Science of Caring for Older Adults With Cancer

Dale et al.
pp. 2055-2057
[Citation](#) | [Full Text](#) | [PDF \(103 KB\)](#)

REVIEW ARTICLES

Caring for Older Adults With Cancer

- ✓ Geriatric Assessment and Management in Cancer

Bischoff et al.



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Geriatric oncology

Published: June 1, 2018

Executive Summary

With advances in medicine, early cancer diagnosis, and increases in the standard of living, the population of patients with cancer aged 65 years or more is expected to rapidly increase in years to come. With it will come an urgent need in how to manage this growing population in a way that meets their specific needs. In this June issue of *The Lancet Oncology*, a new Series on geriatric oncology examines the issues surrounding the classification, management, and biology of elderly patients with cancer. Arya Biragyn and others discuss gut dysbiosis and inflammaging as a possible cause of cancer during ageing; Arti Hurria and colleagues discuss the use of the geriatric assessment to decide whether age should be classified chronologically or functionally; and a position statement from the International Society of Geriatric Oncology discusses the management of elderly patients with renal cell carcinoma. Collectively, we hope these papers will show how current issues in geriatric oncology can develop ever more precise and personalised therapeutic approaches to all cancers, especially for those in old age.



Related content

ARTICLES

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Musings

The cancer-patient-suffering continuum

We, the trainees at the Tata Memorial Hospital (TMH), Mumbai, known for its sheer volume of patients with cancer treated east of the Atlantic, always feel pride in providing care to our



Big question in
geriatric oncology

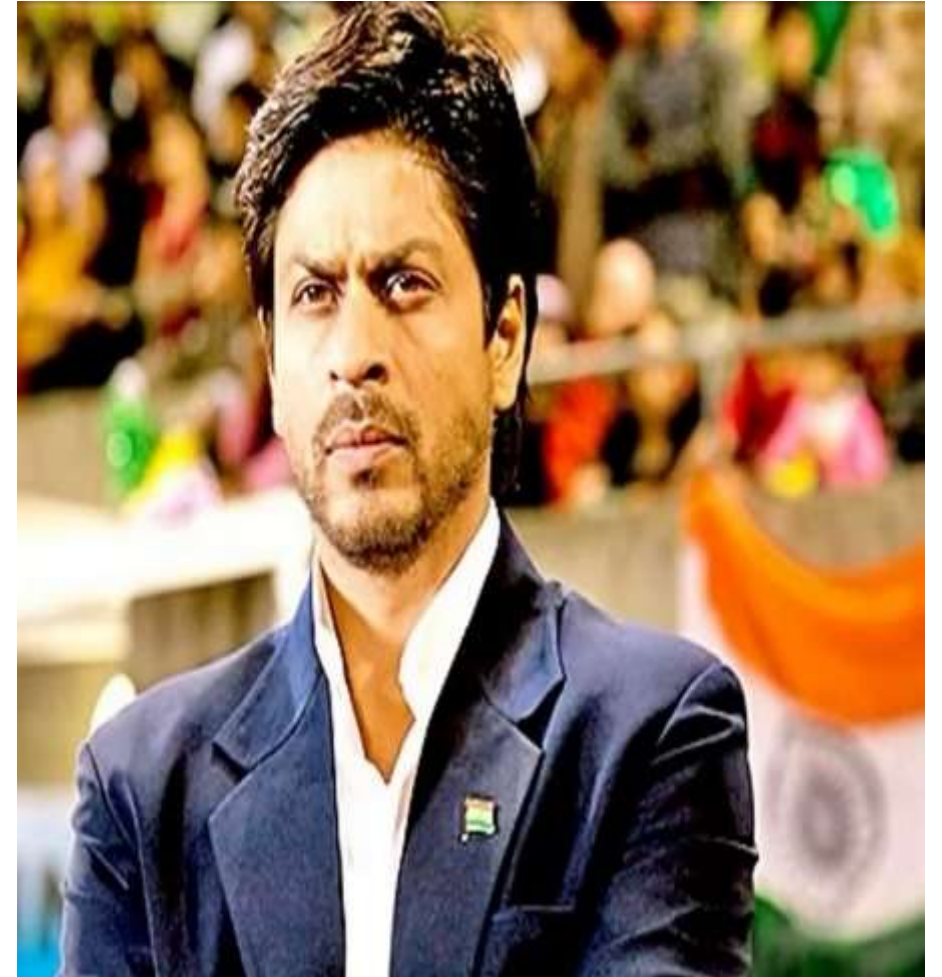
- *TO TREAT OR NOT TO TREAT!*

FIT

VS.

FRAIL

**Functional age – determination
and maintenance**



Complex decision making

83-year-old patient with
TNBC
pT2N3 disease

65-year-old patient with
aggressive lymphoma

- Heterogeneous group of patients
 - Patient factors: comorbidities, functional issues, syndromes and social support
 - Cancer factors: benefit of treatment
- Increased risk of adverse effects of treatment (esp financial and QOL)
- Not included in trials

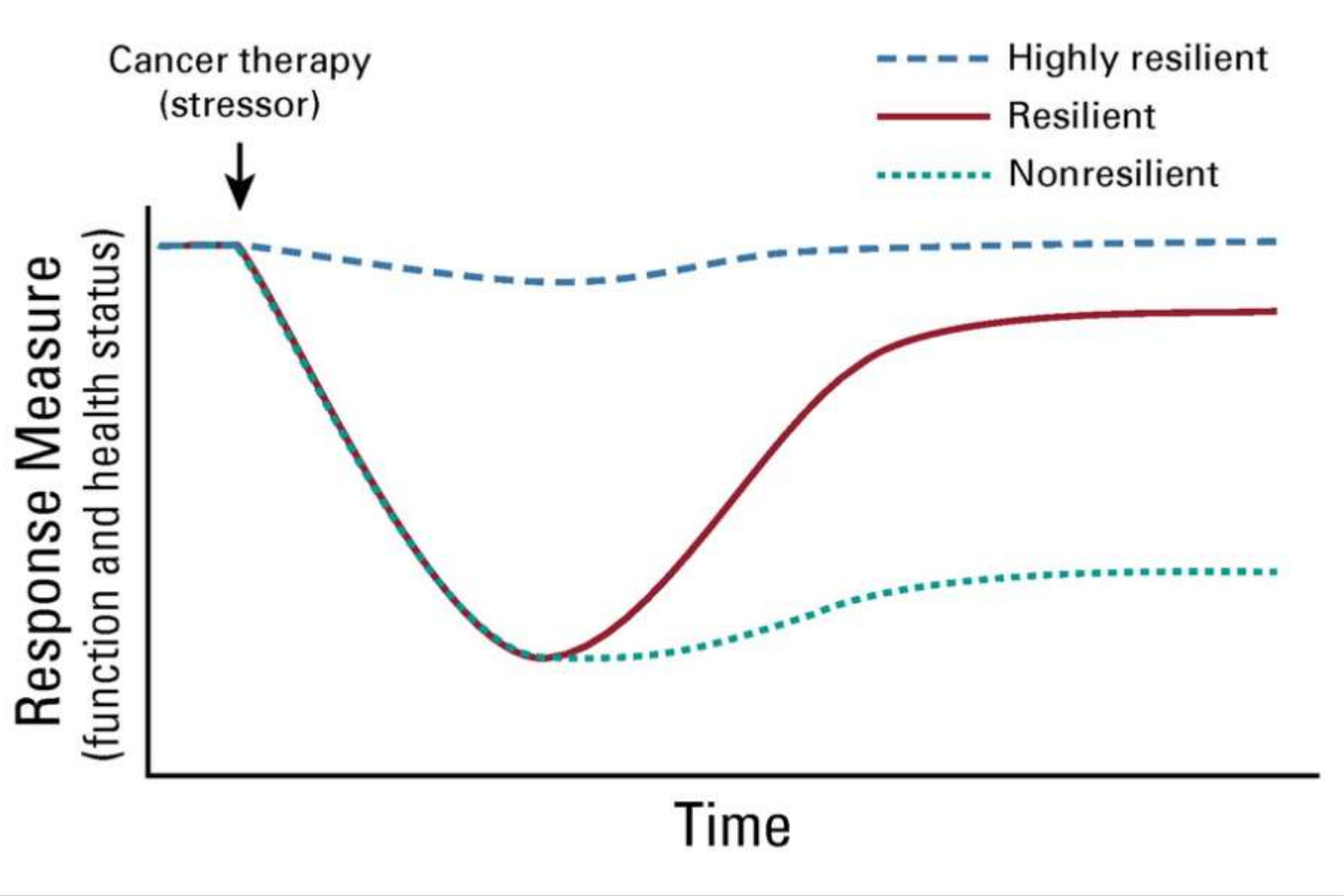
67-year-old patient with
metastatic Ca stomach

75-year-old patient HR
positive pT1cN0 Ca breast

80-year-old patient with
positive pT1cN0 Ca breast

82-year-old patient
requiring adjuvant
immunotherapy for
melanoma

72-year-old patient with
stage 3 Ca colon



What is geriatric assessment

- Multidimensional interdisciplinary diagnostic process
- With oncologist, a geriatrician, a pharmacist, social worker
- Determining a frail older person's medical, psychological and functional capability
- To develop a coordinated and integrated plan for treatment and long-term follow-up
- Identifies problems that are not identified by routine patient history and physical examination
- Tailored interventions
- Discuss the patient's preferences and treatment goals

How does a GA help?

- Identifying impairments
- Clarifying patient priorities
- Predicting survival and toxicity (chemo and postoperative) risk
- Establishing a pretreatment baseline
- Developing intervention
- Change in treatment plan in 15-40% patients

Mohile SG, et al. Practical Assessment and Management of Vulnerabilities in Older Patients Receiving Chemotherapy: ASCO Guideline for Geriatric Oncology. *J Clin Oncol*. 2018;36(22):2326-2347.

Mohile SG, et al. Evaluation of geriatric assessment and management on the toxic effects of cancer treatment (GAP70+): a cluster-randomised study. *Lancet*. 2021 Nov 20;398(10314):1894-1904.

Impact of geriatric assessment

- Initial treatment plan was modified in a median of 39% of patients after geriatric evaluation, of which two thirds resulted in less intensive treatment
- GA based interventions in >70% of patients, even in studies that included all-comers

Is our clinical judgment not enough?

- Poor correlation between the clinical judgment of frailty and objective assessment scales
- Vulnerabilities in at least one geriatric domain in 98% of the Indian geriatric oncology patients
- Polypharmacy more than 50%
- Only 4 patients (2%) scored normally in all the tested geriatric domains

ECOG PS and CGA correlation

- With each 1 unit increase in the ECOG PS, the odds of having ≥ 2 geriatric abnormalities increased by 4.69
- Older patients with cancer with an ECOG PS ≥ 1 are very likely to harbor non-oncological vulnerabilities
- May correlate with abnormalities in function and falls, psychological assessment, and cognition
- Poor correlation with nutritional status and comorbidities
- Poor correlation with chemotherapy toxicities

Gattani S, et al. ECOG performance status as a representative of deficits in older Indian patients with cancer: A cross-sectional analysis from a large cohort study. *Cancer Res Stat Treat* 2022;5:256-62

Ostwal V, et al. Cancer Aging Research Group (CARG) score in older adults undergoing curative intent chemotherapy: a prospective cohort study. *BMJ Open* 2021;11:e017376

What is included in 'geriatric assessment'?

- Screening
- Comprehensive geriatric assessment (CGA)

Screening tools

- G8 – more sensitive
- VES13 – more specific
- fTRST

Soubeyran P, *et al.* Screening for vulnerability in older cancer patients: The Oncodage prospective multicenter cohort study. PLoS One 2014;9:e115060.

Joshi A, *et al.* Agreement analysis between three different short geriatric screening scales in patients undergoing chemotherapy for solid tumors. J Can Res Ther 2017;13:1023-6

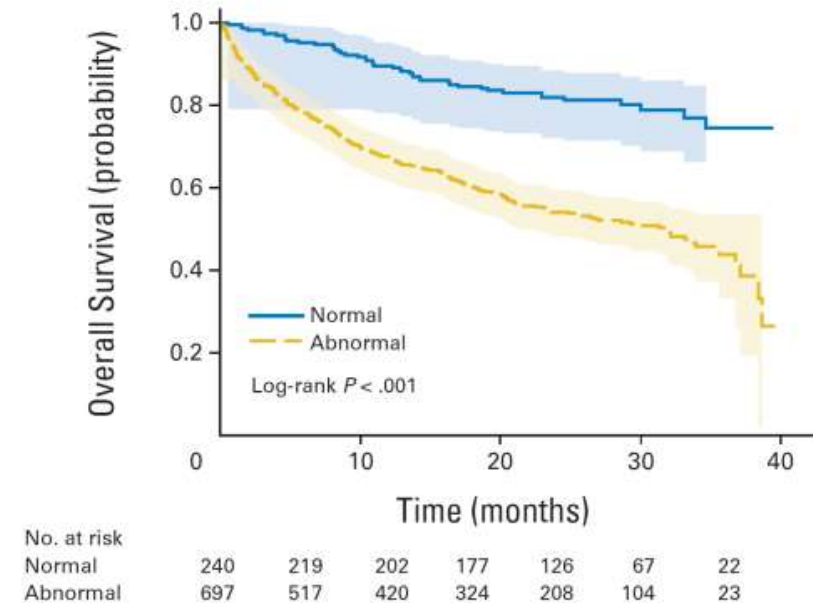
G-8

- 8 items
- Seven items issued from MNA questionnaire
- One item relative to age of patient (<80; 80-85; >85)
- Less than 10 minutes (median: 4 min.)

G8 <14

	Items	Possible answers (score)
A	Has food intake declined over the past 3 months due to loss of appetite, digestive problems, chewing or swallowing difficulties?	0 : severe decrease in food intake
		1 : moderate decrease in food intake
		2 : no decrease in food intake
B	Weight loss during the last 3 months	0 : weight loss > 3 kg
		1 : does not know
		2 : weight loss between 1 and 3 kgs
		3 : no weight loss
C	Mobility	0 : bed or chair bound
		1 : able to get out of bed/chair but does not go out
		2 : goes out
E	Neuropsychological problems	0 : severe dementia or depression
		1 : mild dementia or depression
		2 : no psychological problems
F	Body Mass Index (BMI (weight in kg) / (height in m ²))	0 : BMI < 19
		1 : BMI = 19 to BMI < 21
		2 : BMI = 21 to BMI < 23
		3 : BMI = 23 and > 23
H	Takes more than 3 medications per day	0 : yes
		1 : no
P	In comparison with other people of the same age, how does the patient consider his/her health status?	0 : not as good
		0.5 : does not know
		1 : as good
		2 : better
	Age	0 : >85
		1 : 80-85
		2 : <80
	TOTAL SCORE	0 - 17

A score of less than 14 is abnormal and correlates with OS



fTRST – Flemish version of Triage Risk Screening Tool

- A score greater than 1 is considered as being a risk for a geriatric profile

Item	Score	
	Yes	No
1. Presence of cognitive impairment (disorientation, diagnosis of dementia, or delirium)	2	0
2. Lives alone or no caregiver available, willing, or able	1	0
3. Difficulty with walking or transfers or fall(s) in the past 6 months	1	0
4. Hospitalized in the last 3 months	1	0
5. Polypharmacy: ≥ 5 medications	1	0

Kenis C, et al. Performance of two geriatric screening tools in older patients with cancer. J Clin Oncol. 2014;32(1):19-26.

VES13 >3

- Self-administrated questionnaire
- ≥ 65 years
- Increased risk of death or functional decline
- 13 items concerning
- Perception of health status, example of everyday activity, difficulty performing activities related to his health or physical condition
- less than 10 min (median: 4')

In general, compared to other people your age, would you say that your health is:

- Poor
- Fair
- Good
- Very Good
- Excellent

How much difficult, on average, do you have with the following physical activities?

	NO DIFFICULTY	A LITTLE DIFFICULTY	SOME DIFFICULTY	A LOT OF DIFFICULTY	UNABLE TO DO
1. Stooping, crouching or kneeling?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2. Lifting or carrying objects as heavy as 10 pounds?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3. Reaching or extending arms above shoulder level?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4. Writing or handling and grasping small objects?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5. Walking a quarter of a mile?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6. Heavy household such as scrubbing floors or washing windows?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Because of your health or physical condition, do you have any difficulty:

	YES	NO	DON'T DO
7. Shopping for personal items?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8. Managing money (like keeping track of expenses or paying bills)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9. Walking across the room? USE OF CANE OR WALKER IS OKAY?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10. Do you get help with walking?	<input type="checkbox"/>	<input type="checkbox"/>	
11. Doing light housework (like washing dishes, straightening up, or light cleaning)?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
12. Bathing or showering?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
13. Is your health the reason for not bathing or showering?	<input type="checkbox"/>	<input type="checkbox"/>	

10 pounds is around 4.5kg

Quarter a mile is around 0.5km

Screening in India

- Abnormal G8 cut-off score < 12 seems more appropriate in older Indian patients with cancer
- $G8 < 12$ predicts for the presence of non-oncological vulnerabilities and shorter survival
- Lowering the cutoff of G8 to 12 translated to a 35% reduction in the number of patients undergoing a complete geriatric assessment
- Combined with VES-13, the G8 can be reliably used to identify those patients who would benefit the most from a geriatric assessment and help in optimal resource utilization especially in busy Indian centers.

CGA - Geriatric domains assessed

- Functional status (FS)
- Fatigue
- Comorbidity
- Cognition
- Mental health
- Social support
- Nutrition
- Geriatric syndromes (dementia, delirium, falls, incontinence, osteoporosis or spontaneous fractures, neglect or abuse, failure to thrive, constipation, polypharmacy, pressure ulcers, and sarcopenia)

CGA

- Chemotherapy toxicity
- Calculate life expectancy –ePrognosis.com
- GA based interventions

CGA- how to assess

- Function
 - IADL (8)(0-5/8)/ADL (6)
 - Physical performance by TUG/gait speed/Short Physical Performance Battery
- Falls – h/o falls in 6 months
- Comorbidities – CIRS-G/Charlson comorbidity scale
- Cognition – Mini-Cog or BOMC
- Depression – GDS
- Nutritional
 - Weight loss/BMI<21

Table 1. Comparison of Katz ADLs and Lawton IADLs

Activities of Daily Living (ADLs)	Instrumental Activities of Daily Living (IADLs)
Feeding Continence Transferring Toileting Dressing Bathing	Using the telephone Shopping Preparing food Housekeeping Doing laundry Using transportation Handling medications Handling finances

Timed Up and Go

- >12 seconds

Purpose: To assess mobility

Equipment: A stopwatch

Directions: Patients wear their regular footwear and can use a walking aid, if needed. Begin by having the patient sit back in a standard arm chair and identify a line 3 meters, or 10 feet away, on the floor.

① Instruct the patient:

When I say “Go,” I want you to:

1. Stand up from the chair.
2. Walk to the line on the floor at your normal pace.
3. Turn.
4. Walk back to the chair at your normal pace.
5. Sit down again.

NOTE:

Always stay by the patient for safety.

② On the word “Go,” begin timing.

③ Stop timing after patient sits back down.

④ Record time.

Time in Seconds: _____

An older adult who takes ≥ 12 seconds to complete the TUG is at risk for falling.

OBSERVATIONS

Observe the patient’s postural stability, gait, stride length, and sway.

Check all that apply:

- Slow tentative pace
- Loss of balance
- Short strides
- Little or no arm swing
- Steadying self on walls
- Shuffling
- En bloc turning
- Not using assistive device properly

These changes may signify neurological problems that require further evaluation.

TUG and correlation

Higher TUG scores associated with

- Presence of comorbidities
- Impaired cognition
- Poor nutritional status
- Depression and anxiety
- Lower median OS of patients with TUG >12 s

Comorbidities

CCI

- Identify comorbidities
- Treat them
- Modify cancer therapy accordingly
- To estimate life expectancy

Score	Comorbid condition
1	Myocardial infarction (MI) Congestive heart failure (CHF) Cerebral vascular disease Peripheral vascular disease Dementia Chronic obstructive pulmonary disease (COPD) Connective tissue disease Peptic ulcer disease (PUD) Mild liver disease Age ^a
2	Diabetes Hemiplegia Moderate/severe renal disease Diabetes with end-organ damage Any solid tumor Leukemia Lymphoma
3	Moderate/severe liver disease
6	Metastatic solid tumor Acquired immunodeficiency syndrome (AIDS)

^a For each decade after 40 years, a point is added (1 point for age group 41–50, 2 points for age group 51–60, 3 points for 61–70, 4 points for 71 or older).

Comorbidities

- CIRS –G

CUMULATIVE ILLNESS RATING SCALE FOR GERIATRICS (CIRS-G)

Miller, Paradis, and Reynolds 1991

PATIENT _____ AGE _____

RATER _____ DATE _____

Instructions: Please refer to the CIRS-G Manual. Write brief descriptions of the medical problem(s) that justified the endorsed score on the line following each item. (Use the reverse side for more writing space).

RATING STRATEGY

0 - No Problem
 1 - Current mild problem or past significant problem
 2 - Moderate disability or morbidity/requires "first line" therapy
 3 - Severe/constant significant disability/"uncontrollable" chronic problems
 4 - Extremely Severe/immediate treatment required/end organ failure/severe impairment in function

	SCORE
<u>HEART</u>	_____
<u>VASCULAR</u>	_____
<u>HEMATOPOIETIC</u>	_____
<u>RESPIRATORY</u>	_____
<u>EYES, EARS, NOSE AND THROAT AND LARYNX</u>	_____
<u>UPPER GI</u>	_____
<u>LOWER GI</u>	_____
<u>LIVER</u>	_____
<u>RENAL</u>	_____
<u>GENITOURINARY</u>	_____
<u>MUSCULOSKELETAL/INTEGUMENT</u>	_____
<u>NEUROLOGICAL</u>	_____
<u>ENDOCRINE/METABOLIC AND BREAST</u>	_____
<u>PSYCHIATRIC ILLNESS</u>	_____
<hr/>	
TOTAL NUMBER CATEGORIES ENDORSED.....	_____
TOTAL SCORE.....	_____
Severity Index: (total score/total number of categories endorsed).....	_____
Number of categories at level 3 severity.....	_____
Number of categories at level 4 severity.....	_____

Cognition - Mini-Cog

Inside the circle, please draw the hours of a clock as they normally appear.
Place the hands of the clock to represent the time: "ten minutes after eleven o'clock."

The Mini-Cog Test

The test is administered as follows:

1. Instruct the patient to listen carefully and repeat the following:

APPLE WATCH PENNY (English)

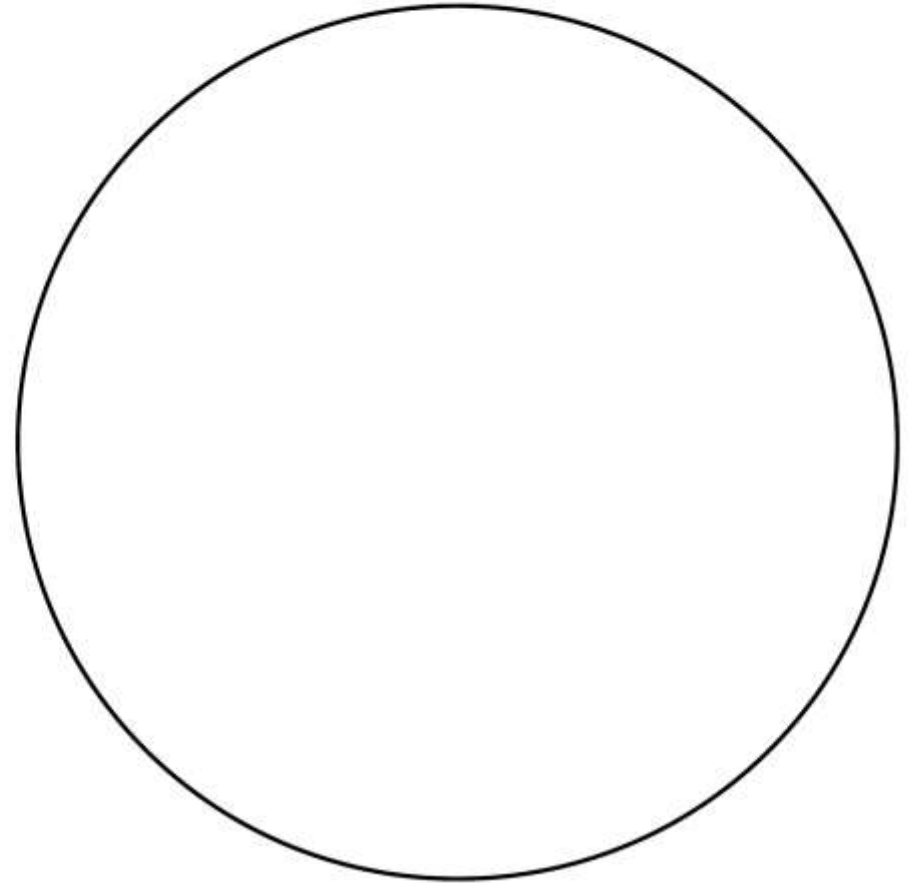
MANZANA RELOJ PESETA (Spanish)

2. Administer the Clock Drawing Test

3. Ask the patient to repeat the 3 previously stated words:

Scoring Process:

Number of correct items recalled _____ [if 3 then negative screen. STOP]



Blessed Orientation-Memory-Concentration score >10

Items	Maximum Error	Score	Weight
1. What year is it now?	1	x4=	
2. What month is it now? Memory phrase (repeat after me): "John Brown, 42 Market Street, Chicago"	1	x3=	
3. About what time is it (within 1 hour)?	1	x4=	
4. Count backwards 20 to 1.	2	x2=	
5. Say the months in reverse order (start with December).	2	x2=	
6. Repeat the memory phrase: (1) John (1) Brown (1) 42 (1) Market (1) Chicago	5	x2=	
		TOTAL	

The scores from each of the six items are multiplied to yield a weighted score.

- Score "1" for each incorrect response.

- *Scoring items 4. and 5.:* For uncorrected errors, score "2"; for self-corrected errors, score "1". For no errors, score "0".

- *Scoring the memory phrase:*

If no cue is necessary and the patient recalls both name and address, score "0".

If the patient cannot spontaneously recall the name and address, cue with "John Brown" one time.


If this cue is necessary, the patient automatically has 2 errors.

- Score 1 point for each subsequent "unit" the patient cannot recall.

Mini-Mental State Examination (MMSE)

Patient's Name: _____ Date: _____

Instructions: Ask the questions in the order listed. Score one point for each correct response within each question or activity.

Maximum Score	Patient's Score	Questions
5		"What is the year? Season? Date? Day of the week? Month?"
5		"Where are we now: State? County? Town/city? Hospital? Floor?"
3		The examiner names three unrelated objects clearly and slowly, then asks the patient to name all three of them. The patient's response is used for scoring. The examiner repeats them until patient learns all of them, if possible. Number of trials: _____
5		"I would like you to count backward from 100 by sevens." (93, 86, 79, 72, 65, ...) Stop after five answers. Alternative: "Spell WORLD backwards." (D-L-R-O-W)
3		"Earlier I told you the names of three things. Can you tell me what those were?"
2		Show the patient two simple objects, such as a wristwatch and a pencil, and ask the patient to name them.
1		"Repeat the phrase: 'No ifs, ands, or buts.'"
3		"Take the paper in your right hand, fold it in half, and put it on the floor." (The examiner gives the patient a piece of blank paper.)
1		"Please read this and do what it says." (Written instruction is "Close your eyes.")
1		"Make up and write a sentence about anything." (This sentence must contain a noun and a verb.)
1		"Please copy this picture." (The examiner gives the patient a blank piece of paper and asks him/her to draw the symbol below. All 10 angles must be present and two must intersect.) 
30		TOTAL

(Adapted from Rovner & Folstein, 1987)

GDS

- Score >5
- 5-10 minutes
- Self administered

Geriatric Depression Scale (short form)

Instructions: Circle the answer that best describes how you felt over the past week.

- | | | |
|---|-----|----|
| 1. Are you basically satisfied with your life? | yes | no |
| 2. Have you dropped many of your activities and interests? | yes | no |
| 3. Do you feel that your life is empty? | yes | no |
| 4. Do you often get bored? | yes | no |
| 5. Are you in good spirits most of the time? | yes | no |
| 6. Are you afraid that something bad is going to happen to you? | yes | no |
| 7. Do you feel happy most of the time? | yes | no |
| 8. Do you often feel helpless? | yes | no |
| 9. Do you prefer to stay at home, rather than going out and doing things? | yes | no |
| 10. Do you feel that you have more problems with memory than most? | yes | no |
| 11. Do you think it is wonderful to be alive now? | yes | no |
| 12. Do you feel worthless the way you are now? | yes | no |
| 13. Do you feel full of energy? | yes | no |
| 14. Do you feel that your situation is hopeless? | yes | no |
| 15. Do you think that most people are better off than you are? | yes | no |

Total Score _____

Mini Nutritional Assessment

Complete the screen by filling in the boxes with the appropriate numbers. Add the numbers for the screen. If score is 11 or less, continue with the assessment to gain a Malnutrition Indicator Score.

Screening

A Has food intake declined over the past 3 months due to loss of appetite, digestive problems, chewing or swallowing difficulties?

- 0 = severe decrease in food intake
1 = moderate decrease in food intake
2 = no decrease in food intake

B Weight loss during the last 3 months

- 0 = weight loss greater than 3kg (8.6lbs)
1 = does not know
2 = weight loss between 1 and 3kg (2.2 and 6.6 lbs)
3 = no weight loss

C Mobility

- 0 = bed or chair bound
1 = able to get out of bed / chair but does not go out
2 = goes out

D Has suffered psychological stress or acute disease in the past 3 months?

- 0 = yes 2 = no

E Neuropsychological problems

- 0 = severe dementia or depression
1 = mild dementia
2 = no psychological problems

F Body Mass Index (BMI) = weight in kg / (height in m)²

- 0 = BMI less than 19
1 = BMI 19 to less than 21
2 = BMI 21 to less than 23
3 = BMI 23 or greater

Screening score (subtotal max. 14 points)

12-14 points: Normal nutritional status

8-11 points: At risk of malnutrition

0-7 points: Malnourished

For a more in-depth assessment, continue with questions G-R

Assessment

G Lives independently (not in nursing home or hospital)

- 1 = yes 0 = no

H Takes more than 3 prescription drugs per day

- 0 = yes 1 = no

I Pressure sores or skin ulcers

- 0 = yes 1 = no

References

1. Velaz B, Villars H, Abellan G, et al. Overview of the MNA® - its History and Challenges. *J Nutr Health Aging*. 2005; **10**:456-465.
2. Rubenstein LZ, Harker JD, Sahra A, Guigoz Y, Velaz B. Screening for Undernutrition in Geriatric Practice: Developing the Short-Form Mini Nutritional Assessment (MNA-SF). *J Geront*. 2001; **56A**: M366-377
3. Guigoz Y. The Mini-Nutritional Assessment (MNA®) Review of the Literature - What does it tell us? *J Nutr Health Aging*. 2006; **10**:466-487.

J How many full meals does the patient eat daily?

- 0 = 1 meal
1 = 2 meals
2 = 3 meals

K Selected consumption markers for protein intake

- At least one serving of dairy products (milk, cheese, yoghurt) per day yes no
 - Two or more servings of legumes or eggs per week yes no
 - Meat, fish or poultry every day yes no
- 0.0 = if 0 or 1 yes
0.5 = if 2 yes
1.0 = if 3 yes

L Consumes two or more servings of fruit or vegetables per day?

- 0 = no 1 = yes

M How much fluid (water, juice, coffee, tea, milk...) is consumed per day?

- 0.0 = less than 3 cups
0.5 = 3 to 5 cups
1.0 = more than 5 cups

N Mode of feeding

- 0 = unable to eat without assistance
1 = self-fed with some difficulty
2 = self-fed without any problem

O Self view of nutritional status

- 0 = views self as being malnourished
1 = is uncertain of nutritional state
2 = views self as having no nutritional problem

P In comparison with other people of the same age, how does the patient consider his / her health status?

- 0.0 = not as good
0.5 = does not know
1.0 = as good
2.0 = better

Q Mid-arm circumference (MAC) in cm

- 0.0 = MAC less than 21
0.5 = MAC 21 to 22
1.0 = MAC greater than 22

R Calf circumference (CC) in cm

- 0 = CC less than 31
1 = CC 31 or greater

Assessment (max. 16 points)

Screening score

Total Assessment (max. 30 points)

Malnutrition Indicator Score

24 to 30 points

17 to 23.5 points

Less than 17 points

Normal nutritional status

At risk of malnutrition

Malnourished

Chemotherapy toxicity

- CARG Cancer and Aging Research Group
 - Risk of grade 3-5 toxicity
- Chemotherapy Risk Assessment Scale for High Age patients CRASH
 - gr 3 hematological and gr 3-4 non hematological toxicity

Chemo-Toxicity Calculator

Select the language

English

Sex

Select

Patient's Age

Patient's Height

Select



Select

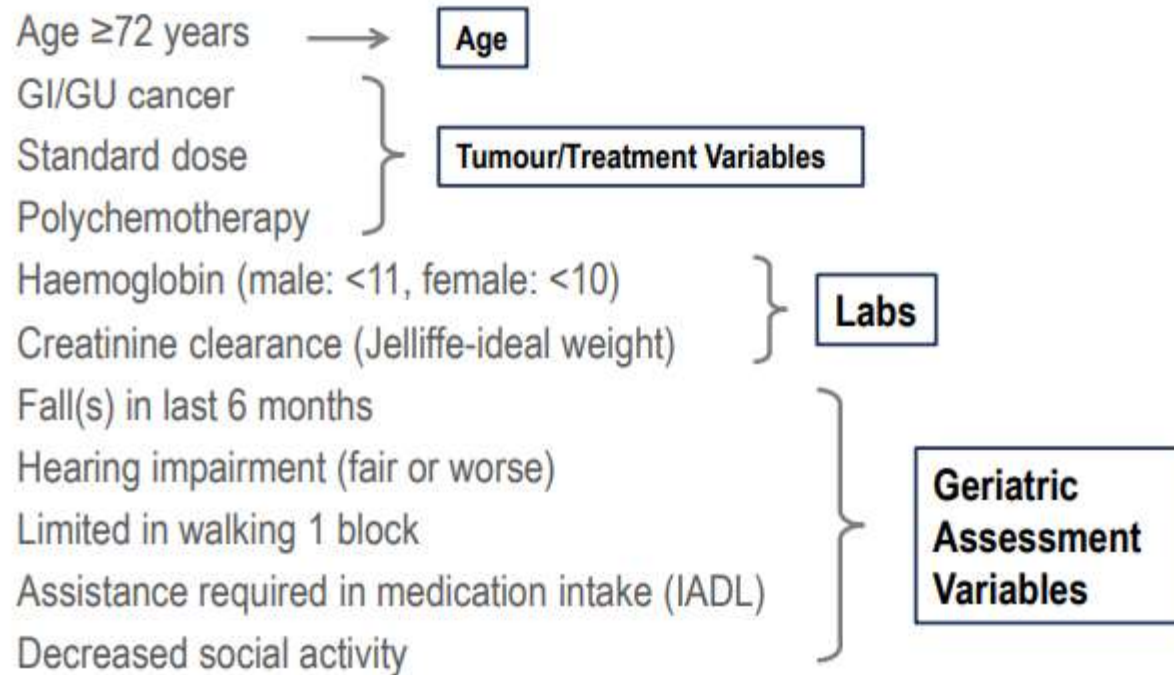
Patient's Weight

Select



Select

CARG score



CARG score in Indian patients

- N= 270
- Mean age of 69 (65–83) yrs
- 52% of patients atleast one grade 3–5 toxicity
- The risk of toxicity was increased with an increasing risk score
 - 42% for low risk, 51% for medium risk and 79% for high risk

CRASH score

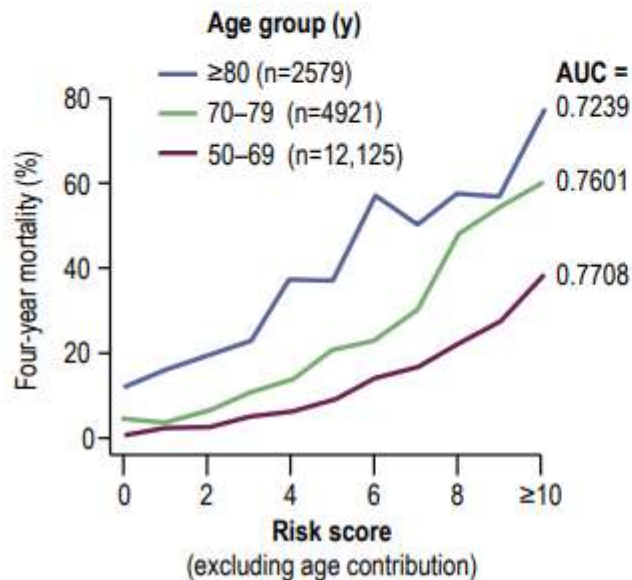
Predictors	Points		
	0	1	2
Haematologic score			
Diastolic BP	≤72	>72	
IADL	26–29	10–25	
LDH (if ULN 618 U/L; otherwise, 0.74/L*ULN)	0–459		>459
Chemotox	0–0.44	0.45–0.57	>0.57
Nonhaematologic score			
ECOG PS	0	1–2	3–4
MMS	30		<30
MNA	28–30		<28
Chemotox	0–0.44	0.45–0.57	>0.57

GERIATRIC ONCOLOGY

Comprehensive Geriatric Assessment – Estimating life expectancy

Lee index predicts mortality in 4 and 10 years

It integrates age, comorbidity and cognition and functionality



Four-Year Mortality Index for Older Adults		
Parameter	Result	Points
1. Age (years)	60–64	1
	65–69	2
	70–74	3
	75–79	4
	80–84	5
	≥ 85	7
2. Sex (Male/Female)	Male	2
3. BMI [$703 \times (\text{weight in pounds}/\text{height in inches}^2)$]	BMI <25	1
4. Has a doctor ever told you that you have diabetes or high blood sugar? (Y/N)	Diabetes	1
5. Has a doctor told you that you have cancer or a malignant tumour, excluding minor skin cancers? (Y/N)	Cancer	2
6. Do you have a chronic lung disease that limits your usual activities or makes you need oxygen at home? (Y/N)	Lung disease	2
7. Has a doctor told you that you have congestive heart failure? (Y/N)	Heart failure	2
8. Have you smoked cigarettes in the past week? (Y/N)	Smoke	2
9. Because of a health or memory problem do you have any difficulty with bathing or showering? (Y/N)	Bathing	2
10. Because of a health or memory problem, do you have any difficulty with managing your money—such as paying your bills and keeping track of expenses? (Y/N)	Finances	2
11. Because of a health problem do you have any difficulty with walking several blocks? (Y/N)	Walking	2
12. Because of a health problem do you have any difficulty with pulling or pushing large objects like a living room chair? (Y/N)	Push or pull	1

Polypharmacy

- Five or more medications
- Excessive polypharmacy ten or more medications
- PIMs preferably avoided in older persons or substituted by safer alternatives
- Beers criteria
- STOPP Screening Tool of Older Persons' Prescriptions
- START -Screening Tool to Alert to Right Treatment

Polypharmacy issues

- Adverse drug reactions
- Duplication of therapy
- Adverse drug-drug interactions
- Traditional medications may add toxicity – jaundice
- Adverse drug-disease interactions
- Adherence to treatment
- Cost

Polypharmacy

- Polypharmacy was present in 55% and excessive polypharmacy in 13%
- Higher in patients with lung cancer
- Vitamins and calcium - 20%
- Ayurvedic/homeopathic - 23%
- At least one PIM in 80%
- 53% PIM among perichemotherapy medications commonly intravenous antihistamines, histamine H2 blockers, and steroids

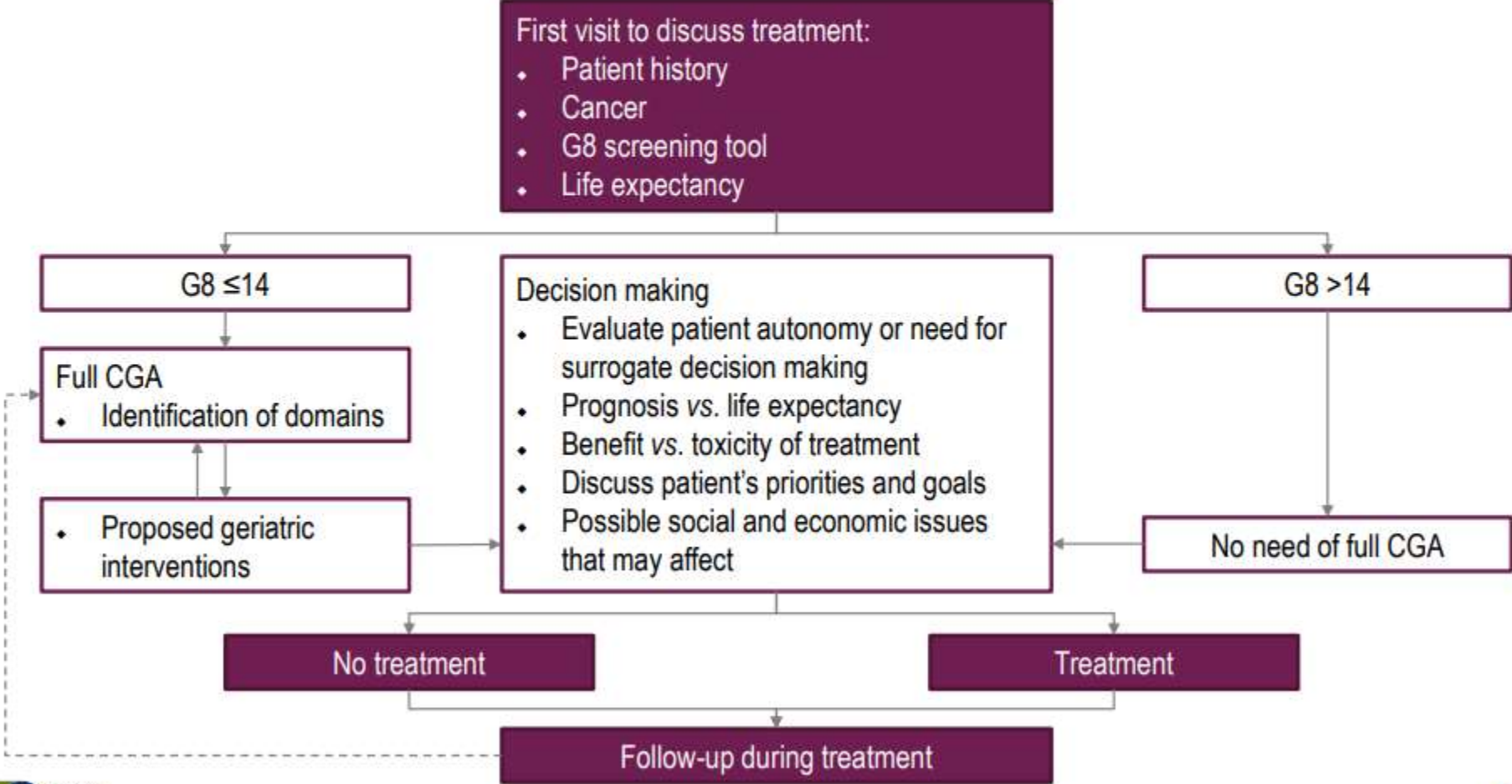
GA based interventions

Domain	Intervention
Function and falls -	
IADL	Physical/occupational therapy
Falls	Fall prevention discussion/educate caregivers
Comorbidity	Understand chemotherapy risk Involve primary care physician for polypharmacy
Cognition	Decision making capacity Delirium risk Medication review
Depression	Psychotherapy/psychiatry review
Nutrition	Dietician review Caregiver education
Vision or hearing abnormalities	Address the abnormalities

What is the minimum?

- Predict chemotherapy toxicity: CARG/CRASH
- Estimate non-cancer life expectancy: ePrognosis
- Functional assessment IADL
- Comorbidity assessment
- Screening for falls
- Screening for depression –geriatric depression scale
- Screening for cognitive impairment –Mini-Cog/BOMC
- Malnutrition screening – weight loss/BMI

GERIATRIC ONCOLOGY IN PRACTICE



How long does a GA take?

- 22 to 27 minutes
 - 15 to 23 minutes being completed by the patient and caregiver
 - 5 to 6 minutes by the health care provider
- No differences between assessments performed by a geriatrician or a trained health care worker in the proportion of patients for whom oncologic treatment decisions are altered
- Only screening for many conditions – not a detailed assessment

Geriatric assessment in India

- 100 oncologists surveyed
- 87% oncologists cared for ≥ 10 older patients/week
- 99% provided care to geriatric patients
- 44% were not aware of any formal guidelines for doing a GA in a patient with cancer
- 70% reported assessing older patients using intuition/informally
- Only 9% reported that they always performed a GA

Indian perspective

- Only 2% of the patients evaluated in TMH geriatric oncology clinic had a normal CGA
- The commonly deranged CGA domains
 - comorbidities (79%)
 - fatigue (77%)
 - nutrition (65%)
 - function and falls (52%)
 - psychological status (32%)
 - cognition (18%)
 - Polypharmacy >50%

Noronha V, et al. Initial experience of a geriatric oncology clinic in a tertiary cancer center. in India. Cancer Res Stat Treat 2020;3:208-17

Indian experience

- In 70% of the patients, there was an estimated risk of at least 51% for developing Grade 3 or higher toxicity from full-dose combination chemotherapy
- Before GA, vulnerabilities not addressed except for nutrition
- Only 20% of the patients who had a deficit in function and falls had been recommended the use of a walking assist device
- Most unvaccinated

Time taken

- Median of 50 min to complete the physician-administered portion of the geriatric evaluation, chemotherapy risk assessment, and evaluation of life expectancy
- Excluding the time required for completion of the self-administered questionnaires and the Mini Nutritional Assessment (MNA) (trained volunteer)

• TIME!!!!!!



Time is money!

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

Diagnostic Instrument	Cost (\$)
Nurse's salary for 1 hour*	28
Complete blood count	17
Carcinoembryonic antigen	50
Chest x-ray	67
Bilateral screening mammography	321
Abdominal or chest CT scan	640
MRI pelvis	739
Liver biopsy	879
Whole-body PET-CT	1,788
Colonoscopy with biopsy	2,187
Breast cancer genomic testing (Oncotype)†	3,416
Liquid biopsy (Guardant360)‡	5,800

NOTE. Data adapted from Healthcare Bluebook,⁴⁶ which uses a nationwide database of medical payment data to create transparency in pricing for medical procedures. Within the range of pricings, Healthcare Bluebook "reasonable amount" data are presented.

Abbreviations: CT, computer tomography; MRI, magnetic resonance imaging; PET, positron emission tomography.

*Mean salary for a registered nurse in the United States according to PayScale.⁴⁷

†Genomic Health (Redwood City, CA).

‡Reported Medicare reimbursement rate in 2016.⁴⁸

§Guardant Health (Redwood City, CA).

||On the basis of article by Mukherjee.⁴⁹

Barriers in India

- Time restraints
- Lack of clinical staff
- Lack of awareness
- Polypharmacy
- Poor functional status

Are all these tools appropriate in India?

- Older adult definition – immigrants/age adjustment for tools
- Saas bahu for IADL
- Telephone use
- Relocation for treatment
- Illiteracy
- Body habitus
 - thin, low BMI
 - Weight loss quantification difficult
 - Vegetarianism

Are the tools appropriate in India?

- Mental health issues – psychiatric taboos
- Social issues and joint families
- Functional mobility
- Life expectancy -

Are all the tools appropriate in India?

- Changing family patterns of joint vs nuclear family
- Maids/nursing aides for care of older adults
- Smart phone use in older adults
- Language diversity in India
- Seasons – appropriateness of ‘weather’ related questions

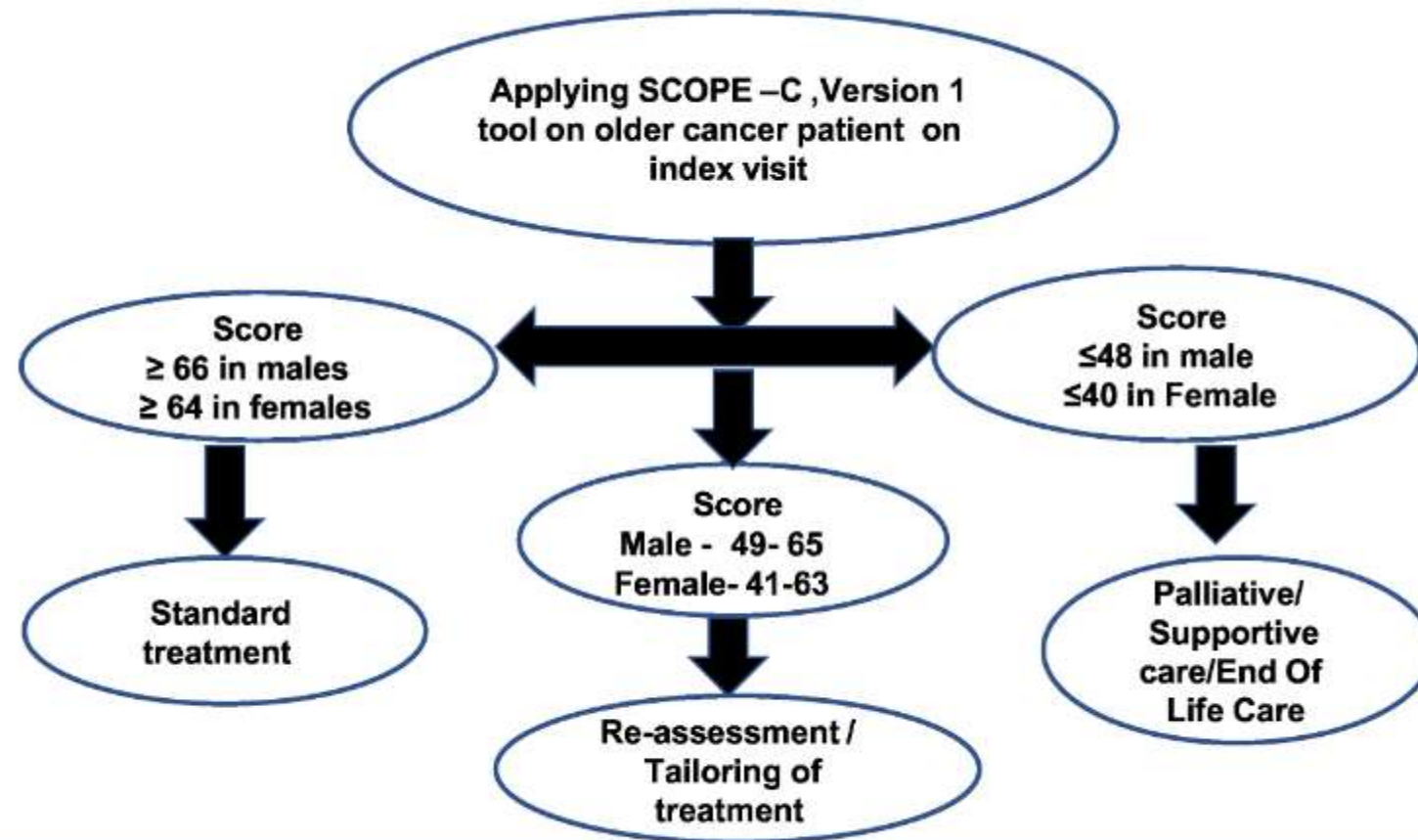
Other Indian studies

- Study from AIIMS
- Older adult patients with cancer
- 75% had functional impairment
- 35% had malnutrition
- 64% had more than one co-morbidity

Screening of the Older Person with Cancer", Version 1 (SCOPE-C)

- 13 questions with sub-parts containing 35 items and spanning over eight domains
- Response range of 0–4 ratings
- Time for completion of this tool by the physician/clinician was reduced to average 25 min
- Individual Scores - correlated with survival status at 24 weeks
- Cutoff score of 64 had a 72.2% sensitivity and 77.3% specificity for better prognosis

Proposed care protocol



Palliative care will commence with the diagnosis of malignancy together with definitive/modified treatment.

Domains assessed

- Functionality
- Self-care
- Depression
- Cognition
- Nutrition
- Comorbidity
- Geriatric syndrome
- Polypharmacy
- QOL, social support

Domains and items	
1.Functionality	ii. Do you have any trouble doing the following
i. Do you have difficulty in carrying out your day to day activities as stated below?	<ul style="list-style-type: none">• Taking a long walk(1 km)
<ul style="list-style-type: none">• Taking food	<ul style="list-style-type: none">• Taking a short walk(500 m)
<ul style="list-style-type: none">• Dressing	<ul style="list-style-type: none">• Climbing stairs
<ul style="list-style-type: none">• Toileting/Bathing	<ul style="list-style-type: none">• Bending/kneeling /stooping
<ul style="list-style-type: none">• Cooking/normal housework	iii. Which of the following best describes your present functional status?
<ul style="list-style-type: none">• Shopping for day to day needs	<ul style="list-style-type: none">• Able to manage day to day activities,
<ul style="list-style-type: none">• Using telephone	<ul style="list-style-type: none">• Able to manage day to day activities with help
<ul style="list-style-type: none">• Managing Finances	<ul style="list-style-type: none">• Totally dependent and bed bound.
<ul style="list-style-type: none">• Travelling	2.Depression
<ul style="list-style-type: none">• Taking your medicines	<ul style="list-style-type: none">• Have you been feeling depressed /low most of the time?
	<ul style="list-style-type: none">• Having little interest in doing things that you used to enjoy before?
	<ul style="list-style-type: none">• Have negative feelings most of the time?
	<ul style="list-style-type: none">• Do you feel fatigued in your day to day activities?
	<ul style="list-style-type: none">• Do you feel helpless?
	<ul style="list-style-type: none">• How much effect does sleep irregularities have on your day to day life?

3.Cognition

- Is the patient oriented to time and place?

- Three object recall

- Drawing geometric shapes

- Three object recall

- Simple calculation question

4.Nutrition

- How do you rate your appetite?

- Have you lost or gained weight in the last three months?

- Anthropometry-BMI

5.Co-morbidity

- Do you suffer from any disease other than your present ailment? If yes, how much does it interfere with your day to day activities?

6.Geriatric syndrome

- Do you suffer from any geriatric syndrome? If yes, how much does it interfere with your day to day activities?

7.Poly-pharmacy

- On an average how many medicines do you take?

8.Social support/QOL

- In general, how would you rate your health?
- Does your present health condition put some strain on your financial status?
- Does your health condition permit you to relax and follow some activity you like?
- Can you depend on your family/friends/relatives for help and support at times of crisis?

Barriers to GA

Barrier	Potential Solutions
Lack of access to geriatrician	Educate other available providers (oncologists, oncology physician assistants, oncology nurse practitioners, primary care physicians) Telemedicine appointments
Service saturation	Promote the use of screening tools
Time	Use electronic GAs Use EHR-embedded GAs
Interest	Pursue education focused on GA benefits and interpretation of GA information Take online courses
Use of technology by older adults	Promote use of mobile phone–based technology Promote use through caregivers

Abbreviations: GA, geriatric assessment; EHR, electronic health record.

Webb T, et al. Addressing the Needs of Older Adults With Cancer in Low- and Middle-Income Settings. Am Soc Clin Oncol Educ Book. 2022 Apr;42:1-10.

Future perspectives

- Inclusion in DM medical oncology curriculum
 - Geriatric oncology 'long case'
- Development of more clinics for older adults with cancer
- More Indian trials –multicenter
- Increase awareness among practicing oncologists
- Policy changes and institutional support for research
- Development of an Indian Short Elderly Oncological Assessment Tool
- Support groups formation
- Biomarker/basic translational research on geriatric patients
- Inclusion of geriatric patients in specific clinical trials

Future perspectives

- Online educational opportunities in geriatric oncology
- Development and implementation of geriatric oncology hubs to “train-the-trainer” models
- Increase technology assisted GA

Solutions – Time barrier

- Protocolised organizational structure – delegate to non-oncologists
- Geriatrician
- Patient self-report
- Workforce of trained social workers/Physician assistants/nurses/allied practitioners
- GA guided interventions by referring to allied health specialties

Establishing GA as a part of cancer care

- Integrate with tumor board processes
- Champions
- Clinical staff education
- Patient education

disciplinary team, IT = information technology.

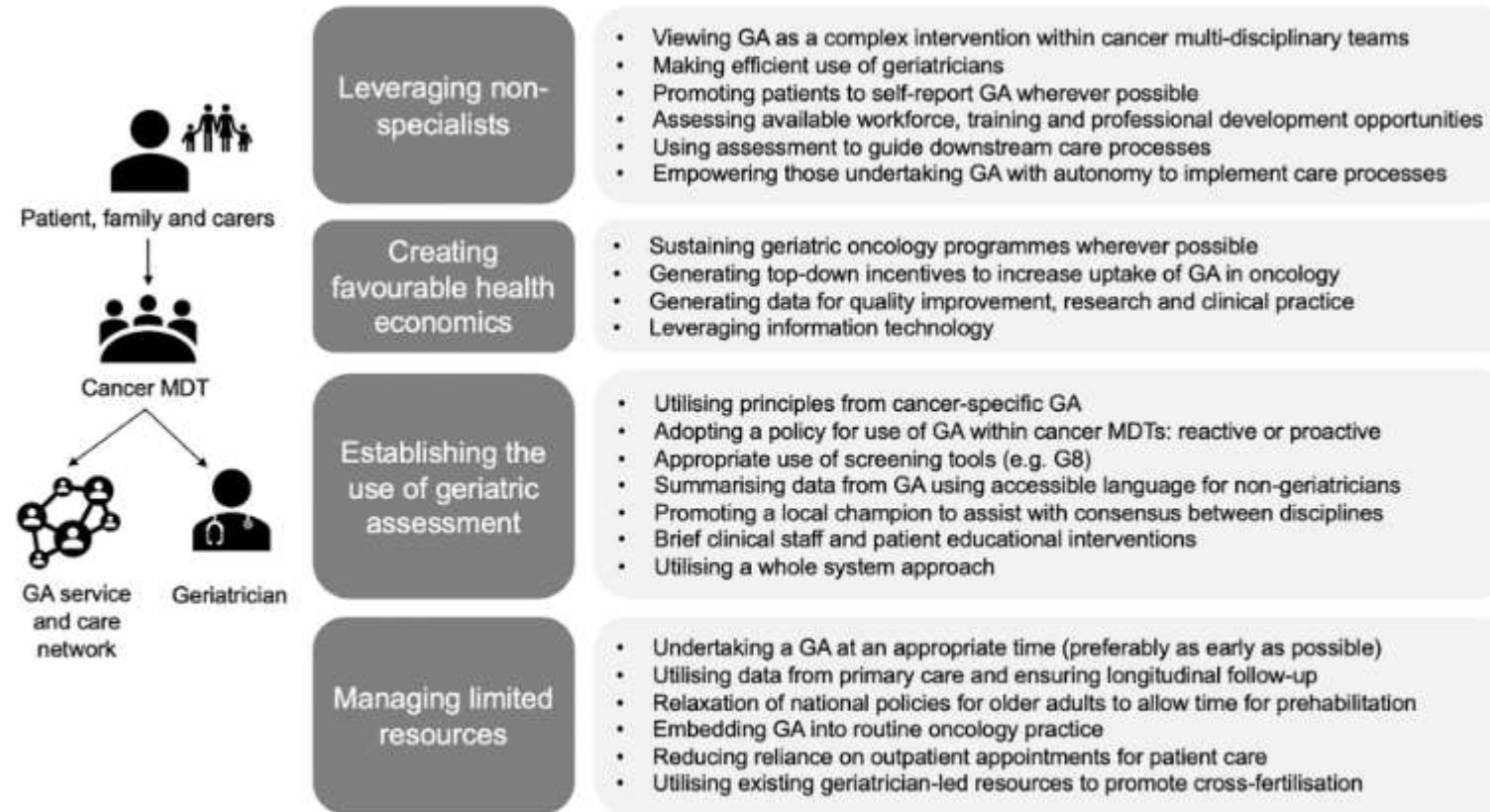


Fig. 4

Conceptual framework for implementing geriatric assessment in oncology practice.

Summary of the key concepts for implementation of geriatric assessment in oncology practice. Abbreviations:

Conclusions

- GA is feasible in Indian settings
- Tools to be adapted
- Choose the tool well

Selected Online Geriatric Oncology Resources

International Society of Geriatric Oncology (SIOG)

<http://www.siog.org/content/comprehensive-geriatric-assessment-cga-older-patient-cancer>

- Screening Tools (Geriatric 8, Triage Risk Screening Tool, Vulnerable Elderly Survey-13)
- Geriatric Assessment Tools

American Society of Clinical Oncology (ASCO) Geriatric Oncology Website

<http://www.asco.org/practice-guidelines/cancer-care-initiatives/geriatric-oncology>

- Geriatric Oncology Educational Resources
- Geriatric Oncology Updates

The Hartford Institute for Geriatric Nursing, ConsultGeri

<https://consultgeri.org/tools/try-this-series>

- Geriatric Assessment Tools
- Online Training Resources and Webinars

Cancer and Aging Research Group (CARG) Tools

<http://www.mycarg.org/tools>

- CARG Chemotherapy Toxicity Calculator
- Online Geriatric Assessment Tool (in English, Spanish and Mandarin)

Moffitt Cancer Center Senior Adult Oncology Program (SAOP) Tools

<https://moffitt.org/for-healthcare-providers/clinical-programs-and-services/senior-adult-oncology-program/senior-adult-oncology-program-tools/>

- Chemotherapy Risk Assessment Scale for High-Age Patients (CRASH) Calculator
- Cumulative Illness Rating Scale-Geriatric Calculator
- SAOP2 Screening Questionnaire

Loh KP, et al. What Every Oncologist Should Know About Geriatric Assessment for Older Patients With Cancer: Young International Society of Geriatric Oncology Position Paper. J Oncol Pract. 2018;14(2):85-94.

Thank you all for patient
listening!

Table 3. Proposed Approaches for the Implementation of Geriatric Assessment and/or Geriatric Screening Tools in a Routine Oncology Setting

Proposed Approach

Geriatric assessment in all patients age 70 years and older are considered for any cancer treatment and younger patients with age-related health concerns in high-resource settings

Self-administered portion*

Functional evaluation—for example, ADL and IADL

Depression—for example, GDS-5

Medications are generally evaluated at clinic visits; for older individuals, greater emphasis is needed to minimize potential drug–drug interactions and deprescribe unnecessary medications

Comorbidity is often assessed at clinic visits, but oncologists may consider using a validated comorbidity index to quantify comorbidity

Nutritional evaluation—for example, weight loss and MNA

Social support; living situation and need for additional home support for older individuals—a social worker or other allied health care professional will often inquire about these circumstances

Health care professional portion†

Cognitive screening—for example, Mini-Cog or MMSE

Physical performance—for example, TUG

Chemotherapy toxicity risk calculation—for example, CARG or CRASH toxicity scores

Geriatric screening tool (one of the following) if at risk, followed by geriatric assessment described above—this may spare the efforts of full geriatric assessment in 20%-40% of patients

Geriatric 8

Vulnerable Elders Survey-13

Triage Risk Screening Tool

Groningen Frailty Index

Senior Adult Oncology Program 2

Abbreviated Geriatric Assessment

Fried frailty criteria

Low-resource setting or if time is limited (one or more of the following):

One of the geriatric screening tools described above and chemotherapy toxicity risk calculation—for example, CARG or CRASH toxicity scores

Referral to geriatrician if screened positive for impairment on geriatric screening tools

If a geriatrician is not available, consider other tests on the basis of clinical impression and health areas at risk—for example, as indicated by screening tool; may consider ADL, IADL, and Mini-Cog in addition to the geriatric screening tool

Abbreviations: ADL, activity of daily living; CARG, Cancer and Aging Research Group; CRASH, Chemotherapy Risk Assessment Scale for High-Age Patients; GDS-5, Geriatric Depression Scale-5; IADL, instrumental activity of daily living; MMSE, Mini-Mental State Examination; MNA, Mini-Nutritional Assessment; TUG, Timed Get Up and Go.

Wildiers H, Heeren P, Puts M, Topinkova E, Janssen-Heijnen ML, Extermann M, Falandry C, Artz A, Brain E, Colloca G, Flamaing J, Karnakis T, Kenis C, Audisio RA, Mohile S, Repetto L, Van Leeuwen B, Milisen K, Hurria A. International Society of Geriatric Oncology consensus on geriatric assessment in older patients with cancer. *J Clin Oncol*. 2014 Aug 20;32(24):2595-603.