Author’s response to reviews

Title: A Comparative Effectiveness Analysis of the PBCG vs. PCPT Risks Calculators in a Multi-Ethnic Cohort

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Author’s response to reviews:

August 30, 2019

Dr. Yigit Akin
Associate Editor
BMJ Urology

RE: BURO-D-19-00310

Dear Dr. Akin,
We are very grateful for the suggestions provided by the reviewers of this manuscript. The comments are encouraging, and the reviewers appear to share our judgment that this study and its results are clinically important.

Please see below our detailed response to the reviewers' comments. All page numbers refer to the manuscript file with tracked changes.

Sincerely,

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Reviewer #1 (Remarks to the Author): Interesting article looking at the role of 2 risk calculators in low risk prostate cancer in ethnic groups. I am unsure of the contemporary applicability of this study in the era of pre-biopsy MRI.

We appreciate your feedback and support of our paper and understand the concern. We focus on healthcare disparities and recognize that most of the country does not have access to mpMRI but do have access to online risk calculators. In order to clarify the contemporary applicability of our study, we incorporated more information in the discussion to highlight that while mpMRI practices have been increasing in the US, there are still barriers to its implementation including cost, lack of coverage by many insurers, lack of trained radiologists and the poor concordance between community and academic radiologists. Since PBCG is reportedly more accurate than PCPT 2.0, we wanted to highlight its negative impact on avoided biopsies for sites without MRI access. Please see page 14, line 309:

“With the increase popularity of multiparametric magnetic resonance imaging (mpMRI) as a PCa detection method, many are doubting the current need for risk calculators or incorporating mpMRI PIRADS score into them. There is substantial evidence supporting the use of mpMRI, as it has been shown to avoid biopsies in around 28% of men and subsequently decrease the overdiagnoses of indolent PCa15. However, the adoption of mpMRI would add approximately $3 billion annually, meaning that this diagnostic test would account for 15% of all PCa related cost21. The use of mpMRI has become common practice in large academic institutions; however, 70% of community hospitals have not adopted such practice and 75% of hospitals perform few mpMRI (&lt;20 mpMRI/month)21. Currently, a patient’s geographic location (non-urban settings) and insurance type (health maintenance organizations) greatly reduce their chances of having access to a mpMRI21, 22. The accuracy of mpMRI in community settings is
also risky with only 55% concordance between community and expert academic radiologists23. While mpMRIs show promising results, the need for predictive nomograms is still warranted in areas of the country that face barriers in the implementation of mpMRIs.”

Reviewer Comments:

Reviewer #2 (Remarks to the Author):

1- I would like to encourage the authors to better highlight in discussion section the differences in the population studied compared to previous publications.

Thank you for your suggestion and we have expounded further. We highlight that most of the publications that have studied or validated both PCPT and PBPC have not included large cohorts of African Americans – a population considered a high-risk group, since they have higher PCa incidence and higher rates of csPCa at diagnosis. Our sample consisted of an urban, multi-racial population with 48% African American enrollment. We also include some of the area under the curve estimates from the other studies for African American men for comparisons. We further addressed this by including more information in page 12, line 258:

“The PCPT RC has been mostly validated for prediction of csPCa in populations of European descent, which may miss differences in ethnic minorities in the United States. Our study differs from others in that we include a multi-racial cohort of men recruited from 3 tertiary centers and 2 public medical centers in a large metropolitan city. The PCPT 2.0 risk calculator development cohort included 219 (3.3%) Blacks, but did not report the AUCs for csPCa by race. Few studies have evaluated the performance PCPT RC in diverse populations. The Durham VA (North Carolina) cohort enrolled high numbers of Black men (45%) and reported an AUC of 0.7419. The Cleveland Clinic cohort was composed of 13% Black men and had an AUC of 0.6419. Lastly, the SABOR Cohort from San Antonio, Texas compared PCPT 2.0 across racial groups and showed that PCPT performs best in Black men compared to other races (AUC 0.80 vs. 0.66, p=0.02)20. The AUC for Blacks in our study (0.67) was notably lower than SABOR’s and Durham’s and similar to the Cleveland Clinic cohort. Like SABOR’s, the AUC for Blacks in our cohort was slightly higher than Whites’ (0.64), although this was not statistically significant.”

2- Using term High grade for GS 3+4 and higher may be confusing. I would recommend using term "clinically significant"!

We appreciate this recommendation. To avoid confusion, we replaced the term ‘high grade prostate cancer’ with “clinically significant prostate cancer (csPCa)”. In addition, we substituted the low grade prostate cancer terminology for “indolent prostate cancer”.

3- Please provide additional data on biopsy technique (number of cores, technique, ...).
To clarify the methodology of the biopsy technique, we included additional information on page 5, line 116:

“ All patients underwent a transrectal ultrasound guided biopsy with at least a 10 core biopsy with a median of 12 cores. Biopsies were read by three experienced uropathologists (XY) at Northwestern and (ABJ and VM) at University of Illinois at Chicago”