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TITLE: 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, in line with the revised Statement of Work, 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. This included twice-monthly remote meetings (secondary to the COVID-19 pandemic) with the research team to finalize the SOP, which included finalizing variable and outcome operationalization. Towards the end of finalizing the SOP, we had several meetings with co-mentor Dr. Jean Beckham, noted PTSD and psychiatric expert, to ensure clear delineation of MHI specific pharmacotherapy and psychotherapy. The data analysts and data technicians are currently running the first 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 2021 in the United States, there will be an estimated >174,000 new cases of PC and an estimated >31,000 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 1 (months 1-12) as stated in the approved SOW were to (i) identify VA men according to MHI exposure and determine PC risk; (ii) have meetings with Dr. Freedland, the research team, and professional development advisory committee. 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. This included twice-monthly remote meetings (secondary to the COVID-19 pandemic) with the research team to finalize the SOP, which included finalizing variable and outcome operationalization. Towards the end of finalizing the SOP, we had several meetings with co-mentor Dr. Jean Beckham, noted PTSD and psychiatric expert, to ensure clear delineation of MHI specific pharmacotherapy and psychotherapy. 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. Although we have yet to identify VA men according to MHI exposure and determine PC risk, the data analysts and data technicians are currently running the first

iteration for identifying our study cohort. We anticipate the first iteration of the database for review by April/May 2021. Given that this is the first 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 finalize the database in May-June 2021 and commence analysis of the first Aim of this study “Determine whether MHI impacts risk of PC diagnosis and aggressiveness”. 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.”

4. Impact

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

5. Changes/Problems

The biggest change/problem during the first year of this four year grant was the global COVID-19 pandemic. This manifested specific to this grant in being unable to have in-person research meetings with the research/analyst team. 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 in the first several months of the award, as was planned. However, new key members of the team (ie. the senior statistician) have been incorporated into the research framework resulting in completion of the SOP and initial iterations of building the dataset.

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. 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:	<i>2</i>
Contribution to Project:	<i>Mr. Waller serves the project coordinator, instrumental in updating the SOP, organizing meetings, and hitting guidelines</i>
Funding Support:	<i>None other than this award</i>

Name:	<i>Meagan Foster</i>
Project Role:	<i>Data Operations Manager</i>

Nearest person month worked:	1
Contribution to Project:	<i>Ms. Foster is responsible for developing data programming (as well as supervising the data technicians) for executing the building of the MHI PC database</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 estimated sample sizes, as well as operationalizing variables and outcomes</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