Patterns of Treatment Among Veterans with Advanced Prostate Cancer

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Abstract

Background: Several treatment options are available for men with metastatic castration-resistant prostate cancer (CRPC), including chemotherapy, targeted hormonal therapies, and immunotherapy. Choice of treatment is likely impacted by non-clinical factors such as race, geography, VA facility, and physician-level variables. The expansion of treatment options and the variables influencing treatment choices have created the potential for widespread variation in treatment and uncertainty about optimal treatment patterns.

Methods: Using the VA extensive electronic laboratory and clinical infrastructure, we investigated the contemporary patterns of care for Veterans with CRPC and outcomes associated with different patterns of care. We identified men who were diagnosed with prostate cancer within the VA system between 2010-2017 and men who received one of the following focus treatments used to treat men with CRPC: ketoconazole, mitoxantrone, docetaxel, abiraterone, enzalutamide, cabazitaxel, sipuleucel-T, and radium-223. To assess patterns of care in regards to first treatment used, treatment sequences, and outcomes, we further restricted our cohort to patients treated continuously in the VA and who were confirmed castration-resistant at the time of their first therapy.

Results: Among 569,432 Veterans identified with prostate cancer between 2010-2017, 3.16% (n=17,991) received at least one of the focus treatments used to treat patients with mCRPC. Abiraterone was the most commonly used treatment, received by 10,303 patients (57.3%) at some point in their disease course. Among our final cohort of Veterans with CRPC (n=4,652) there was a marked shift in patterns used throughout the years, from ketoconazole and docetaxel used most commonly in the earlier years (2010-2011) to abiraterone beginning in 2012 and a rapid rise in the use of enzalutamide beginning in 2015. Race and Charlson comorbidity index did not differ substantially among patients started on different first-line therapies, but patients receiving docetaxel first-line were younger (median age 69 years) compared to patients receiving oral first-line therapies (median age 74 years). Patients who received docetaxel first-line had higher median PSA values and greater median PSA velocities at the time of first-line treatment than patients who received an oral therapy first-line, suggesting they had more aggressive disease at initial treatment. Furthermore, patients receiving enzalutamide first-line had the lowest median PSAs and PSA velocities prior to treatment start.

Conclusion:

Abiraterone and enzalutamide have become the most commonly used first-line therapies for CRPC. However, docetaxel may still be the preferred treatment among providers for patients with more aggressive cancers at time of first treatment. Further analysis is being done currently to determine which first-line therapy may be associated with improved outcomes after accounting for disease severity at treatment start.