Cancer Screening in the Older Patient

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Reasons to Discuss the Topic

- Cancer disproportionately affects the geriatric population
- 27.4% of cancer deaths occurs in individuals between the ages of 75 and 84
- Heterogeneity in health and functional status is more pronounced in this population
What is screening for?

- Detect occult malignancy or precancerous lesions that can be treated in a fashion that improves survival (and quality of life)
- Test needs to be very sensitive and specific
- Tailored for asymptomatic average risk individuals
Future life expectancy in quartiles

A
Life Expectancy for Women

B
Life Expectancy for Men

COLORECTAL CANCER
Background

- Third most common cancer in men and women in the US (4.5% of population)
- Second most common cause of cancer death
- Survival is associated with stage (best prognosis with early stage disease)
- Incidence of colon cancer increases with age
Three major screening modalities

- Fecal occult blood test (33-50% sensitivity)
- Sigmoidoscopy (50-75% sensitivity)
- Colonoscopy (60-85% sensitivity)

## USPTF Recommendation

<table>
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<th>Type of Cancer</th>
<th>Recommendations</th>
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| Colorectal    | • Screen for colorectal cancer using FOBT, sigmoidoscopy, or colonoscopy in adults beginning at age 50 y and continuing until age 75 y (grade A)  
• Recommend against routine screening for colorectal cancer in adults aged 76–85 y. There may be considerations that support colorectal cancer screening in individual patients (grade C)  
• Recommend against screening for colorectal cancer in adults more than the age of 85 y (grade D)  
• Evidence is insufficient to assess the benefits and harms of CT colonography and fecal DNA testing as screening modalities for colorectal cancer (I) |
Risks of screening

- Increased risk of complications with age
- 30% higher risk of perforation
- Increased risk of inadequate prep
- 3.5% of colonoscopies over age 80 and 2.6% over age 65 associated with perforation, bleeding, or cardiovascular/pulmonary events
Takeaway

- Between 50 and 75, recommend standard screening
- Consider screening above age 75 in high functional status individuals (with life expectancy of 5 or more years)
Background

- Second most common cancer in the US
- Most common cause of cancer death for men and women
- 3-4% of men above the age of 70 will develop lung cancer in the next decade
- Survival is better with early stage disease
Screening techniques not recommended

- Sputum cytology
- Chest radiograph

- Found earlier stage lung cancer, but did not improve survival
National Lung Screening Trial

- Randomized 53,454 individuals who ranged from 50-74yo who had at least 30 pack year history and still smoked or had quit within the last 15 years

- Two arms
  - Chest radiograph annually for three years
  - Low dose chest CT annually for three years
20% improvement in mortality
Limitations in applying study

- Study only included individuals up to age 74
- Patients with comorbidities were excluded
- Even benign lesions sometimes require invasive tests (1.2% underwent needle biopsy and 0.7% underwent surgical biopsy)
Lung

Recommend annual screening for lung cancer with low-dose LDCT in adults aged 55–80 y who have at least a 30-pack-year smoking history and currently smoke or have quit within the past 15 y. Screening should be discontinued once a person has not smoked for 15 y or develops a health problem that substantially limits life expectancy or willingness to have curative lung surgery (grade B)
Takeaway

- Good functional status individuals between 55-80 who meet criteria (30 pack year smokers who currently smoke or quite within 15 years), low dose CT scan
PROSTATE CANCER
Background

- Mean age of diagnosis is 66 years old
- 20% of cases occur after age 75
- Mortality of 21.4 per 100,000 men annually with incidence of 137.9 per 100,000 men
Screening strategies

- Prostate specific antigen
- Digital examination
- Ultrasonography
PLCO Screening Trial

- 76,685 men between 55-74 randomized to annual PSA screening for 6 years and DRE for 4 years or usual care (which include screening)
- 50% of men in usual care arm did have some form of screening during study time period
European Randomized Study of Screening for Prostate Cancer

- 182,160 men between 55 and 69 randomized to PSA screening on average annually for 4 years versus no screening
- Only 20% contamination into the control group
- Concern that men diagnosed in control arm were undertreated
1 death prevented 1000 screened
Concerns with PSA screening

- 12.9% false negative of test
  - Psychological stress
  - Harm from unnecessary biopsy

- Most men do not obtain survival benefit from early diagnosis
UPSTF Recommendation

Prostate: Recommend against PSA-based screening for prostate cancer (grade D)
Takeaway

- Discussion with geriatric patients on risk versus benefit of screening
- Annual PSA supported by American Urological Association and American Society of Clinical Oncology starting at age 50 or 55 as long as 10 to 15 years of expected life
BREAST CANCER
Background

- Most common malignancy in women
- Third most common cause of cancer death in women
- Median age of diagnosis is 61 and median age of death 68
- Clearly better prognosis with early stage diagnosis (durability of this difference in geriatric population)
Mammography

- Sensitivity of 75-90%
- Specificity of 83-98.5%
- Better sensitivity and specificity in geriatric population
Screening Geriatric Population

- Critical Swedish trials that support mammography fail to show benefit above 69 years of age
- Models suggest survival benefit from screening if life expectancy of at least 10 years
USPTF Recommendations

Breast

- Recommend biennial screening mammography for women 50–74 y (grade B)
- Decision to start regular biennial screening mammography before the age of 50 y should be an individual one and take patient context into account, including patient’s values regarding specific benefits and harms (grade C)
- Current evidence is insufficient to assess the benefits and harms of screening mammography in women aged 75 y and older (I)
- Recommend against teaching BSE (grade D)
- Current evidence is insufficient to assess the additional benefits and harms of CBE beyond screening mammography in women aged 40 y or older (I)
- Current evidence is insufficient to assess additional benefits and harms of either digital mammography or MRI instead of film mammography as screening modalities for breast cancer (I)
Takeaways

- At least biennial screening mammography from 50 years of age to 74
- Tailor further screening from 75 years of age based upon functional status and life expectancy
CERVICAL CANCER
Background

- More than 12,000 cases annually with more than 3,000 deaths
- Confusion on when to stop cervical cancer screening
- Older women more likely to die of cervical cancer than younger women (due to later stage diagnosis)
Papanicolaou Test

- 94.2% sensitivity and 57.7% specificity
USPTF Recommendation

Cervical

- Recommend screening for cervical cancer in women aged 21–65 y with cytology (Pap smear) every 3 y or, for women aged 30–65 y who want to lengthen the screening interval, screening with a combination of cytology and HPV testing every 5 y (grade A)
- Recommend against screening for cervical cancer with HPV testing, alone or in combination with cytology, in women younger than 30 y (grade D)
- Recommend against screening for cervical cancer in women less than 21 y old (grade D)
- Recommend against screening for cervical cancer in women more than 65 y old who have had adequate prior screening and are not otherwise at high risk for cervical cancer (grade D)
- Recommend against screening for cervical cancer in women who have had a hysterectomy with removal of the cervix and who do not have a history of a high-grade precancerous lesion (CIN grade 2 or 3) or cervical cancer (grade D)
Takeaways

- Can stop screening at age 65 if three negative consecutive Pap smears
- No screening if patient has had hysterectomy with removal of the cervix
- Pap smear regardless of age if never has had screening
Summary

- Evidence for screening in the geriatric population is not robust.
- In the absence of good data, recommend personalized approach to individuals based upon functional status and life expectancy.