Urologists' Current Practices in Screening and Treating Men With a Family History of Prostate Cancer

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OBJECTIVE To assess urologists' knowledge and utilization of family history to determine prostate cancer (PC) screening and treatment recommendations.

MATERIALS AND METHODS Questionnaires that explored urologists' knowledge, frequency, and utilization of family history information for screening and treatment recommendations for PC were prospectively collected. Data were summarized and compared using descriptive statistics.

RESULTS A total of 87 responses were collected, for a response rate of 60% (87 of 145). The majority of urologists reported that they always collect family history when discussing risk (95%) or screening (87%), and recommended earlier screening for men with family history of PC in comparison with men with no family history. Although only 57% reported always collecting family history when discussing treatment, the majority of respondents reported that a positive family history influenced their treatment recommendations. Eight percent of urologists would recommend prostatectomy for men diagnosed with low-grade, low-risk PC and no family history of PC vs 52% who would recommend the same course of treatment when the patient had at least 1 first-degree relative who died of the disease. Conversely, 91% of urologists would recommend active surveillance for men with low-grade, low-risk PC and no family history vs 47% for those with at least 1 first-degree relative who died of the disease.

CONCLUSION The majority of urologists collect information on family history of PC. Despite the lack of literature to support that patients with familial PC require more aggressive treatment, urologists were more likely to recommend definitive therapies. UROLOGY 99: 180–185, 2017. © 2016 Elsevier Inc.

Prostate cancer (PC) is a complex, polygenic disease and is the leading cause of cancer in American men. PC is one of the most heritable cancers, with an estimated 42% of the risk attributable to genetic factors.[1] However, research in this area has had limited success in identifying highly penetrant, inherited genetic factors that contribute to the disease. Although the genetic search continues, family history remains one of the most widely accepted and known risk factors.

Studies have consistently shown a direct association between increased risk of PC and the greater the number of affected family members, the more closely related they are, or an earlier age at diagnosis (younger than age 55).[2,3] For example, men who have a first-degree relative (FDR) with PC have a 1.5- to 3-fold increased risk of being diagnosed with PC.[4] Therefore, family history should be considered a critical component in appropriate risk assessment and may play a role in guiding PC screening recommendations.[2]

For most men, PC is detected through routine prostate-specific antigen (PSA)-based screening followed by biopsy.[5] However, PSA screening has been attributed to both overdiagnosis and overtreatment of PC, and its utility has been widely debated.[6] Two large clinical trials analyzed the reduction of PC-related mortality in individuals who underwent routine screening, and reported conflicting results.[7,8] The Prostate, Lung, Colorectal, and Ovarian Cancer Screening Trial found no mortality benefit for annual screening compared with opportunistic screening.[8,9] However, one of the major criticisms of the Prostate, Lung, Colorectal, and Ovarian study was the high rate of screening in the opportunistic (control) group, resulting in a contamination bias.[10] In comparison, the European Randomized Study of Screening for Prostate Cancer found a 21% relative reduction in risk of PC-related death after 9 years of

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follow-up in the screening group, and 38% relative risk reduction in years 10 and 11 of follow-up.[7,11]

Since the publication of these 2 trials, the US Preventive Services Task Force (USPSTF) updated their guidelines in 2012 and have recommended against PSA-based screening.[12] This recommendation was criticized by many experts in the field who felt that the USPSTF had underestimated the benefits and overestimated the harms of PSA screening.[13] The USPSTF was also criticized for not adequately addressing high-risk populations.[13] Other professional societies, including the American Urological Association (AUA), American Cancer Society, and American College of Physicians, have also updated their recommendations and suggested discussion of PSA screening for men of certain age groups.[14-16] Their recommendations also address men who are at high risk because of family history or African American race, and suggest that this discussion of screening occur in their life earlier than men at average risk.

In addition to the lack of clear guidelines for PC screening in those at high risk owing to a positive family history, there is also a lack of guidelines for the best practice treatment strategies. The National Comprehensive Cancer Network (NCCN) guidelines for the treatment of PC recommend that men with very low risk disease and a life expectancy of ≥20 years are given the option of active surveillance, radiation therapy, or prostatectomy.[17] Likewise, men with low-risk disease and a life expectancy of ≥10 years are given the same options. The wide range in treatment options for low- and very low-risk PC is likely related to the difficultly in differentiating cases that will remain asymptomatic from those that will become aggressive. The factors that directly influence PC aggressiveness and can impact clinical decisions regarding treatment are still being uncovered. The data regarding PC aggressiveness and family history have found opposing views. Initial studies reported an association with familial PC and aggressive disease, whereas more recent studies have not found this same association.[18-20] Further research is required to determine the relationship between family history and PC aggressiveness, and the current treatment options that urologists are recommending for men with familial disease is unknown.

Limited research studies have set out to determine urologists' family history collection practices and how they use this information in their recommendations for screening and treatment options. Given that a large number of professional societies have recently updated their PSA screening guidelines and no treatment guidelines exist for familial PC, we wanted to explore urologists' current screening and treatment recommendations for individuals with a family history of PC.

MATERIALS AND METHODS

Institutional review board approval (STU00102211) was obtained before initiation of this study. The sample was one of convenience, and all survey responses were anonymous. Participants were members of the Chicago Urological Society, with experience screening or treating men for PC. Surveys were distributed to the 145 attendees of the Chicago Urological Society November 2014 meeting on PC. The survey was developed with input from genetic counselors, a PhD urologist, and a PhD statistician. Some questions were modeled after a survey by Cremers et al., and other questions were novel to this study based on data derived over the past several years (eg new genetic mutations).[21] The survey contained 7 demographic questions and 26 questions pertaining to the study objectives, and involved both multiple-choice and written responses (Supplementary Figure 1).

Data were summarized using descriptive statistics. Select demographic variables were collapsed for group analysis. Data were analyzed using SPSS Statistics 22.0.

RESULTS

A total of 87 responses were included in the analysis, for a response rate of 60% (87 of 145). No surveys were excluded from the overall analysis. However, some participants did not answer specific questions, and therefore the total number of responses for each question varied. The characteristics of the study population are summarized in Supplementary Table S1. The majority of participants were male (86.2%) and practiced general urology (82.7%), and most were between the ages of 31 and 40 (27.6%).

Participants were asked a series of questions regarding PC risk factors. The majority correctly identified a 2- or 3-fold increased risk associated with an affected brother (78.3%, 65 of 83) or an affected father (83.3%, 70 of 84). In addition, most urologists were also able to correctly identify African American race as a risk factor (92.9%, 79 of 85), as well as the greater the number of affected family members (76.5%, 65 of 85), the more closely related the affected family members are to the patient (85.9%, 73 of 85), and the earlier the age of diagnosis (82.4%, 70 of 85).

The vast majority of participants reported that they always obtained family history when discussing PC risk (95.4%, n = 83) and screening options (87.4%, n = 76) (Table 1). The frequency of obtaining family history was more variable when discussing treatment options, ranging from never (2.3%, n = 2) to always (57%, n = 49). Participants were asked about barriers to obtaining a family history; most reported that they did not always collect a family history when discussing treatment options because they believed it would not change patient care (62%, 21 of 34).

Table 1. Frequency of obtaining a family history when discussing PC risk, screening, and treatment

Frequency of Obtaining Family History	Risk of PC (n = 87) n (%)	Screening Options (n = 87) n (%)	Treatment Options (n = 86) n (%)
Always	83 (95.4%)	76 (87.4%)	49 (57%)
Frequently	3 (3.4%)	10 (11.5%)	16 (18.6%)
Sometimes	1 (1.1%)	1 (1.1%)	14 (16.3%)
Rarely	0 (0%)	0 (0%)	5 (5.8%)
Never	0 (0%)	0 (0%)	2 (2.3%)

PC, prostate cancer.