Prostate Cancer: Exposures, Racial Differences, and Treatment Trends

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Prostate cancer is the most common solid tumor cancer diagnosed within the VHA.[1] Veterans who are diagnosed with prostate cancer and have certain environmental exposures or who were in specified deployment locations are awarded disability compensation based on the presumptive link.[2,3] Agent Orange specifically has also been shown to increase incidence of metastases and prostate cancer mortality in veterans.[2]

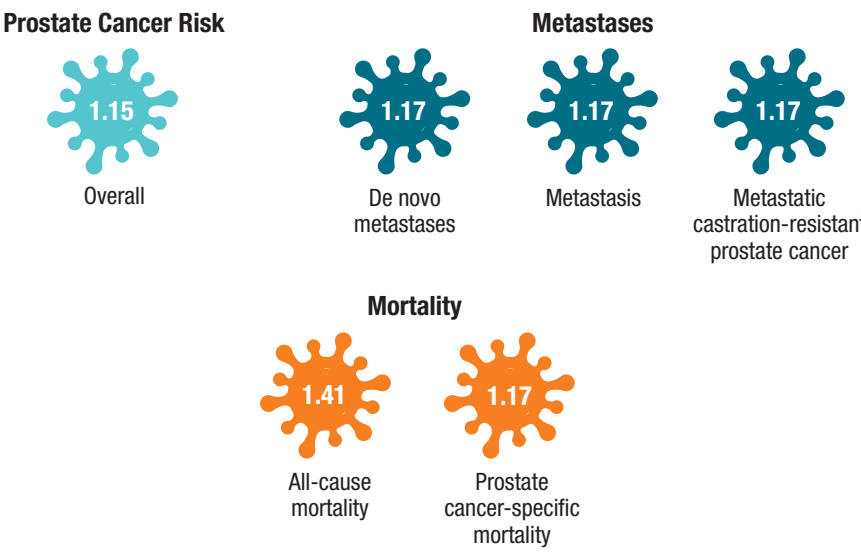
Precision oncology is key to improving outcomes in veterans with prostate cancer. Recent studies have shown that genetic alterations in prostate cancer are affected by race and ethnicity; specifically, different mutations correlate with survival and treatment outcomes in non-Hispanic Black and White veterans.[4] Within the VA healthcare system, while these differences in genetic alterations exist, survival is similar in both groups, showing the effect of equitable healthcare on prostate cancer outcomes in veterans.[4]

For metastatic hormone-sensitive prostate cancer (mHSPC), the standard treatment has evolved in recent years to combination therapy, with an androgen receptor pathway inhibitor (ARPI) with or without docetaxel added to the standard protocol of androgen deprivation therapy (ADT).[5] Combination therapy has been shown to improve overall survival in veterans with mHSPC compared with just ADT alone.[5] Prostate cancer care is a key concern in the VHA system, but promising new treatments and genetic advances are on the horizon.[2,4,5]

Agent Orange and Prostate Cancer Outcomes[2]

Of the 2.6 million veterans who served in Vietnam, 30% were exposed to Agent Orange.

Displayed as hazard ratios; compared to those who served in Vietnam but were not exposed to Agent Orange

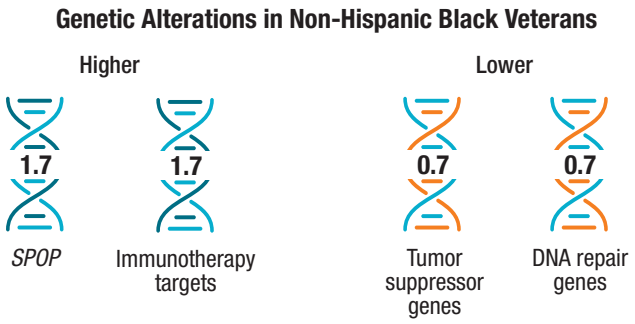


The association between Agent Orange exposure and prostate cancer risk in Vietnam veterans may not be causal, but Agent Orange exposure marginally increases prostate cancer risk in this population.

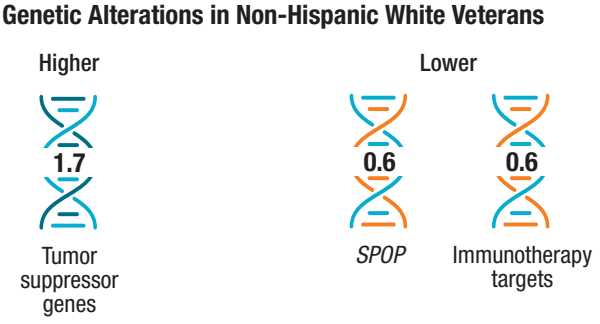
Racial Differences in NGS for Metastatic Disease[4]

A study of about 5000 men who underwent next-generation sequencing (NGS) for metastatic prostate cancer through the VA from 2019 to 2023 compared genetic alterations in non-Hispanic Black and non-Hispanic White veterans. In these two groups, nine of the 10 most commonly altered genes were the same, but there were differences in the frequency of these genetic alterations in each group.

Displayed as odds ratios; odds of genetic alteration compared to Non-Hispanic White veterans



Compared to Non-Hispanic Black veterans



Immunotherapy targets include MSI-high, mismatch repair pathway, and *CDK12* alterations.

Treatment Use and Survival Trends in mHSPC[5]

Approximately 6000 veterans with de novo mHSPC treated at the VHA from 2013 to 2022 were assessed for treatment use and survival patterns. Combination therapy was defined as docetaxel or an ARPI (eg, abiraterone, enzalutamide, apalutamide, or darolutamide) within 120 days of ADT.