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## **Conflict Disclosure Information:**

**Presenter: Erin Lee**

**Title of Presentation: Evaluation of Three Geriatric  
Screening Tools in an Oncological Setting**

**I have no financial or personal relationships to disclose**

# Geriatric Screening Tools in an Oncological Setting

Including G8, ePrognosis, and CRASH

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# Geriatric Assessment (GA)

## Description

- Process that determines medical, psychological, and functional capabilities of elders

## Applications

- Good predictor of overall survival
- Predict harms and benefits of oncological intervention to help make decisions

## Limitations

- Time consuming
- Not required for every patient

# Comprehensive Geriatric Assessment (CGA)

- **Social data:** age, sex, living situation, marital status, educational level
- **Functional status**
  - Katz's activities of daily living (ADL)
  - Lawton's instrumental activities of daily living (IADL)
- **Fall history** during previous 12 months
- Self-perceived fatigue, cognitive status, mood, nutritional status, and comorbidity
- **Classic oncologic parameters**
  - Eastern Cooperative Oncology Group performance status
  - Tumor characteristics
  - Treatment Details

# Screening Tools

- Screening tools help to avoid the efforts of using GA on fit older patients who do not need extensive GA
- Tools can help physicians with the decision-making process when considering cancer screening or cancer treatment
- G8, ePrognosis, and CRASH

**G8**



**CRASH**

**H**

# G8 Screening Tool

## Description

- **8-item index** that adds up to a total score from 0 (poor) to 17 (good)
- **Score of  $\leq 14$**  indicating a geriatric risk profile

## Study

- Kenis et al., 2013
- 811 patients from Belgium
- $\geq 70$  year olds with a malignant tumor
- CGA and G8 tool were performed for each patient

## Method

- **Functional decline and overall survival (OS)** of patients was observed
- Results from **G8 were compared with results from CGA** (considered Gold-Standard) on how well it predicted the decline and OS

# Evaluation

- Compared with Gold standard (CGA)
  - **86.5% Sensitivity**
  - 59.3% Specificity
- Compared with Functional decline (ADL)
  - **84.2% Sensitivity**
  - 31.3% Specificity
- High inclusion rate therefore implementation is feasible
- “Geriatric risk profile” indicated by G8 shown to correlate strongly with OS and functional decline

# ePrognosis

## Description

- Website including over 10 indices that predict mortality risk
- **AND**
- Cancer screening app that weighs benefits and harms of screening (breast and colorectal)

## Using ePrognosis

- Both the indices and the app ask series of 10-15 questions regarding health status

## Results

- Website will give a mortality rate for given length of time (1 year, 5 year, etc.)
- App will give a suggestion on whether cancer screening is beneficial or not



# General Website

Are you a healthcare professional?

## Risk Calculator

1. How old is your patient?
2. What is the sex of your patient?  Female  Male
3. Does your patient need any assistance from another person in toileting?  Yes  No
4. Does your patient need partial or full assistance from another person in dressing?
5. Does your patient have a history of a malignant neoplasm?  Yes  No
6. Does your patient have congestive heart failure?  Yes  No
7. Does your patient have chronic obstructive pulmonary disease?  Yes  No
8. Does your patient now have renal insufficiency or failure?  Yes  No
- Total Points:** 4

## Results Based on Score:

Your total score is 5

### One And Three Year Mortality:

Points	Risk of ONE YEAR mortality	Risk of THREE YEAR mortality
0 - 3	7%	18%
4 - 5	11%	36%
>5	22%	55%

Now that you have seen this information, what is your best guess of one year mortality risk?

Did you find this information useful?

Did this information affect a clinical decision?

# Cancer App

Question 1-3

Age

50 - 59

60 - 64

65 - 69

70 - 74

75 - 79

80 - 84

85 +

Gender

Male

Female

Weight

\_lbs

Height

\_ft\_in

Imperial

Next

ePrognosis | Cancer Screening

Question 7

Has a doctor told you that you have congestive heart failure?

Yes

No

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Share Done

Harms Benefits

Testing for breast cancer is more likely to harm this person than to help them. Thus, screening would generally not be recommended.

Learn More

Responses

ePrognosis | Cancer Screening

# Evaluation

- Indexes are easy to use and required information can be obtained easily
- Limited to breast and colorectal cancer
- **Mortality risk** and/or **cancer screening suggestion** can be used to aid physicians in making treatment decisions
- Physicians must still use their own judgment in applying results

# Chemotherapy Risk Assessment Scale for High-Age Patients (CRASH)

## Description

- Instrument that provides risk score for hematologic and non-hematologic chemo toxicity
- Combines **average toxicity** of a chemo regimen and **individual patient variables**

## Method

- Patients aged  $\geq 70$  yrs in 7 Florida hospitals
- **Endpoint** was chosen to determine when toxicity had been reached
- 24 variables were observed in each of the patients

## Analysis

- Data from the variables was plotted against chemotherapy toxicity to see which ones correlated the strongest

# Results

- **Best performing model for H toxicity**
  - Diastolic blood pressure
  - LDH (lactate dehydrogenase)
  - IADL (instrumental activities of daily living)
  - Chemotox
- **Best performing model for NH toxicity**
  - Eastern Cooperative Oncology Group performance status (ECOG PS)
  - Mini-mental health status (MMS)
  - Mini-nutritional assessment (MNA)
  - Chemotox

### Non-Hematologic Risk Factors

ECOG PS	
0	0
1-2	1
3-4	2
MMS	
<30	2
30	0
MNA	
<28	2
Otherwise	0

Can be found at [www.moffit.org](http://www.moffit.org)

# Discussion

- CRASH score can divide patients into 4 risk categories (low, medium-low, medium-high, and high)
- CRASH score provides integrated risk score that was stable for 2 validations
- Similar to G8 tool

# Summary & Questions

## G8

- **8-item index** that identifies a geriatric risk profile
- Identifies patients who need more extensive GA
- Takes **~5-10 minutes**

## ePrognosis

- Website including over 10 indexes that predict mortality risk
- **AND**
- Cancer screening app that weighs benefits and harms of screening
- Less **~5 minutes**

## CRASH score

- Only tool that combines **average chemo toxicity** with **individual variables**
- Requires time-consuming laboratory tests, but outputs specific risk score
- **~10-20 minutes**



# Variables Tested

## Clinical Variables

- Age
- Sex
- BMI
- Diastolic blood pressure
- Comorbidity
- Polypharmacy

## Laboratory Variables

- WBC count
- Lymphocyte count
- Hemoglobin
- Aspartate aminotransferase
- Creatinine clearance

## Geriatric and Functional Assessment Variables

- ECOG performance status
- IADL (Instrumental Activities of daily living)
- MNA (Mini-Nutritional Assessment)
- MMS (Mini-mental status)
- GDS (Geriatric Depression Scale)

## Cancer-specific variables

- Disease Stage
- Bone Marrow Invasion
- Prior Chemotherapy
- Response

\*Tumor type not selected as a variable

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