Poster Code: SA37

Real-World Treatment Patterns (TxP) and Healthcare Resource Utilization (HRU) in Patients With Metastatic Hormone-Sensitive Prostate Cancer (mHSPC) and Nonmetastatic Castration-Resistant Prostate Cancer (nmCRPC) in China

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Objectives

- To assess the annual percentage of patients with mHSPC and nmCRPC among patients with prostate cancer (PC) in China
- To determine TxP, HRU, and costs among patients with mHSPC and nmCRPC in China

Conclusions

- This is the first comprehensive real-world study in China that provided trends in disease epidemiology, TxP, and HRU and associated costs for patients with mHSPC and nmCRPC, and it may facilitate additional clinical and economic evaluations in this area
- Between 2015 and 2020 in China, the prevalence and incidence of mHSPC decreased, while those of nmCRPC increased, perhaps correlated with when the practice of early PC screening was established
- There was a high prevalence of comorbidities, such as hypertension and type 2 diabetes mellitus (T2DM), especially in patients with mHSPC
- More than half of the patients with mHSPC had bone metastasis
- Androgen-deprivation therapy (ADT) and first-generation anti-androgens were the most frequently prescribed PC-related medications in both patient populations
- The use of novel hormone therapy (NHT) was low given its recent approval by the Chinese National Medical Products Administration and subsequent inclusion in the National Reimbursement Drug List
- HRU was driven by inpatient costs in mHSPC and outpatient costs in nmCRPC

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Disclosures

Funding: This study was funded by Astellas Pharma Inc. and Pfizer Inc., the co-developers of enzalutamide. Medical writing and editorial assistance were provided by Leena Patel (PhD), Chrysi Petraki (PharmD), and Rucha Kurtkoti (MSc) from IQVIA, funded by the study sponsors.

This presentation is intended for a healthcare provider audience.
Presented at the ISPOR 2023, Boston, MA, USA; May 7–10, 2023

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Background

- In China, PC is the sixth most common malignancy and the tenth leading cause of death in men with malignant tumors[1]. PC can manifest as mHSPC or nmCRPC before reaching the terminal stage[2]
- Approval of androgen receptor pathway inhibitors (ARPIs) like abiraterone, apalutamide, darolutamide, and enzalutamide has expanded the array of treatments available for patients with mHSPC and nmCRPC
- Intensification of ADT with ARPIs has been shown to improve overall survival in patients with mHSPC and metastasis-free survival in patients with nmCRPC[3-10]
- With the advent of novel therapeutic agents, there is a need to assess TxP, associated HRU, and costs, to improve disease management among patients with mHSPC and nmCRPC in China

Methods

- **Study design:** A retrospective, observational, descriptive study of patients with mHSPC and nmCRPC in China
- **Data source:** Electronic medical records of patients with PC identified from three tertiary-care (Grade A) hospitals in different geographic regions
- **Study period:** January 2014 to March 2021
- **Study population:** Three PC populations were identified based on:
  - PC: one inpatient record or two outpatient records of PC diagnosis (at least 30 days apart)
  - mHSPC: clinical diagnosis with metastatic disease but without prostate-specific antigen (PSA) progression or clinical diagnosis of CRPC
  - nmCRPC: PSA progression or clinical diagnosis of CRPC before developing metastatic disease
- **Study outcomes**
  - Study outcomes included:
    - annual prevalence and incidence
    - baseline demographic/clinical characteristics
    - TxP
    - HRU
    - costs
  - Definitions:
    - Annual prevalence: the percentage of patients with mHSPC and nmCRPC in each calendar year **(Formula A)**
    - Annual incidence: the percentage of newly diagnosed patients with mHSPC and nmCRPC in each calendar year **(Formula B)**
  - Data were analyzed separately for mHSPC and nmCRP
- **Analyses**
  - Descriptive statistics summarized for annual prevalence and incidence and demographic/clinical characteristics
  - Number and percentage of patients receiving specific regimens for line of treatment
  - HRU included:
    - potentially PC-related HRU rate (per patient per month with 95% confidence interval [CI])
    - cumulative incidence risk (%)
  - Costs included:
    - potentially PC-related HRU costs in USD (mean (standard deviation [SD])) per patient per month)
    - exchange rate: 6.4512 CNY per USD

Results

Patients: *PC*: N=6033; mHSPC: n=1086; nmCRPC: n=679

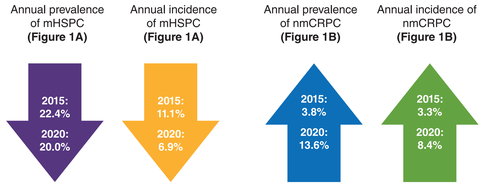
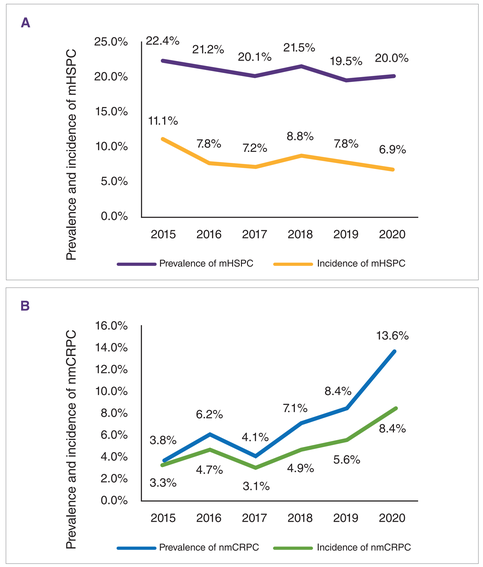


Figure 1: Prevalence and incidence of (A) mHSPC and (B) nmCRPC



Formula A: Annual prevalence of patients with nmCRPC and mHSPC:

$$\frac{\text{Number of eligible patients with nmCRPC (or mHSPC) in each respective calendar year}}{\text{Number of eligible patients with PC in each respective calendar year}} \times 100\%$$

Formula B: Annual incidence of patients with newly diagnosed nmCRPC and mHSPC:

$$\frac{\text{Number of eligible patients with nmCRPC (or mHSPC) diagnosed in each respective calendar year}}{\text{Number of eligible patients with PC in each respective calendar year}} \times 100\%$$

BASELINE CHARACTERISTICS

- Mean age at diagnosis: mHSPC, 71.9 years; nmCRPC, 74.7 years
- The proportion of patients with comorbidities was greater in the mHSPC cohort than the nmCRPC cohort **(Table 1)**
- Location of metastases in mHSPC:
  - bone: 53.8%
  - lung: 3.6%
  - liver: 2.5%
  - elsewhere/unknown: 43.2%

Table 1: Baseline demographic and clinical characteristics

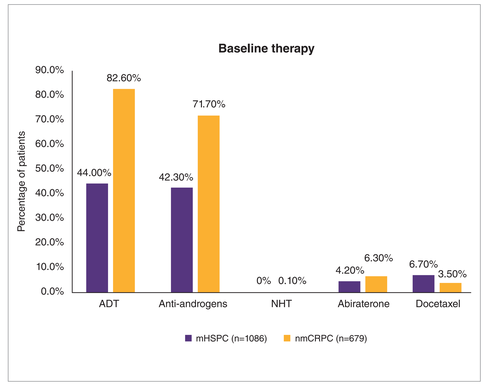
Characteristics	mHSPC (n=1086)	nmCRPC (n=679)
Age at diagnosis, years, mean (SD)	71.9 (9.3)	74.7 (8.5)
Metastasis location (for mHSPC only), n (%)		
Bone	554 (53.8)	NA
Lung	37 (3.6)	NA
Liver	26 (2.5)	NA
Elsewhere	239 (23.2)	NA
Unknown	230 (21.2)	NA
Comorbidities, n (%)		
Enlargement of prostate	476 (43.8)	83 (12.5)
Urinary tract infection	179 (16.5)	50 (7.5)
Impotence	0 (0.0)	0 (0.0)
Hypertension	430 (39.6)	106 (15.9)
Stroke	111 (10.2)	23 (3.5)
Angina pectoris	20 (1.8)	7 (1.1)
Arrhythmia	67 (6.2)	27 (4.1)
Congestive heart failure	55 (5.1)	9 (1.4)
Hyperlipidemia	63 (5.8)	32 (4.8)
Type 2 diabetes	162 (15.0)	38 (5.8)
Acute coronary syndrome/ myocardial infarction	21 (1.9)	5 (0.8)
Liver dysfunction	65 (6.0)	15 (2.3)

SD, standard deviation.

BASELINE THERAPY

- ADT and first-generation antiandrogens were the most frequently prescribed PC-related medications in both patient cohorts **(Figure 2)**

Figure 2: Medication use at baseline



ADT included LHRH agonists (leuprolide/Leuplin/leuprorelin, goserelin/Zoladex, triptorelin, histrelin) and LHRH antagonists (degarelix/Gonax). Anti-androgens included bicalutamide and flutamide. NHT included enzalutamide and apalutamide.

LHRH, luteinizing hormone-releasing hormone; NHT, novel hormone therapy.

POTENTIALLY PC-RELATED HRU

- The potentially PC-related **inpatient and outpatient visit rates** were **lower** among patients with mHSPC than those with nmCRPC, but the **emergency room (ER) visit rates** were **higher** among patients with mHSPC than those with nmCRPC **(Table 2)**
- The potentially PC-related **cumulative incidence risk** for inpatient admissions, ER visits, and surgery at 12 months of diagnosis was **greater** in patients with mHSPC than in those with nmCRPC **(Table 2)**

POTENTIALLY PC-RELATED HRU COSTS

- Among all potentially PC-related HRU costs per person-month, **inpatient admission costs** were the **highest** for patients with mHSPC, whereas outpatient visit costs were the **highest** for patients with nmCRPC **(Table 3)**
- Potentially PC-related **ER visit** and **surgical costs** remained **low** and were similar between the cohorts **(Table 3)**

Table 2: Potentially PC-related HRU

	mHSPC (n=1086)	nmCRPC (n=679)
Average length of follow-up since diagnosis, months		
Mean (SD)	17.57 (17.77)	7.35 (9.96)
Median (IQR)	11.83 (3.75–24.88)	3.68 (1.02–9.64)
Inpatient admission		
Number (%) of patients with events	894 (82.3%)	137 (20.2%)
Rates [counts of admissions/ person-month] (95% CI)	0.52 (0.45–0.58)	0.69 (0.43–1)
Cumulative incidence risk	59.69%	25.55%
Length of stay per inpatient admission in those with ≥1 admission, days		
Mean (SD)	8.53 (6.92)	7.16 (7.40)
Median (IQR)	7.00 (4.00–11.00)	6.00 (2.00–10.00)
Outpatient visit		
Number (%) of patients with events	924 (85.1%)	630 (92.8%)
Rates [counts of visits/person-month] (95% CI)	1.36 (1.17–1.62)	3.96 (3.29–4.72)
Cumulative incidence risk	85.9%	94.4%
ER visit		
Number (%) of patients with events	120 (11.0%)	23 (3.4%)
Rates [counts of visits/person-month] (95% CI)	0.1 (0.04–0.21)	0.05 (0.01–0.11)
Cumulative incidence risk	11.1%	7.29%
Surgery		
Number (%) of patients with events	575 (5.3%)	56 (8.2%)
Rates [counts of surgeries/ person-month] (95% CI)	0.23 (0.19–0.29)	0.21 (0.11–0.35)
Cumulative incidence risk	26.83%	12.93%

IQR, interquartile range.

Table 3: Potentially PC-related HRU costs

	Cost per person-month, in USD (in all patients)			
	mHSPC (n=1086)		nmCRPC (n=679)	
	Mean (SD)	Median (IQR)	Mean (SD)	Median (IQR)
Inpatient admission	1546.09 (3896.48)	402.99 (85.49–1226.24)	1122.24 (5276.17)	0.00 (0.00–0.00)
Outpatient visit	401.28 (939.61)	146.31 (1.06–424.10)	1203.22 (3235.31)	372.64 (139.51–818.48)
ER visit	16.37 (340.46)	0.00 (0.00–0.00)	12.25 (215.03)	0.00 (0.00–0.00)
Surgery	55.05 (283.40)	0.00 (0.00–19.31)	55.56 (603.36)	0.00 (0.00, 0.00)

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