The Predictive Powers of PSA: Working Smarter to Detect Prostate Cancer

Panel to discuss key questions about when and how to use prostate-specific antigen (PSA) testing for early detection and prediction of deadly cancer

Orlando, FL, May 19, 2014 — As physicians and researchers debate the merit of the prostate-specific antigen (PSA) test, questions have arisen about the age at which the initial test should be given, the test’s ability to accurately identify the presence of prostate cancer as well as the test’s ability to predict more aggressive forms of prostate cancer. New research presented at the 2014 Annual Scientific Meeting of the American Urological Association (AUA) will bring light to the innovative possibilities for the use of PSA. A special press event on this topic will be held Monday, May 19, 2014 at 10:30 a.m. ET, and will discuss the following studies:

**Earlier PSA Testing in African American Men - Clinical Support for the Recommendation (#MP69-09):** African American men should consider starting PSA testing at an earlier age, according to research from the Washington University School of Medicine, Family and Community Medicine at Saint Louis University and John Cochran Veterans Affairs Medical Center in Saint Louis, MO, as well as Ochsner Clinic Foundation in New Orleans, LA. One out of every six men will be diagnosed with prostate cancer in their lifetime. Your odds for prostate cancer increase to one in five if you are African American and one in three if you have a father or brother who has had prostate cancer. Using data from one of the largest African American cohorts for which prostate outcomes are reported, African American veterans ages 40-54 years diagnosed with prostate cancer after a PSA >4 ng/mL and prostate biopsy were compared to those ages 55-70 years with regard to pre-biopsy PSA level, biopsy Gleason sum, clinical TNM stage and D’Amico risk strata. The 40-54 year old African American veterans were then compared to Caucasian veterans of the same age.

Based on the results:

- African American veterans 40-54 years of age, who underwent PSA testing, had their prostate cancer caught at an earlier stage than those 55-70 years of age.

These data suggest African American men may consider initiating prostate cancer screening at an earlier age.

**PSA Levels in Men < 60 Years of Age Predicts Lethal Prostate Cancer (#MP69-06):** A single blood test before the age of 60 could predict a man’s long-term risk of prostate cancer death, according to researchers from Harvard School of Public Health, Massachusetts General Hospital, Memorial Sloan Kettering Cancer Center and the University of Illinois College of Medicine at Chicago. Using data from the Physician’s Health Study, a nested case-control study of 14,916 men who gave a blood specimen was performed. Total PSA levels of those <60 years were available for 234 prostate cancer cases and 706 age-matched controls. Conditional logistic regression was used to estimate odd ratios of the association with PSA levels at age 40-60, 40-55 and 40-50 years (comparing cases and controls).

Researchers found:

- For men aged 40-60, 40-55 and 40-50, with a PSA below the median, 0.89, 0.79 and 0.68 ng/mL respectively, the top 90th percentile had an increased risk of prostate cancer.
- Men with a PSA level in the >75th percentile for the same age groups had a greater chance of dying from prostate cancer and the association was even stronger for men with a PSA level in the >90th percentile.

These data indicate PSA level before age 60 can predict the likelihood of developing subsequent metastatic and fatal prostate cancer.

**New Analysis of PSA Trends Helps Identify Deadly Cancers Prior to Biopsy (#MP63-04):** The ability of PSA to distinguish potentially deadly cancers from non-progressive or slowly progressive disease could avoid unnecessary prostate cancer screening, biopsy and treatment in the future, according to researchers with Veterans Affairs Sierra Nevada Health Care System, Kaiser Permanente, Loyola University, Mayo Clinic, New York University and Soar BioDynamics, Inc. Using data from Veterans Affairs, researchers identified 58,523 men age 50-75 who had been diagnosed with prostate cancer and had at least three PSA tests over a span of two years prior to diagnosis. Processes allowing for researchers to estimate the amount of PSA coming from cancer and its annual exponential growth rate were added. Then, methods to estimate the all-cause death risk for years after diagnosis were employed before cancer-specific death was estimated for each group. Data showed:

- Higher exponential growth rates in PSA significantly increased the annual number of cancer-related deaths in the large population-based cohort.
- For men with a PSA history, the growth rate calculated using these methods may be predictive of which men harbor life-threatening prostate cancer.
p2PSA and Derivatives (percent p2PSA and PHI) Accurately Predict Prostate Cancer in Obese Men from a Multicenter Prospective European Study (#MP74-09): The high prevalence of obesity around the world is a growing concern among health professionals and its association with prostate cancer is controversial. A recent study from researchers in France, Germany, Italy and the United Kingdom suggests PSA derivatives %p2PSA and prostate health index (PHI) values are higher and more accurate in determining prostate cancer in obese men (BMI >30). For the study, researchers examined data of more than 950 men from the PRO-psa Multicentric European Study (PROMetheuS) project. Of these men, 14.7 percent were categorized as obese and 45.8 percent of obese men were found to have prostate cancer. Further data showed:

- In determining prostate cancer in obese patients, %p2PSA and PHI significantly outperformed total PSA, free PSA and % free PSA while decreasing the total number of biopsies.

These data indicate the use of %p2PSA and PHI derivatives are not only significant and more accurate in determining the presence of prostate cancer in obese men, they also result in a decrease in the number of unnecessary biopsies.

“PSA testing remains an effective method of detecting prostate cancer,” said Scott Eggener, MD, Associate Professor of surgery – Urologic Oncology at the University of Chicago Medicine. “Ongoing improvements are likely by incorporating personalized information such as race, age-specific PSA level, and newer PSA isoforms.”

NOTE TO REPORTERS: Experts are available to discuss this study outside normal briefing times. To arrange an interview with an expert, please contact the AUA Communications Office at 410-689-3932 or e-mail cfrey@AUAnet.org.

About the American Urological Association: The 109th Annual Meeting of the American Urological Association takes place May 16 – 21 at the Orange County Convention Center in Orlando, FL.

Founded in 1902 and headquartered near Baltimore, Maryland, the American Urological Association is a leading advocate for the specialty of urology, and has more than 20,000 members throughout the world. The AUA is a premier urologic association, providing invaluable support to the urologic community as it pursues its mission of fostering the highest standards of urologic care through education, research and the formulation of health policy.

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