Patient and Provider Variables Associated with Variation in the Systemic Treatment of Advanced Prostate Cancer

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Background: Six treatments have improved overall survival in men with metastatic castration-resistant prostate cancer (mCRPC), each differing in toxicities and cost. This study sought to characterize patient, provider, and regional factors associated with variation in treatment of men with mCRPC in order to determine the potential barriers to treatments for some patients.
Methods: A national claims database of commercially insured patients was used to identify patients with prostate cancer treated with abiraterone, enzalutamide, docetaxel, cabazitaxel, sipuleucel-T, or radium-223 between 2010 and 2016. Multinomial and binomial logistic regressions were conducted to determine patient and provider factors associated with treatment patterns.
Results: Among 5,575 patients identified, the majority of patients were treated by a medical oncologist for their first-line treatments, with more patients receiving abiraterone than enzalutamide and few prescriptions for sipuleucel-T as first-line therapy (41.5% abiraterone, 39.6% docetaxel, 12.5% enzalutamide, 5.5% sipuleucel-T). In contrast, among patients treated by a urologist for first-line therapy, 34.2% received sipuleucel-T, 31.9% received enzalutamide, and 31.3% received abiraterone. Patients with a household income >$99,000 were less likely to receive an expensive oral androgen signaling inhibitor (abiraterone or enzalutamide) as first-line treatment versus docetaxel compared to patients with a household income <$50,000 (odds ratio, OR, 0.66, 95% confidence interval, CI, 0.48-0.92). Patients who are Black (OR 1.43, 95% CI 1.02-2.01), live in the Pacific region versus the South Atlantic (OR 2.68, 95% CI 1.74-4.11), received treatment from a urologist versus a medical oncologist (OR 16.05, 95% CI 6.01-42.86), or had pre-existing heart failure (OR 1.69, 95% CI 1.18-2.42) were more likely to receive first-line oral androgen signaling inhibitors over docetaxel, independent of other factors on multivariable analysis.
Conclusion: Clinicians and policy makers should be aware of the non-clinical patient factors and provider factors that may influence use of novel therapies among patients with advanced prostate cancer. Importantly, the paradoxical effect of income as a possible barrier to receipt of abiraterone or enzalutamide and the substantial effect of provider specialty on first-line treatment rendered to patients with mCRPC require further study.

Conflicts of interest: The authors have no competing interests and nothing to disclose.