# Homologous recombination repair alterations, next-generation sequencing testing, and time-to-next-treatment by race among patients with metastatic castration-sensitive prostate cancer

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## What do these results mean for individuals with mCSPC?

- Patients with metastatic castration-sensitive prostate cancer (mCSPC) who have *BRCA*1/2 mutations tend to need their next treatment sooner compared to those without these genetic alterations
- These findings suggest their cancer may progress or become resistant more quickly, highlighting the importance of early testing and consideration of targeted therapies

## What was the purpose of this study?

To evaluate the time to next treatment and frequency of DNA testing for homologous recombination repair (HRR) mutations in patients with metastatic castration-sensitive prostate cancer (mCSPC). Additionally, the study explored the potential racial disparities in the utilization of genetic testing and the impact of testing on therapeutic management

## How was the study carried out?

- The study was conducted by looking at data from cancer centers across the US (using a nationwide health database and core registry), to identify adult patients who initiated treatment for mCSPC after January 1, 2018 and had been tested for HRR mutations at least once
- The time to next treatment (TTNT) initiation was descriptively compared across the different racial groups. Researchers also assessed the frequency of DNA testing for genetic mutations (next generation sequencing, NGS) using the core registry

## What were the limitations of the study?

- The study only included patients who had already received HRR alterations tests, which may not represent all patients with mCSPC
- The data was collected from specific oncology centers, which might not reflect the broader population.
- There was a disparity in the number of patients from different racial backgrounds, with more White patients included than non-White patients

## What were the results?

***BRCA* mutations were the most common HRR mutation observed and patients with these mutations required subsequent treatment sooner (regardless of race). NGS testing rates have increased in recent years with less racial disparity but is still not concordant with clinical guideline recommendations for all patients with mCSPC.**

### Who was in the study?

After screening, there were **1,121** patients with mCSPC with available race/ethnicity data

- A total of 782 patients (69.8%) were White and 339 (30.2%) were non-White, of which 145 (42.8%) were Black
- The average age was 70 years for the White patients, 68 years for the non-White patients and 66 years for the Black patients
- Of the White patients, 17.4% were HRR+ with 12.7% being *BRCA*+
- Of the non-White patients, 16.5% were HRR+ and 10.9% were *BRCA*+
- Of the Black patients, 15.2% were HRR+ and 9.7% were *BRCA*+

### What was the relationship between race/ethnicity and the need for a subsequent treatment?

By 24 months a higher proportion of non-White patients required subsequent treatment compared to White patients

**Non-White 60.6%**
Median TTNT, **17 months**

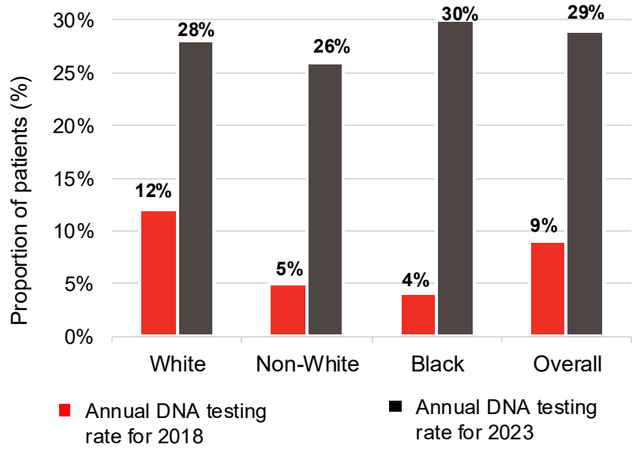
**White 56.1%**
Median TTNT, **19.2 months**

**Black 54.7%**
Median TTNT, **21.2 months**

Patients with *BRCA* mutations had numerically shorter TNNT compared with those without HRR mutations

### What was the frequency of DNA testing, and did this differ by race/ethnicity?

Annual DNA testing rates among treated patients with mCSPC increased from 2018 to 2023, but were higher among White patients relative to non-White patients




## Glossary of Terms

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| **HRR** | Homologous recombination repair is a process that uses an undamaged, homologous sequence as a template to repair DNA double-strand breaks, ensuring high-fidelity repair and genomic stability. | **NGS** | Next-generation sequencing is a modern method used to quickly read and analyze a person's DNA. It helps scientists detect changes or mutations that could cause diseases like cancer. |
| **mCSPC** | A type of prostate cancer that has spread to other parts of the body but is still responsive to treatments that lower testosterone. | **TTNT** | Time to next treatment refers to how long it takes for a patient to start a new treatment after finishing their current one. |

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*AI was used in the preparation of these summaries.