BRCA Gene Mutations Associated with Increased Prostate Cancer Risk

San Diego, CA, May 9, 2016—Though predominantly known for their increased associations with breast cancer risk, germline mutations in the BRCA1 and BRCA2 genes are also associated with an increased susceptibility to other diseases, including prostate cancer. New data being presented during the 111th Annual Scientific Meeting of the American Urological Association (AUA) highlights new research on the role that genetic sequencing and testing could play in prostate cancer screening and treatment. Three studies will be highlighted by study authors during a special press conference, moderated by Dr. Brian Helfand, on May 9, 2016 at 10:00 a.m. PDT.

Studies to be presented:

Higher Frequency of Germline BRCA1 and BRCA2 Mutations in African American Prostate Cancer (Abstract MP39-18): African American men with prostate cancer may be more likely to have germline mutations in the BRCA1 and BRCA2 genes than Caucasian men with prostate cancer, suggesting that genetic testing could provide important information for treatment stratification. Using archived blood DNA samples from 857 prostate cancer patients who underwent radical prostatectomy at the institution, researchers at Walter Reed National Military Medical Center (WRNMMC) analyzed previous gene sequencing data for known and novel mutations on the BRCA1 and BRCA2 genes and compared the mutations (classified as benign or likely benign, pathogenic, or “variant of unknown significance,” or VUS) with the known clinic-pathological parameters for each patient. Men with African ancestry were more likely to have pathogenic and VUS mutations (7.3 percent) than Caucasian men (2.2 percent). Patients with pathogenic or VUS mutations had an increased frequency of metastasis (9.4 percent) than those who did not have the mutations (2.4 percent), and were more likely to have a significantly shorter time to metastasis.

Should a Man with a History of Breast Cancer be Screened for Prostate Cancer? (Abstract PD09-07): Men diagnosed with male breast cancer could benefit from screening for prostate cancer, according to new data from researchers in Illinois who identified a possible association between the two conditions. In this retrospective study using data from the Surveillance, Epidemiology and End Results (SEER) program, researchers identified men 5,753 men with first primary breast cancers. At a median follow up of 4.3 years, 250 men were subsequently diagnosed with second primary prostate cancer. A greater incidence was identified in men ages 65-74 and those with American Joint Committee on cancer (AJCC) stage I breast cancer, or hormone receptor positivity, suggesting that prostate cancer screening could be indicated for men in this age range with these disease characteristics.

High Rates of Metastatic Disease in Prostate Cancer Among BRAC2 Mutation Carriers: Implications for Screening (Abstract MP09-09): A meta-analysis of reported cases of prostate cancer in men with known BRCA2 mutations demonstrated that men with BRCA mutations are more likely to have a poorer risk at presentation including a higher rate of non-localized disease and worse outcomes than those men who do not carry the mutation. Using studies from the MEDLINE database, researchers in Buffalo and Syracuse identified and reviewed 261 cases of prostate cancer in men with BRCA2 mutations. Of those men (mean age at diagnosis 61.7 years), 71 percent had a Gleason score of 7 or higher, 41 percent had stage T3/T4 disease, and 26 percent had M1 metastasis at presentation. Upon comparing these data with the general population (using SEER data), men with BRCA2 mutations had significantly higher rates of metastatic disease (17.4 percent vs. 4.4 percent) and higher rates of stage T3/T4 cancer (40.3 percent vs. 10.8 percent).

“Though the relationship between mutations on the BRCA genes and breast cancer are well established, we are only just beginning to truly understand how these genes could impact a man’s risk of prostate cancer and aggressive disease,” Dr. Helfand said. “These studies give insight into some important ways we can use this
information to develop new methods of identifying and treating men with potentially lethal prostate cancer.”

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 email communications@AUAnet.org.

About the American Urological Association: The 111th Annual Scientific Meeting of the American Urological Association takes place May 6-10, 2016 at the San Diego Convention Center in California.

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 21,000 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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