

# Population-based Assessment of Treatment Patterns for High-Risk Localized Prostate Cancer

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## Key Takeaway

- Despite high rates of local SOC therapy, patients with High Risk/very High Risk (H/vHR) PCa progress to develop metastatic disease and CRPC on average within 3 years.
- These patients may benefit from intensified systemic therapy such as is being investigated in the phase 3 ATLAS (NCT02531516) and PROTEUS (NCT03767244) trials.

## Conclusions

- Overall treatment patterns are similar for patients with Intermediate Risk (IR) and H/vHR PCa despite significantly worse clinical outcomes for patients with H/vHR disease.
- These data highlight the potential for improved clinical outcomes in this patient population with the use of intensified systemic therapies including Androgen Receptor Pathway Inhibitors (ARPIs).
- Data analysis for this study is ongoing.

## Introduction

- Patients with high-risk localized prostate cancer, while a relatively small subset, have more aggressive disease biology.
- They experience substantial risk of disease recurrence after treatment, risk of metastases, and death.
- To date, treatment paradigms for these patients include radiotherapy with androgen deprivation therapy and radical prostatectomy with PLND.
- However, there is a growing body of evidence to support intensified therapy benefiting these patients. To contextualize this emerging clinical trial data, we sought to characterize real world treatment patterns for these patients.

## Methods

Retrospective population-based cohort study analysis using province-wide linked administrative data in Ontario, Canada.

Patients with H/vHR prostate cancer on the basis of Gleason score, PSA, and tumor stage compared to those with intermediate disease risk.

## Results

- Between 2010-2021, 18,365 patients with IR and 13,206 patients with H/vHR PCa were identified
- Most received some local therapy, though this was more common for H/vHR (95.5%) than IR (81.6%) patients ( $p < 0.001$ ; stand diff 0.44) (Table 1)
- Intensified systemic therapy was rarely administered within 1 year of cancer diagnosis

- Patients with H/vHR disease experienced worse oncologic endpoints including more frequent and earlier diagnosis of metastatic disease, CRPC, PCa events, and death (Table 2)

Table 1. Treatment Patterns within 1 Year of Diagnosis by LPC Risk

| Treatment   |   | Total<br>N=31,571 | Intermediate Risk<br>N=18,365 | High- or Very High-Risk<br>N=13,206 | P Value | Standardized Difference |
|---|---|-------------------|-------------------------------|-------------------------------------|---------|-------------------------|
| Radical prostatectomy (RP)                                      | n (%)   | 13,493 (42.7%)    | 7,286 (39.7%)                 | 6,207 (47.0%)                       | <.0001  | 0.148                   |
|   | Median time from diagnosis to treatment (Q1-Q3), months | 3.4 (2.4-4.8)     | 3.5 (2.4-5.1)                 | 3.3 (2.3-4.6)                       | <.0001  | 0.127                   |
| External beam radiotherapy (EBRT) with or without brachytherapy | n (%)   | 13,748 (43.5%)    | 7,427 (40.4%)                 | 6,321 (47.9%)                       | <.0001  | 0.150                   |
|   | Median time from diagnosis to treatment (Q1-Q3), months | 4.2 (2.6-6.2)     | 3.4 (2.3-5.2)                 | 5.1 (3.4-7.2)                       | <.0001  | 0.594                   |
| Chemotherapy  | n (%)   | 77 (0.2%)         | 7 (0.0%)                      | 70 (0.5%)                           | <.0001  | 0.093                   |
|   | Median time from diagnosis to treatment (Q1-Q3), months | 4 (2.7-7.1)       | 4.1 (3-6)                     | 4 (2.6-7.3)                         | 0.9083  | 0.047                   |
| ARPIs   | n (%)   | 49 (0.2%)         | *1-5                          | *44-48                              | NA      | NA                      |
|   | Median time from diagnosis to treatment (Q1-Q3), months | 8.1 (4.7-10)      | **NA                          | 8.1 (4.7-10)                        | NA      | NA                      |

\* Sample size is compressed due to the small # for the difference between this group and the group for brachy, or between this cohort of patients aged 66+ and the overall cohort patients.  
\*\* Any treatment including RP, EBRT, brachytherapy, ADT (including orchiectomy), chemotherapy, ARATs, PARPi and radium-223.

Table 2. Clinical outcomes for patients with intermediate and high risk localized prostate cancer

| Outcome                                 |                  | Intermediate Risk<br>N=18,365 | High- or Very High Risk<br>N=13,206 | P Value | Standardized Difference |
|---|------------------|-------------------------------|-------------------------------------|---------|-------------------------|
| Time to diagnosis of metastatic disease | n (%)            | 5,435 (30%)                   | 6,039 (46%)                         | <.0001  | 0.338                   |
|   | Median (IQR) yrs | 4.3 (1.2-7.1)                 | 2.7 (0.5-5.7)                       | <.0001  | 0.307                   |
| Time to castration resistance (CRPC)    | n (%)            | 285 (2%)                      | 960 (7%)                            | <.0001  | 0.281                   |
|   | Median (IQR) yrs | 5.3 (3.5-7)                   | 3.2 (2-5)                           | <.0001  | 0.767                   |
| Time to first mCRPC treatment           | n (%)            | 149 (1%)                      | 626 (5%)                            | <.0001  | 0.241                   |
|   | Median (IQR) yrs | 6 (2.2-7.7)                   | 3.9 (2.5-5.9)                       | <.0001  | 0.717                   |
| Time to prostate cancer event†          | n (%)            | 10,743 (58%)                  | 9,525 (72%)                         | <.0001  | 0.289                   |
|   | Median (IQR) yrs | 0.3 (0.2-1.2)                 | 0.5 (0.3-1.2)                       | <.0001  | 0.258                   |
| Overall mortality (time to death)       | n (%)            | 3,343 (18%)                   | 3,876 (29%)                         | <.0001  | 0.264                   |
|   | Median (IQR) yrs | 5.9 (3.5-8.2)                 | 4.9 (2.7-7.2)                       | <.0001  | 0.258                   |

† PC event including BCR, RT, or bone agents.

## References

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- ATLAS Trial: <https://clinicaltrials.gov/study/NCT02531516>



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## Acknowledgments

This study made use of de-identified data from the ICES Data Repository, which is managed by the Institute for Clinical Evaluative Sciences with support from its funders and partners: Canada's Strategy for Patient-Oriented Research (SPOR), the Ontario SPOR Support Unit, the Canadian Institutes of Health Research and the Government of Ontario. The opinions, results and conclusions reported are those of the authors. No endorsement by ICES or any of its funders or partners is intended or should be inferred.

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Consulting Fees: Jensen Oncology, Nanosites Inc, Precision Point Specialty LLC, SESEN Bio, Honoraria/Travel: AbbVie, Actallos, Astra Zentiva, Bayer, EMD Serono, Haymarket Media, Healing and Cancer Foundation, Knight Therapeutics, Intuitive Surgical, Merck, Science & Medicine Canada, TarSera Canada, Tolmar Pharmaceuticals Canada, Research Funding: Knight Therapeutics, Tolmar Pharmaceuticals, Bayer, Sunnybrook HSC AFP

