

Free PSA-Unlocking Its Potential

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How Good Can We Get?

- Case Study
 - 78 year old caucasian man presents with urinary retention

Limitations of PSA

- Relative lack of specificity within the 4-10 ng/mL range
 - Prostate CA found in 25% of these patients

PSA-Free or Bound?

- Serum PSA exists in two forms
 - Bound to alpha1-antichymotrypsin
 - 50-95%
 - Free

Free PSA- What's the Difference?

- Percentage of free PSA is lower in serum samples from men with prostate CA and higher in men with BPH
- Variation is the problem
 - Adjust for prostate size
 - Adjust for total PSA level

Where does one draw the cutoff?

- “At any percent free PSA level, one could be a lot more reassured in the man with the small prostate.”
- “...if somebody has a really low percent free PSA, 10 or 12, no matter how big or how small their prostate is, then you worry. And if a patient has a really high free PSA, say 30%, no matter how big or small his prostate is, you can feel reassured.”

William Catalona, M.D.

Catalona Study

JAMA 1998;279:1542-1547

■ Study Design

- Prospective blinded study using tandem PSA and free PSA
- Seven nationwide university medical centers
- 773 men
 - 379 with prostate CA
 - 394 with BPH
 - 50-75 yrs.
 - Palpably benign prostate gland
 - PSA 4-10 ng/mL
 - Histologically confirmed diagnosis

Catalona Conclusions

- Cutoff of 25% or less free PSA can be used for biopsy decision
 - Total PSA between 4 and 10 ng/mL
 - Palpably benign gland
 - Regardless of patient age or prostate size

How Good is it?

- Detect 95% of cancers
- Spare 20% of men with BPH a biopsy

What does it miss?

- CA that were missed occurred in men with percentage of free PSA > 25%
 - Primarily older patients with larger glands
 - These patients tend to have less aggressive disease
 - As percentage free PSA increased, probability of favorable pathologic findings increased

On the Horizon

- BPSA
 - Specific for benign prostate disease
 - Used in combo with fPSA
- Human kallikrein 2 (hK2)
 - Used in combo with fPSA

- Urology 2000;5:41-45.