Characteristics of and Treatment Patterns for Non-Metastatic Castration Resistant Prostate Cancer (nmCRPC) Patients in Germany, France, and United Kingdom (UK)

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INTRODUCTION

- In 2019, approximately 77,600 European men will die from prostate cancer (PC), making this the third leading cause of cancer-related deaths across all cancers in the European Union.[1]
- Approximately 20%-30% of men with PC experience a disease recurrence and require systemic therapy with androgen deprivation therapies (ADTs).[2] However, most eventually stop responding to ADTs (i.e., castration-resistant [CR] PC) and experience disease progression.[3-5]
- The treatment goals for non-metastatic (nm) CRPC are to delay time to metastasis while maintaining the quality of a patient's survival.[6]
- The recent approval of second-generation ARis (SGARis; e.g., apalutamide, enzalutamide) is expected to change the treatment landscape for nmCRPC.[7, 8]
- Limited evidence exists regarding the real-world treatment patterns among nmCRPC patients in Europe.

OBJECTIVES

- To describe nmCRPC patients' clinical and demographic characteristics, physician characteristics, and historical treatment patterns, and establish a baseline in the evolving nmCRPC treatment landscape in Germany, France, and the UK.

METHODS

Study Design

- This was a retrospective cross-sectional study.
- The analytic cohort included nmCRPC patients who received any pharmacotherapy.
- nmCRPC patients were identified by approximation, using the following three variables: prostate cancer (response = yes), metastatic status (response = no), hormone refractory treatment (response = yes).

Data Source and Measurement

- We used the IPSOS Global Oncology Monitor Database (GOMD), a large physician-based syndicated patient record database, from September 2015 to September 2017.
- For the purposes of this analysis, data from all three European countries was pooled, where appropriate
- The GOMD is validated with market sizing studies every 2 years to ensure that the size and representativeness of its physician sample reflects the wider population of relevant treating physicians in the respective country.
- The data contains information about whether the patient had the following comorbidities:
  - Hypertension
  - Cardiovascular disease
  - Diabetes
  - Obesity
  - Renal dysfunction
  - Pulmonary disorder
  - Thyroid disorder
  - Dementia
  - Depression
  - Liver dysfunction
  - None
  - Other

Study Population

- Inclusion criteria:
  - nmCRPC patients
  - ≥18 years of age at time of data extraction
  - Received treatment during study period
- Exclusion criteria:
  - Diagnosis of any other type of cancer during the study period

Outcome Measures

- Patient characteristics: age, race, body mass index (BMI), concomitant conditions, stage at diagnosis, Gleason score
- Physician characteristics: specialty, location of practice/hospital type
- Treatment patterns: most common treatments in 1st, 2nd, and 3rd nmCRPC regimens (1R, 2R, 3R), % of patients receiving SGARis. The dataset contains physician-reported information related to each nmCRPC regimen received by the patients

KEY FINDINGS

nmCRPC Patient Characteristics

- 509 (Germany: 225; France: 111; UK: 173) nmCRPC patients were included in the analytic cohort and their demographic and clinical characteristics are presented in **Table 1**.

Table 1. Patient Cohort Characteristics

	All (N = 509)	Germany (N = 225)	France (N = 111)	UK (N = 173)
Age, years				
Mean (SD)	74.60 (7.99)	74.63 (8.49)	74.67 (9.02)	74.52 (6.53)
Median	75	74	74	76
Race, %				
White	86.4	91.6	81.1	83.2
Black	4.1	0.4	6.3	7.5
Asian	2.8	1.3	0.9	5.8
Hispanic/Latino	0.6	0	0.9	1.2
Other	6.1	6.7	10.8	2.3
BMI, kg/m²				
Mean (SD)	26.42 (2.70)	26.53 (2.63)	25.91 (2.54)	26.83 (3.02)
Median	26.1	26.1	25.7	26.8
Concomitant conditions, %				
None	23.2	27.1	27	15.6
Hypertension	44	45.8	41.4	43.4
Cardiovascular disease	25.7	24.9	23.4	28.3
Diabetes	21.6	23.1	19.8	20.8
Obesity	10.2	13.8	7.2	7.5
Renal dysfunction	5.9	5.8	4.5	6.9
Pulmonary disorder	5.3	4	3.6	8.1
Thyroid disorder	3.9	4.9	0.9	4.6
Dementia	2.2	2.7	1.8	1.7
Depression	2.2	0.4	3.6	3.5
Liver dysfunction	2	0.9	0.9	4
Other	8.8	9.3	5.4	10.4
Smoking status, %				
Never	47.9	48	52.3	45.1
Past	25.7	14.2	30.6	37.6
Current	10	7.6	9.9	13.3
Unknown	16.3	30.2	7.2	4
Stage at diagnosis, %				
I	11	22.7	1.8	1.7
II	19.3	28.4	18.9	7.5
III	52.8	38.2	55.9	69.9
IV	15.1	9.3	18.9	20.2
N/A	1.8	1.3	4.5	0.6
Current stage, %				
I	8.8	19.6	0.9	0
II	9	14.7	5.4	4
III	54.4	45.8	46.8	70.5
IV	25	18.7	37.8	24.9
N/A	2.8	1.3	9	0.6
ECOG score, %				
0	24.6	26.7	38.7	12.7
1	37.5	41.3	36	33.5
2	11.6	12.4	15.3	8.1
3+	3.1	1.3	2.7	5.8
Unknown	23.2	18.2	7.2	39.9
Gleason score, %				
2-6	12.2	16.9	13.5	5.2
7	24.2	20	38.7	20.2
8-10	54	47.1	40.5	71.7
Unknown	9.6	16	7.2	2.9

Abbreviations: BMI, Body Mass Index; ECOG, Eastern Cooperative Oncology Group; PSA, Prostate Specific Antigen.

Treating Physician Characteristics

- Most (78.4%) patients were treated by urologists and participated in either university hospital (47.7%) or office settings (23.8%). (**Table 2**).
- Most physicians did not participate in any clinical trials

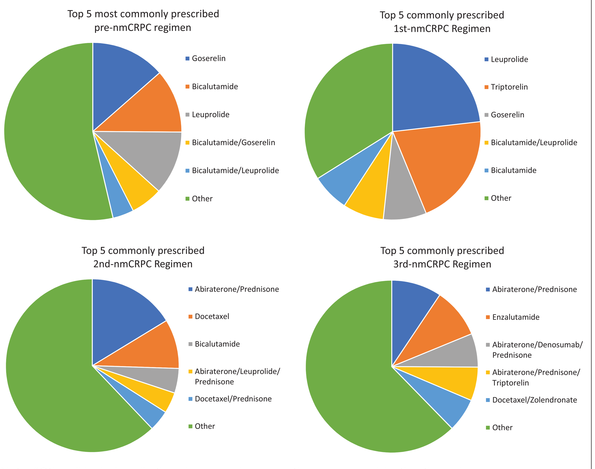
Table 2. Treating Physician Characteristics

	All (N = 509)	Germany (N = 225)	France (N = 111)	UK (N = 173)
Specialty, %				
Urologist	78.4	92.9	56.8	73.4
Medical oncologist	21.4	6.7	43.2	26.6
Others	0.2	0.4	0	0
Practice/hospital type, %				
University hospital	47.7	32	36.9	75.1
Office	23.8	42.2	23.4	0
Private practice	9.4	19.6	3.6	0
Cancer center	7.3	1.3	9.9	13.3
General	6.5	0.9	26.1	1.2
University teach	3.9	3.6	0	6.9
General teach	1.4	0.4	0	3.5
Whether or not the physician participates in clinical trials, %				
Y	7.1	1.8	11.7	11
Number of clinical trials physician participates per year, %				
0	54.8	52.9	45	63.6
1-5	38.5	43.6	47.7	26
6-10	2.4	2.2	2.7	2.3
>10	4.3	1.3	4.5	8.1

Treatment Patterns

- **Figure 1** shows the top regimens prescribed per treatment regimen.
- The most common hormone sensitive treatments which patients received preceding CRPC diagnosis, were goserelin (25.0%) and bicalutamide (21.4%).
- The 2 most commonly prescribed nmCRPC treatments per line were:
  - 1R: Leuprolide (23.2%) and triptorelin (20.6%)
  - 2R: abiraterone/prednisone combination (16.3%) and docetaxel (9.2%)
  - 3R: abiraterone/prednisone (9.4%) and enzalutamide (9.4%)

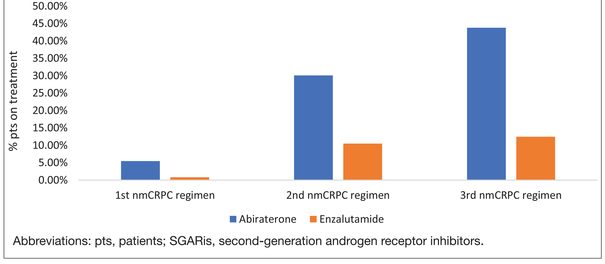
Figure 1. Top 5 Most Commonly Prescribed CRPC Drugs by Number of Regimens



Note: "Others" includes all other drugs used as monotherapy or combination therapies
Abbreviation: nmCRPC, Castration Resistant Prostate Cancer.

- The proportions of patients receiving abiraterone and enzalutamide were relatively low: 17.3% and 4.7% overall; 5.5% and 0.8% in 1R; 30.1% and 10.5% in 2R; and 43.8% and 12.5% in 3R (**Figure 2**).
- The most common reasons for treatment discontinuation were disease progression, treatment resistance, and side effects.

Figure 2. Use of Abiraterone and Enzalutamide by nmCRPC Regimen



Abbreviations: pts, patients; SGARis, second-generation androgen receptor inhibitors.

DISCUSSION/CONCLUSIONS

- This study is the first to describe nmCRPC patients in Europe using a large real-world patient record database.
- Most patients were treated with FGARis or luteinising hormone-releasing hormone agonists as first regimen.
- SGARi use increased with subsequent regimens but overall was relatively limited.
- The 2018 European guidelines for the treatment of nmCRPC have found that while active surveillance remains an option, SGARis such as apalutamide and enzalutamide can be appropriate to treat high-risk nmCRPC patients (i.e., prostate specific antigen-doubling time ≤10 months) (9)
  - Therefore, the results of this analysis may not be reflective of current utilization of SGARis in nmCRPC given that only data up to 2017 was available.
- Enzalutamide obtained European Medicines Agency approval for use in high-risk nmCRPC in 2018 (10) while abiraterone is yet to be approved in this population. Thus, physicians' willingness to prescribe SGARis was most likely not fully reflected in our treatment pattern results, which utilized data up to 2017.
- Despite the more recent approvals of SGARIs in Europe, the results (for Enzalutamide) of this study may be reflective of a reticence to introduce (additional) pharmacotherapy in a disease state largely considered to be asymptomatic.
- Future studies should evaluate utilization patterns after more experience with SGARis.
- Future studies with larger sample sizes should evaluate utilization patterns separately for each of these countries to understand between country variations in practice patterns.

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