Abstract #179589

**Gender disparity: Overlooking hereditary prostate cancer.**

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**Abstract Text:**

**Background:** Prostate cancer (PC) has been associated with germline mutations in several genes, most often BRCA2. Recently, 11.8% of men with metastatic PC were found to have germline mutations in BRCA and other DNA-repair genes. These mutations are equally inherited by men and women, both have elevated cancer risks, and National Comprehensive Cancer Network (NCCN) testing and management guidelines exist for male and female carriers. Despite this, over 95% of patients who have hereditary cancer multi-gene panel testing (MGPT) are women. We sought to describe detection rate and mutation spectrum of MGPT in men with PC compared to women with breast cancer (BC). **Methods:** Test results were reviewed for PC patients and female BC patients who had MGPT (June 2013 – May 2016) for up to 49 genes. Clinical history was obtained from test request forms. **Results:** Of 654 PC probands, 100 germline mutations were identified in 93 men (14.2%), significantly more than women with BC (6.6%; 8/1257.129; p = 2e-5). Most mutations in PC patients were in BRCA (40.9%), followed by ATM (20.4%), CHEK2 (15.0%) and Lynch syndrome-associated genes (9.7%). Of the 100 total mutations, 94% were in genes that would impact management recommendations for them and/or their relatives. The median time from PC diagnosis to MGPT was 6 years, compared to 1 year for female BC. Nearly 57% (53/93) of mutation-positive men had multiple primary cancers, 79.2% of which had PC first. Of BRCA positives with multiple primaries (n = 21), over 90% developed PC followed by subsequent cancers, yet testing was not initiated until another cancer developed. **Conclusions:** In this cohort of men with PC, MGPT identified germline mutations at significantly higher rates than females with BC. Furthermore, 55.1% (55/99) of mutation positive PC probands had BRCA and/or ATM, making them possibly eligible for a PARP-inhibitor clinical trial. Unfortunately, time from PC diagnosis to MGPT was several years longer than women, allowing many to develop subsequent cancers that may have been prevented or detected earlier with knowledge of the germline mutation. Increased awareness among clinicians is needed to identify more male mutation carriers to enable appropriate cancer risk management for themselves and their relatives.

Title: Gender disparity: Overlooking hereditary prostate cancer,
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**Is this a late-breaking data submission?** No
**Is this a abstract a clinical trial?** No
**Would like to be considered for a Merit Award?** No

**First Author Membership:** Non-Member

**Meeting:** ASCO Annual Meeting 2016

**Updates to Data:** This cohort contains results on almost twice the number of probands as the first cohort (n = 360 vs. n = 654). This abstract also describes the percentage of mutations that would impact clinical management recommendations as well as potential eligibility for PARP-inhibitors - results that were not discussed in the prior abstract.

Has this research been submitted for publication in a medical journal? No

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