Biomarker testing patterns among patients newly diagnosed with prostate cancer in a community oncology network

Lisa Dwyer Orr, MPH;[1] Siraje Mahmud, MS, PhD;[2] Mika Cline, MD;[3] Ayda Mirsalehi, PhD;[2] Monica Lisi, BS;[2] Laura Ensley, BSN, RN, OCN;[2] Lorraine Brisbin, MS, MLS;[2] R Steven Paulson, MD[3]

[1]Johnson & Johnson, Titusville, NJ, USA; [2]Precision Health Informatics, LLC, Dallas, TX, USA; [3]Texas Oncology, Dallas, TX, USA

Key Takeaway

Biomarker testing patterns and time-to-treatment initiation varied widely among patients newly diagnosed with prostate cancer in the community setting, where most patients receive their cancer care

Conclusions

The study findings provide insights into the frequency of biomarker testing among patients newly diagnosed with prostate cancer receiving care in a large community setting

Despite guideline recommendations for biomarker testing, only a small percentage of patients overall received it, with slightly higher rates among those diagnosed with stage IV cancer

To realize the potential benefits of targeted therapies, there is a need to improve biomarker testing rates to better determine which patients are eligible for targeted treatment

The findings suggest that opportunities exist to increase biomarker testing education for healthcare providers in the community setting and to design tailored interventions to increase testing among patients with prostate cancer

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Disclosures

LDO is an employee of Johnson & Johnson. **SM**, **AM**, **ML**, **LE**, and **LB** are employees of Precision Health Informatics, LLC, a research company paid by Johnson & Johnson to undertake the analyses for this study. **MC** has no conflicts to declare. **RSP** is an employee of Texas Oncology PA, has leadership role at Texas Oncology PA, owns shares of Amgen, Actinium Pharmaceuticals, TGTX, BMS (all stock less than $25k in individual value) and has received travel and accommodation expenses from Texas Oncology, US Oncology.

Background

- Prostate cancer guidelines recommend that clinicians order biomarker testing for patients with metastatic prostate cancer[1]
- Tumor biomarker testing is performed to identify potential actionable mutations that can inform appropriate treatment strategies as well as determine a patient's eligibility for clinical trial participation
- The study aimed to evaluate biomarker testing patterns among US patients newly diagnosed with prostate cancer who received care in the community setting

Methods

- A retrospective database analysis of patients receiving care in a large oncology practice in the West South Central region of the United States was conducted
- The database inputs consisted of iKnowMed (electronic medical records), ELLKAY CareEvolve (Genetic HL7 interface), and the oncology network's Molecular Data Warehouse, which covered approximately 1.7 million unique patients with various cancer types
- The analysis included patients newly diagnosed with prostate cancer between January 1, 2018, and June 30, 2022
- Descriptive statistics were used to report baseline demographics and clinical characteristics and to determine the percentage of patients with metastatic disease who received biomarker testing during the study period

Results

- The cohort consisted of 18,706 patients aged ≥18 years who were newly diagnosed with prostate cancer
- Mean age at diagnosis was 71.0 years (standard deviation [SD] 9.1); 46.4% of patients were non-Hispanic White, 12.6% were Hispanic, 7.1% were Black or African American, and 0.8% were Asian (**Table 1**)
- The primary insurance coverage for the majority of patients was commercial (59.8%), followed by Medicare/Medicaid (39.8%)
- Fewer patients were diagnosed in early (I and II) than in late (III and IV) stages of the disease, 32.4% and 38.3%, respectively

TABLE 1: Patient demographics and clinical characteristics

Characteristic	N=18,706
Mean age at diagnosis, years (SD)	71.0 (9.1)
Race/ethnicity, n (%)	
Hispanic[a]	2362 (12.6)
Non-Hispanic Asian	152 (0.8)
Non-Hispanic Black or African American	1331 (7.1)
Non-Hispanic Other[b]	4794 (25.6)
Non-Hispanic White	8670 (46.4)
Unknown/declined to inform	1397 (7.5)
Provider location[c], n (%)	
Rural	92 (0.5)
Urban	18,614 (99.5)
Primary insurance coverage, n (%)	
Commercial	11,185 (59.8)
Medicare/Medicaid	7445 (39.8)
Unidentified or self-pay	76 (0.4)
Disease stage at diagnosis, n (%)	
I	1464 (7.8)
II	4594 (24.6)
III	2656 (14.2)
IV	4510 (24.1)
Missing	5482 (29.3)

Characteristic	N=18,706
ECOG PS score, n (%)	
0	10,611 (56.7)
1	3124 (16.7)
2–5	543 (2.9)
Missing	4428 (23.7)
Karnofsky Performance Scale score, n (%)	
90–100	10,992 (58.8)
70–80	2842 (15.2)
0–60	444 (2.4)
Missing	4427 (23.7)
Histopathology, n (%)	
Adenocarcinoma	2489 (13.3)
Small cell carcinoma	29 (0.2)
Squamous cell carcinoma	2 (0.01)
Missing	16,186 (86.5)
Comorbidities[d], n (%)	
Other cancer	2568 (13.7)
Hypertension	2332 (12.5)
Nutrition deficiency	1454 (7.8)
Hyperlipidemia	1269 (6.8)
Diabetes	938 (5.0)

[a]Includes Hispanic or Latino American Indian/Alaska Native, Hispanic Asian, Hispanic Black or African American, Hispanic multi-race, Hispanic Native Hawaiian/Other Pacific Islander, Hispanic other, and Hispanic White (but excludes "unknown/declined to inform").
[b]Includes Non-Hispanic American Indian/Alaska Native, Non-Hispanic multi-race, and Non-Hispanic Native Hawaiian/Other Pacific Islander.
[c]Provider location for two respondents was unknown.
[d]Comorbidities occurring in ≥5% of patients.
ECOG PS, Eastern Cooperative Oncology Group performance status; **SD**, standard deviation.

- Biomarker testing was performed for 2548 (13.6%) of patients with prostate cancer. Among all patients diagnosed with stage IV prostate cancer (n=4510), 1044 (23.2%) received biomarker testing
- The mean (SD) time from disease diagnosis to first biomarker testing was 266 (381) days, from the first biomarker testing to receipt of test results was 32 (101) days, and from biomarker testing to treatment initiation was 178 (394) days
- Of all biomarker testing, 6.2% were single gene tests, 49.7% were broad panel tests, and 24.3% were single gene plus broad panel tests; for 19.8%, the type of test was unknown (**Figure 1**)
- Among the patients with stage IV prostate cancer who received biomarker testing (n=1044), 265 (25.4%) tested positive for an actionable mutation and, of these, 35 (13.2%) received a targeted therapy (**Figure 2**)
- For patients with stage I through IV prostate cancer who initiated treatment within the oncology network (n=6429), hormone therapy was the most common treatment received by patients with prostate cancer (n=5038, 78.4%), followed by chemotherapy, hormone therapy maintenance (n=635, 9.9%). Patients may have received supportive care as a part of these regimens (**Figure 3**)

FIGURE 1: Types of biomarker testing performed on patients with stage IV prostate cancer (n=2548)

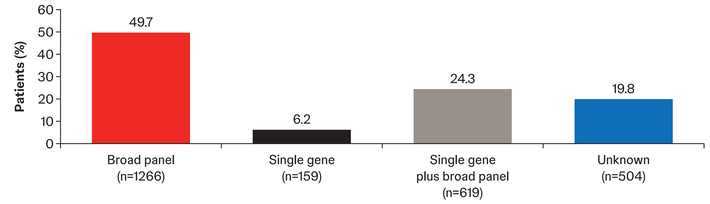


FIGURE 2: Numbers of patients with stage IV prostate cancer receiving biomarker testing, testing positive for an actionable mutation, and receiving targeted therapy (n=4510)

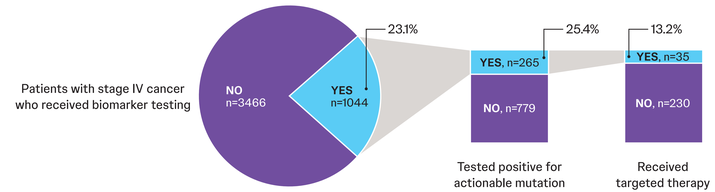
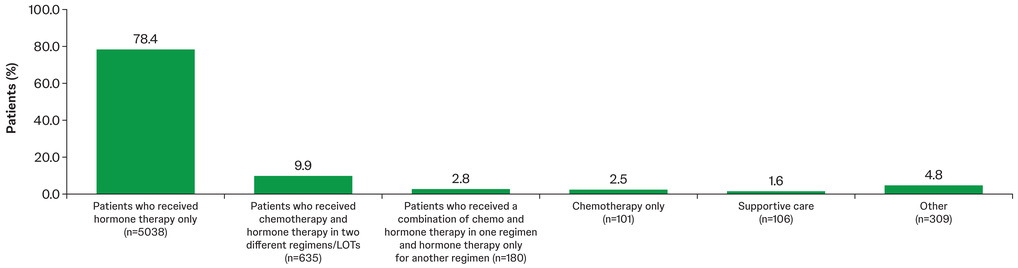


FIGURE 3: Treatments received by patients (n=6429)



Reference

1. NCCN Clinical Practice Guidelines in Oncology. Prostate cancer. Version 4.2024; May 17, 2024.

Prostate Cancer

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