A nationwide VA study on systemic treatment patterns in Black men with metastatic castration-resistant prostate cancer: Study update

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Background

We propose to investigate treatment patterns using a nationwide Veterans Affairs (VA) cohort to generate the largest cohort of Black men with metastatic castration-resistant prostate cancer (mCRPC, to our knowledge) for adequately powered assessments of non-biological factors of race that can drive disparities in systemic therapy outcomes between Black and White men. We hypothesize that differences in systemic therapy outcomes between Black and White men with mCRPC are attributable to variations in treatment patterns by race. To test our hypothesis, we will specifically look at usage of standard therapies and time to initiation of first-line mCRPC therapies by race.

Methods

This is a retrospective cohort study of patients in the VA system who have been diagnosed with mCRPC. Among Veterans receiving a standard first-line mCRPC therapy, we will calculate the time from diagnosis of mCRPC to initiation of systemic agent stratified by race. The difference in drug usage rates between races will be tested by two-sided chi-squared test. The difference in time to first-line mCRPC treatment initiation between races will be tested by a) linear regression and b) Cox regression with time to first-line treatment initiation as the outcome and race as the predictor adjusting for potential differences at the time of treatment initiation. Differences in overall survival (OS) for men who receive standard mCRPC therapies will be assessed using log rank tests and prostate-specific antigen (PSA) response will be tested by univariable and multivariable logistic regression. Models will be adjusted for receipt of drug, time to first-line treatment initiation, and other clinical covariates.

Results

Preliminary numbers of all men available within VA Informatics and Computing Infrastructure (VINCI) reflecting treatment for mCRPC since January 1, 2000 resulted in a dataset of 39,925 men; of these, 11,474 received first-line treatment of abiraterone; 20,201 with docetaxel; and 5,136 with enzalutamide. Additionally, 72 men treated radium-223 and 10 men receiving treatment with Sipuleucel-T were identified. Year 1 and 2 of this project has been spent querying VINCI to abstract data and using natural language processing (NLP) models to generate one of the largest datasets of men with mCRPC receiving standard therapies. Year 3 will focus on finalizing quality assurance of the dataset given the complexity of data returned (approximately 40,000 Veterans) and performing data analyses on proposed outcomes.

Conclusions

We have preliminarily constructed an analytic cohort of 39,925 men that represents one of the largest cohort ever studied for mCRPC health disparities. This nationwide VA database will be used for adequately powered assessments of non-biological factors of race that can drive disparities in systemic therapy outcomes between Black and White men such as drug usage rates and time to initiation of first-line mCRPC systemic therapies.

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Conflicts of Interest Disclosure Statement

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