

PSA Screening for Prostate Cancer Redeemed by MRI

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- I, Lee Jackson do NOT have a financial interest/arrangement with one or more organizations that could be perceived as a real or apparent conflict of interest in the context of the subject of this presentation

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- Why is it important to screen for Pca?
- Pca is the most common non-cutaneous cancer in men
- Pca is the second most common cause of cancer death in men
- Localized Pca is asymptomatic
- Symptoms are produced by advanced disease and metastases

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- Importance of Screening for Pca
- Management options for late stage disease are limited
- To reduce Pca mortality and morbidity we must diagnose early stage disease
- Because it is silent, we must look for it.
- We must screen

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- PSA Screening
- PSA is a normal, harmless protein specific to the prostate that we use to estimate a man's risk for prostate cancer
- It is NOT cancer specific
- We interpret it over time in the context of age group and other risk factors
- Family history/African American ethnicity

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- PSA Screening: Controversy and Confusion
- 1986: PSA is introduced as a serum tumor marker to monitor response to treatment
- It was quickly adopted for screening for Pca
- 1989: USPSTF recommends against the use of all tumor markers for screening

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- PSA Screening: Controversy and Confusion
- 2008: USPSTF recommends against PSA screening for men over the age of 75
- 2012: USPSTF recommends against the use of PSA screening for men of all ages.
- Primary care responds with a reduction in PSA screening

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- PSA Screening: Controversy and Confusion
- Fewer biopsies results in a smaller percentage of men diagnosed with localized disease and in increased percentage of men diagnosed with advanced disease.
- JAMA Oncol.2016

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- PSA Screening: Controversy and Confusion
- Re-analysis for the original screening studies concludes that PSA screening reduced Pca mortality by 32%
- *Ann Internal Med.* 2016
- US age adjusted Pca mortality decreased by 52% in the PSA era. *Cancer J Clin.* 2017

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- PSA Screening: Controversy and Confusion
- It is clear that PSA screening is directly related to decreased Pca mortality
- USPSTF responded with a draft statement in 2017 and a final statement in 2018 recommending PSA screening in men age 55 – 69 as a shared medical decision

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- PSA Screening: Who and When
- A baseline PSA in a man in his 40s is the strongest predictor of his lifetime risk of a life threatening Pca.
- [J Clin Oncol. 2016](#)
- Baseline PSA should be less than 1.0

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- PSA Screening: Who and When
- If baseline PSA at age 40 is <1 and no other risk factors, begin annual screening at age 50
- If baseline PSA >1 or he is at above average risk, begin annual screening in his 40s
- This is not a biopsy threshold
- It is a recommendation for screening frequency

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- PSA Screening: Guideline Variability
- AUA recommends screening for men at average risk at ages 55-69, biennially
- ACS recommends asymptomatic men with a >10 yr life expectancy and average risk for prostate cancer have discussion about screening at age 50

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- PSA Screening: Guideline Variability
- NCCN recommends a discussion about PSA screening in men ages 45-75.
- This includes the use of PSA derivatives such as 4K PSA and PHI to improve patient selection for biopsy

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- PSA Screening: The Problem with TRUS/Bx
- Variation in recommendations, limits on age groups, expanded frequency of screening, derivatives of PSA are all in an effort to improve patient selection, limit biopsies and compensate for the weaknesses of TRUS guided biopsies

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- The Problem with TRUS guided biopsy
- TRUS guided biopsies are systematic but blind biopsies.
- Over diagnosis of indolent Pca
- False negatives leading to missed diagnosis, delayed diagnosis and repeat biopsies

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- MRI Triage and MRI guided biopsies
- Two recent studies provide high level evidence supporting diagnostic accuracy of MRI as a triage tool for selecting patients at risk for Pca who need to proceed to biopsy

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- MRI Triage and MRI guided biopsy
- PROMIS Trial / Lancet 2017;389:815-822
- PRECISION Trial / NEJM 2018; 378: 1767-1777
- Both are prospective, multicenter trials that compared MRI with systematic TRUS guided biopsy for investigating clinical suspicion of prostate cancer.

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- MRI Triage and MRI guided biopsy
- 28% of men with MRI results suggesting low risk of clinically significant prostate cancer were spared biopsy
- MRI guided biopsy detected more clinically significant Pca and fewer indolent Pca than TRUS guided biopsies

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- MRI Triage and MRI guided biopsy
- MRI investigation of clinical suspicion for Pca simplifies PSA screening by addressing the weaknesses of TRUS guided biopsy and improving the accuracy and reliability of biopsy

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- MRI guided biopsy
- MRI in bore targeted biopsy
- MRI/ TRUS Fusion biopsy
- Both superior to TRUS biopsy
- Fusion biopsy can be done in an office setting which improves patient access

PSA Screening for Prostate Cancer Redeemed by MRI

- Summary and Conclusion
- PSA Screening for Pca is important for the diagnosis of early stage disease
- Check a baseline PSA at age 40
- Base frequency of screening on the degree of risk for Pca
- Investigate clinical suspicion for Pca with an MRI
- Use MRI guidance for biopsy

