Prostate cancer: Update on screening and management

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10/13/16
In 2012, the U.S. Preventive Services Task Force recommended against prostate-specific antigen-based screening for prostate cancer. This recommendation applied to men in the general U.S. population, regardless of age. Grade D recommendation.
Mortality Results from a Randomized Prostate-Cancer Screening Trial

The Prostate, Lung, Colorectal, and Ovarian (PLCO) Cancer Screening Trial on prostate-cancer mortality

From 1993-2001, randomly assigned 76,693 men to receive annual screening or usual care (control group)

10 U.S. Centers

Andriole GL et al. NEJM 2009; 360
Number of prostate-cancer deaths

Andriole GL et al. NEJM 2009; 360
Screening and Prostate-Cancer Mortality in a Randomized European Study

Randomized 182,000 men between 50-74 to PSA screening at an average of once every 4 years or to a control group that did not receive such screening

7 European countries

Schroder FH et al. NEJM 2009; 360
Screening reduced the rate of death from prostate cancer by 20% but was associated with a high risk of overdiagnosis

Schroder FH et al. NEJM 2009; 360
Missing the Mark on Prostate-Specific Antigen Screening

The Opinion Pages | Editorial

To Screen or Not?

May 29, 2012
~40% decrease in prostate-cancer mortality

Siegel RL et al. Ca Cancer J Clin 2016; 66
In the PLCO trial, ~50% of the control group received PSA testing.

None of the Task Force members were urologists, medical oncologists, or radiation oncologists.
Early Detection of Prostate Cancer: AUA Guideline

H. Ballentine Carter, Peter C. Albertsen, Michael J. Barry, Ruth Etzioni, Stephen J. Freedland, Kirsten Lynn Greene, Lars Holmberg, Philip Kantoff, Badrinath R. Konety, Mohammad Hassan Murad, David F. Penson and Anthony L. Zietman

Men aged 55-69 should be offered biennial screening in the setting of shared decision-making

Men under 40 or over 69 years of age should not be routinely screened

Evidence was insufficient to recommend screening for men aged 40-54 years

Carter HB et al. J Urol 2013; 190
10-Year Outcomes after Monitoring, Surgery, or Radiotherapy for Localized Prostate Cancer

(Prostate Testing for Cancer and Treatment): ProtecT Trial

Between 1999-2009, randomized 1643 men with localized prostate cancer to active surveillance (545), surgery (553), or radiotherapy (545)

U.K. study
Prostate-cancer specific mortality was low for all treatments

No significant difference among treatments (median follow up 10 years)

Hamdy FC et al. NEJM Sept 24, 2016
Surgery and radiation were associated with lower rates of disease progression and metastases than was active monitoring.

Hamdy FC et al. NEJM Sept 24, 2016
65yo
PSA 6.5
HGPIN in 3/12 cores and small atypical glands in 2/12 cores
Otherwise healthy

Repeat biopsy or prostate MRI
65yo
PSA 6.5
Gleason 3+3=6 prostate cancer 2/12 cores
(maximum involvement 30%)
Otherwise healthy

Active surveillance

Surgery

Radiation
Case 3

65yo
PSA 6.5
Gleason 3+4=7 prostate cancer 6/12 cores
(maximum involvement 50%)
Otherwise healthy

Active surveillance

Surgery

Radiation
Case 4

65yo
PSA 12.0
Gleason 4+5=9 prostate cancer 6/12 cores
(maximum involvement 80%)
Negative CT scan and bone scan
Otherwise healthy

Active surveillance

Surgery

Radiation
How can we improve prostate cancer screening and management?

New biomarkers and genetic tests

- Kallikrein panels (4K score, Prostate Health Index)
- Urine tests (PCA3 and TMPRSS2-ERG)
- Oncotype Dx

Imaging

- Prostate MRI +/- MRI-fusion biopsy

Better patient selection

- Active surveillance versus more aggressive treatment

Better surgical technique and radiation delivery

Shared decision making