Clinical Practice Guidelines on Prostate Cancer: A Critical Appraisal

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Purpose: Clinical practice guidelines are increasingly being used by leading organizations to promote high quality evidence-based patient care. However, the methodological quality of clinical practice guidelines developed by different organizations varies considerably. We assessed published clinical practice guidelines on the treatment of localized prostate cancer to evaluate the rigor, applicability and transparency of their recommendations.

Materials and Methods: We searched for English based clinical practice guidelines on treatment of localized prostate cancer from leading organizations in the 15-year period from 1999 to 2014. Clinical practice guidelines limited to early detection, screening, staging and/or diagnosis of prostate cancer were excluded from analysis. Four independent reviewers used the validated AGREE II instrument to assess the quality of clinical practice guidelines in 6 domains, including 1) scope and purpose, 2) stakeholder involvement, 3) rigor of development, 4) clarity of presentation, 5) applicability and 6) editorial independence.

Results: A total of 13 clinical practice guidelines met inclusion criteria. Overall the highest median scores were in the AGREE II domains of clarity of presentation, editorial independence, and scope and purpose. The lowest median score was for applicability (28.1%). Although the median score of editorial independence was high (85.4%), variability was also substantial (IQR 12.5–100). NICE and AUA clinical practice guidelines consistently scored well in most domains.

Conclusions: Clinical practice guidelines from different organizations on treatment of localized prostate cancer are of variable quality and fall short of current standards in certain areas, especially in applicability and stakeholder involvement. Improvements in these key domains can enhance the impact and implementation of clinical practice guidelines.

Key Words: prostatic neoplasms, practice guidelines as topic, evidence-based medicine, government, Florida

Abbreviations and Acronyms

ABS = American Brachytherapy Society

AGREE = Appraisal of Guidelines for Research and Evaluation

AUA = American Urological Association

CPG = clinical practice guideline

IOM = Institute of Medicine

NCCN = National Comprehensive Cancer Network®

NICE = National Institute for Health and Care Excellence

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Clinical practice guidelines are important tools to help clinicians and patients reach evidence-based decisions about health care. The development of CPGs has been central to promoting high quality, evidence-based and safe patient care. They hold promise for improving the quality, appropriateness and cost-effectiveness of medical therapies.

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Thus, leading organizations in the field of urology are increasingly recognizing the importance of CPGs and dedicating considerable resources toward developing and disseminating them. CPGs differ from systematic reviews, cost analyses and decision models by making explicit recommendations aimed at directly influencing patient, clinician and policy maker decision making. They are also becoming the basis of quality of care measures that are likely to affect urologist reimbursements with pay for performance measures on the horizon.[1,2]

Ideally CPGs from different professional organizations would use consistent, high quality methodology to reach similar clinical recommendations. Unfortunately the methodological quality of CPGs developed by different organizations varies considerably. These differences reflect the specific mission, size, financial resources, membership and target audience of each organization. Therefore, before specific recommendations from CPGs are implemented into clinical practice their underlying methodology and quality of evidence should be critically reviewed.

Accordingly we appraised published CPGs from leading organizations on the treatment of prostate cancer. Our immediate goal was to guide efforts of the Florida Prostate Cancer Advisory Council (http://prostatecanceradvisorycouncil.org) to develop a state legislature commissioned system of care for Florida. Using the AGREE II instrument we assessed the methodological rigor and transparency of those CPGs as well as the variability among them.

MATERIALS AND METHODS

We searched for CPGs on the therapeutic management of prostate cancer using 3 databases, including 1) the National Guideline Clearinghouse (http://www.guideline.gov), a public resource of AHRQ (Agency for Healthcare Research and Quality), 2) the guideline database of G-I-N (Guidelines International Network, http://www.g-i-n.net), an international nonprofit organization devoted to the development and dissemination of CPGs, and 3) PubMed® (http://www.ncbi.nlm.nih.gov/pubmed), which searches the United States NLM (National Library of Medicine).

For each of those databases we used broad, sensitive search strategies to identify relevant CPGs from leading organizations during the 15-year study period of 1999 through 2014. We included the most recent updates of previously published guidelines. CPGs limited to early detection, screening, staging and/or diagnosis were excluded from analysis. We also excluded publications (eg editorials and letters) that simply discussed guidelines. We limited our study to CPGs published in English.

To assess the quality of the CPGs in our study we applied structured data abstraction. Four independent reviewers with prior evidence-based medicine training assessed methodological quality using the validated AGREE II instrument.[3,4] It includes 23 items that map to 6 domains, including 1) scope and purpose (3 items), 2) stakeholder involvement (3 items), 3) rigor of development (8 items), 4) clarity of presentation (3 items), 5) applicability (4 items) and 6) editorial independence (2 items) (supplementary table, http://jurology.com/). The 4 reviewers completed the user training recommended by the AGREE II developers as well as 2 training rounds of CPG assessment using bladder cancer guidelines. They independently scored CPGs on a scale of 0 to 7 on each item per AGREE II instrument recommendations, quantifying the extent that criteria were met. Reviewer scores were then expressed as standardized domain scores on a percent scale of 0% to 100%. We calculated domain scores by adding all scores of individual items in a domain and scaling the total as a percent of the maximum possible score for that domain.

All assessments were based on the published full text versions of the CPGs and on any supporting documentation as referenced. Discrepancies were resolved by consensus after discussion among reviewers. If several versions of a CPG from an organization were available, we formally reviewed only the most recently published version. To test our hypothesis we performed descriptive statistics and nonparametric tests using SPSS®, version 21. We calculated the intraclass correlation and the within question variation for each of the 23 AGREE II questions as a measure of interrater reliability. Intraclass correlation was considered poor, fair, good and excellent for values in the range of less than 0.4, 0.40 to 0.59, 0.60 to 0.74 and 0.75 to 1.0, respectively.[5]

RESULTS

Ultimately 13 CPGs met our study inclusion criteria (supplementary Appendix, http://jurology.com/). Six CPGs were from organizations originating in the United States and the other 7 were from international government entities. Overall the highest median scores were in 3 AGREE II domains, including domain 4—clarity of presentation (87.5%), domain 6—editorial independence (85.4%) and domain 1—scope and purpose (84.7%) (see table and figure). The lowest median score of 28.1% was for applicability (domain 5). Although the median score of editorial independence (domain 6) was high at 85.4%, variability was also substantial with an IQR of 12.5% to 100%.

To better understand the observed AGREE II scores, especially for domains with low scores, we analyzed the responses that contributed to each domain (supplementary table, http://jurology.com/). Scores of applicability (domain 5) were low due to the low median scores (less than 50%) on questions on the presentation of monitoring and/or auditing criteria (17.9%) and on the consideration of resource implication (42.9%). In regard to stakeholder