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Implications of Mental Health Illness on Outcomes of Prostate Cancer Patients in the Veterans Affairs Medical System

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CONTRACTING ORGANIZATION: Augusta University Research Institute, Inc

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14. ABSTRACT

Purpose: To determine whether mental health illness (MHI) impacts risk of prostate cancer (PC) diagnosis and aggressiveness; to explore whether MHI prior to PC diagnosis (i) impacts treatment received, (ii) adherence to guideline-specific follow-up, (iii) PC-specific outcomes, and whether (iv) MHI-specific therapy improves PC outcomes among those with MHI.

Scope: PC is the most common malignancy diagnosed in the VA system, making up 29% of oncology diagnoses. Secondary to the proportion of older men and African Americans served, a disproportionate burden of PC is placed on the VA system. Specific to the VA, a cross-sectional evaluation of 4,461,208 veterans seen in Patient Aligned Care Teams noted that 25.7% had at least one diagnosis of depression, PTSD, substance abuse disorder, anxiety disorder or serious mental illness. Many men with PC will be treated (and cured) of their disease. However, 60% of men with PC experience mental health distress, with 10-40% having clinically significant depression. We have previously demonstrated that PC patients are significantly at risk of suicidal death even up to 15 years after diagnosis. Considering this and the paucity of studies in the VA system assessing the relationship between PC and MHI, our intention is to explore several MHI/PC aims using the nationwide VA health database.

Major Findings: To date, we have used the Standard Operation Procedures (SOP) developed during the first year of the grant, to build the first several iterations of the database assessing the impact of MHI on PC in the national VA dataset. This included twice-monthly remote meetings (secondary to the COVID-19 pandemic) with the research team to first finalize the SOP, and subsequently to develop the initial iteration of the database. Given that this is the first database of its kind (assessing MHI in PC patients in the VA), there have been several prolonged yet important trouble-shooting steps with regards to operationalizing capture of MHI and pharmacotherapy in this population. These steps are being taken with the assistance (as needed throughout) of co-mentor Dr. Jean Beckham, noted PTSD and psychiatric expert. At several points throughout the last year, particularly during several waves of the pandemic, progress was unfortunately significantly delayed during this trouble shooting process (staff illness secondary to COVID, quarantine restrictions, etc). Currently, the data analysts and data technicians are running what will likely be the final iteration for identifying our study cohort.

15. SUBJECT TERMS

prostate cancer; mental health illness; veterans affairs; pharmacotherapy; psycho-oncology

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1. Introduction

In 2022 in the United States, there will be an estimated >175,000 new cases of PC and an estimated >32,000 PC mortalities. For the last 30+ years, PC has been the most common non-cutaneous malignancy among men in the United States, with 1 in 7 men being diagnosed with the disease, and 1 in 38 men dying from PC. Furthermore, PC is the most common malignancy diagnosed in the VA system, making up 29% of oncology diagnoses. Due to the large proportion of older men and African Americans served, a disproportionate burden of PC is placed on the VA system. Mental health illness. Empirical findings on the prevalence of MHI are generally heterogeneous and often differ by age, geographic location and socioeconomic status. However, a comprehensive, global systematic review reported a pooled estimate of 17.6% of respondents (age 16-65 years) that were identified as having a common mental disorder in the 12 months preceding assessment, and 29.2% of whom experienced a common mental disorder at some time during their life. A meta-analysis assessing prevalence of MHI among adults >50 years of age in North America found a lifetime prevalence of major depression of 16.5%. Specific to the VA, a cross-sectional evaluation of 4,461,208 veterans seen in Patient Aligned Care Teams (PACT) noted that 25.7% had at least one diagnosis of depression, posttraumatic stress disorder (PTSD), substance abuse disorder, anxiety disorder or serious mental illness (ie. schizophrenia or bipolar disorder). In other words, more than 1 in every 4 veterans has a major MHI. Many men with PC will be treated (and cured) of their disease. However, many may suffer not only physical but also mental/emotional side effects of treatment. Approximately 60% of men with PC experience mental health distress, with 10-40% having clinically significant depression. Development of MHI in men ≥ 65 years of age with localized PC assessed using the SEER-Medicare database demonstrated that the incidence of a MHI at 10 years was 29.7% for men on “watchful waiting”, 29.0% for those undergoing radiation therapy, and 22.6% for radical prostatectomy. Androgen deprivation therapy (ADT) is commonly used for locally advanced and metastatic PC. A SEER-Medicare study assessed 78,552 men with localized PC ≥ 65 years of age for diagnosis of depression and inpatient or outpatient psychiatric treatment. Men treated with ADT had a significantly increased incidence of depression (7.1% vs 5.2%) compared to those not exposed to ADT, in addition to greater inpatient and outpatient psychiatric treatment. Not only are men with PC at risk of MHI, but also for suicidal death. In the first detailed study assessing PC and suicidal death (SEER database), we previously published in *Cancer* that men with PC are at increased risk for suicide even up to 15 years after diagnosis. We recently assessed the relationship between post-traumatic stress disorder (PTSD) and PC, as well as depression and PC using the SEARCH database (unpublished results). There was no association between PTSD or depression and BCR rates in this RP cohort; limited events precluded evaluation of other outcomes (ie. PC specific-mortality (PCSM)). The purpose of this study is to determine whether MHI impacts risk of PC diagnosis and aggressiveness; to explore whether MHI prior to PC diagnosis (i) impacts treatment received, (ii) adherence to guideline-specific follow-up, (iii) PC-specific outcomes, and whether (iv) MHI-specific therapy improves PC outcomes among those with MHI.

2. Keywords

prostate cancer; mental health illness; veterans affairs; pharmacotherapy; psycho-oncology

3. Accomplishments

The major goals of the project for Year 2 (months 12-24) as per the SOW were to (i) identify VA men according to MHI exposure and determine PC risk, explore whether MHI prior to PC diagnosis impacts receipt of definitive therapy for localized prostate cancer, explore whether MHI prior to PC diagnosis impacts adherence to surveillance algorithms after initial treatment, and perform these initial analyses; (ii) have meetings with Dr. Freedland, the research team, and professional development advisory committee. Via bi-monthly virtual meetings, we have completed the Standard Operation Procedures (SOP) document for building this database assessing the impact of MHI on PC in the national VA dataset. Subsequently, we have developed the initial iteration of the database. Given that this is the first database of its kind (assessing MHI in PC patients in the VA), there have been several prolonged yet important trouble-shooting steps with regards to operationalizing capture of MHI and pharmacotherapy in this population. These steps are being taken with the assistance (as needed throughout) of co-mentor Dr. Jean Beckham, noted PTSD and psychiatric expert. At several points throughout the last year, particularly during several waves of the

pandemic, progress was unfortunately significantly delayed during this trouble shooting process (staff illness secondary to COVID, quarantine restrictions, etc). Currently, the data analysts and data technicians are running what will likely be the final iteration for identifying our study cohort. Weekly meetings were held with Dr. Freedland via WebEx. Opportunities for training and professional development during this time period included leading the research group during complex discussions during the development of the SOP and troubleshooting database creation. We anticipate the final iteration of the database for review by May 2022, and subsequent analysis to be undertaken thereafter. Given that this is the second year of a four year grant, the results have yet to be disseminated to communities of interest. The plan during the next reporting period is to:

- (i) Finalize the database in April/May 2022 and analyze the first Aim of this study “Determine whether MHI impacts risk of PC diagnosis and aggressiveness”. The goal is to have this data submitted to either the European Society of Medical Oncology (ESMO) 2022 annual meeting (abstract deadline ~May/June 2022) or the Genitourinary section of the American Society of Clinical Oncology (GU ASCO) 2022 annual meeting (abstract deadline ~October 2022).
- (ii) Second, we plan to derive the subcohort(s) for Aim 2 to “explore whether MHI prior to PC diagnosis (i) impacts treatment received, (ii) adherence to guideline-specific follow-up, (iii) PC-specific outcomes, and whether (iv) MHI-specific therapy improves PC outcomes among those with MHI.”
- (iii) Third begin analyses for Aim 2-3 and draft manuscript for Aim 1 data

4. Impact

Nothing to report during the first year of this four-year grant

5. Changes/Problems

The biggest change/problem during the second year of this four-year grant was the ongoing global COVID-19 pandemic. This manifested specific to this grant in being unable to have in-person research meetings with the research/analyst team for the entire reporting period. During several of the COVID-19 variant spikes, this lead to *significant* delays in progress. Second, this led to several members of the original team being reassigned or working from home, which greatly diminished the ability to finalize the SOP and database creating, as was planned. Third, our data operations manager unexpectedly took a position with another research team, which additionally delayed progress. We have now hired Michael Burns, who has taken over and doing a great job. Thus, we are very confident to be able to hit the milestones as listed above.

6. Products

Nothing to report

7. Participants & Other Collaborating Organizations

Name:	<i>Zachary Klaassen, MD, MSc</i>
Project Role:	<i>PI</i>
Nearest person month worked:	<i>5</i>
Contribution to Project:	<i>Dr. Klaassen serves as the PI for the project and has been involved in supervising development of the project SOP and initial iterations of the database creation. Additionally, he was the lead in developing contingency plans for the team during the COVID-19 pandemic</i>
Funding Support:	<i>None other than this award</i>

Name:	<i>Justin Waller, MS</i>
Project Role:	<i>Project Coordinator</i>

Nearest person month worked:	2
Contribution to Project:	<i>Mr. Waller serves the project coordinator, instrumental in updating the SOP, organizing meetings, and administrative assistance</i>
Funding Support:	<i>None other than this award</i>

Name:	<i>Michael Burns</i>
Project Role:	<i>Data Operations Manager</i>
Nearest person month worked:	1
Contribution to Project:	<i>Mr. Burns is responsible for developing data programming (as well as supervising the data technicians) for executing the building of the MHI PC database. He has recently been assigned to this grant after the departure of the previous Data Operations Manager</i>
Funding Support:	<i>None other than this award</i>

Name:	<i>Jessica L. Janes</i>
Project Role:	<i>Senior Statistician</i>
Nearest person month worked:	1
Contribution to Project:	<i>Ms. Janes is the senior statistician for this research project, and has been instrumental in developing the database. She will obviously key during the upcoming analysis portion of this grant</i>
Funding Support:	<i>None other than this award</i>

There has been no change in the active support of the PI or senior/key personnel during this reporting period. No other organizations were involved as partners.

8. Special Reporting Requirements

Nothing to report

9. Appendices

Nothing to report