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Docetaxel for mCRPC in Clinical Practice: Experience from Treichville University Hospital (Côte d´Ivoire)

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Abstract

Background: Docetaxel combined with prednisone is a standard first-line treatment for metastatic castration-resistant prostate cancer (mCRPC). However, data on its use in real-world African settings remain limited.

Objective: To evaluate the clinical outcomes, safety profile, and impact on quality of life of docetaxel-based chemotherapy in patients with mCRPC treated at Treichville University Hospital.

Methods: We conducted a retrospective cohort study of male patients aged ≥18 years with histologically confirmed mCRPC who received at least one cycle of docetaxel plus prednisone. Clinical, biological, and radiologic responses were assessed, along with quality of life (FACT-G) and adverse events (CTCAE). Overall survival at 6 months was estimated using Kaplan–Meier analysis.

Results: Eighty-two patients were included. The mean age was 63.3 ± 7.8 years. All patients had bone metastases, and 15.8% had visceral involvement. A ≥ 50% PSA reduction was observed in 47.5% of patients and 31.7% reported pain relief. Radiologic response was seen in 9.7% of cases. Quality of life improved in 18.56% of patients. The 6-month overall survival rate was 73.17%. The most common grade 3–4 toxicities were alopecia (78%), fatigue (62.2%), and peripheral neuropathy (40.2%).

Conclusion: Docetaxel-based chemotherapy demonstrates encouraging clinical benefits and acceptable toxicity in patients with mCRPC in a sub-Saharan African setting. These findings support its continued use while underscoring the need for larger prospective studies

Keywords: Docetaxel, Metastatic castration-resistant prostate cancer (mCRPC), Sub-Saharan Africa, Côte d´Ivoire

Introduction

Prostate adenocarcinoma is the most common primary malignant tumor of the prostate gland, accounting for approximately 98% of all prostate cancers [1]. In 60 to 70% of cases, the diagnosis is made at the metastatic stage, where surgical or medical androgen deprivation therapy (ADT) has long been the standard of care. This treatment has led to improvements in patient comfort and quality of life. However, progression to castration-resistant prostate cancer (CRPC) is almost inevitable, with a median time to resistance of 18 to 24 months [2].

In sub-Saharan Africa, this progression tends to occur more rapidly. Nzamba et al. reported a median time to castration resistance of approximately 9 months [3], likely due to biological factors specific to local populations. Over the past decade, the management of metastatic prostate cancer has undergone major transformations. Landmark trials such as CHAARTED and STAMPEDE have demonstrated the survival benefit of early use of docetaxel in combination with ADT in hormone-sensitive metastatic prostate cancer, leading to a paradigm shift in treatment strategies. These studies have underscored the value of intensifying systemic therapy upfront, rather than waiting for resistance to develop [4,5]. Despite the emergence of novel androgen receptor-targeted therapies and other advanced treatments, docetaxel remains a key component of first-line therapy, particularly in low-resource settings. Its relatively low cost, broad availability, and well-established efficacy make it a pragmatic option where access to newer agents is limited. Currently, the management of metastatic castration-resistant prostate cancer (mCRPC) relies on a multidisciplinary and multimodal approach, including first- and second-generation hormonal therapies, targeted therapies, and chemotherapy. Among these options, the combination of docetaxel plus prednisone with first-generation ADT remains the standard first-line regimen. This protocol has demonstrated significant benefits in overall survival and progression-free survival, as evidenced by the TAX327 trial [6]. However, data on the impact of this regimen on quality of life, clinical benefit, and toxicity profile in African contexts, particularly in sub-Saharan Africa, remain scarce. This study aims to report the experience of the oncology department at Treichville University Hospital in the management of patients with mCRPC treated with docetaxel-based chemotherapy.

Methodology

Study design

This was a retrospective cohort study with an analytical and descriptive aim, based on the analysis of secondary data extracted from medical records of patients managed at the oncology department of Treichville University Hospital.

Study population

Inclusion criteria

- Male patients
- Aged over 18 years;
- Diagnosed with metastatic castration-resistant prostate adenocarcinoma (mCRPC);
- Received at least one cycle of docetaxel-based chemotherapy (combined with prednisone);
- Followed in the oncology department during the study period.
- Non-inclusion / Exclusion criteria

- Incomplete or non-exploitable medical records;
- Presence of other histological types of prostate cancer (i.e., non-adenocarcinomas)

Data collection

Patients were identified from both paper-based and electronic databases of the oncology department at Treichville University Hospital. A standardized electronic data collection form was used to extract relevant information from the medical records. The quality of life data were systematically collected from all patients in accordance with the procedures currently in place in the department

Study Variables

The parameters studied included:

- Diagnostic data: age, medical history, performance status consultation, Gleason score, type and location of metastases
- Therapeutic response data (clinical, biological and radiological response to treatment)
- Safety profile (adverse effects)
- Disease progression parameters (time to new event, patient status at last follow-up, date of last follow-up)
- Baseline quality-of-life assessment using the FACT-G question form

Outcome measures

Primary endpoints

- Tumor response: assessed according to RECIST (Response Evaluation Criteria in Solid Tumors) criteria.
- Clinical response: defined as a reduction of at least 2 points on the Visual Analog Scale (VAS) for pain, without any increase or change in the level of analgesic therapy.
- Biological response: defined as a ≥ 50% decrease in PSA levels from baseline.

Secondary endpoints

Overall survival at 6 months following initiation of chemotherapy.

- Quality of life: assessed using the FACT-G (Functional Assessment of Cancer Therapy – General) score.
- Safety profile: evaluated according to the CTCAE (Common Terminology Criteria for Adverse Events) classification.

Statistical analysis

Quantitative variables were expressed as means ± standard deviation or as medians with interquartile ranges, depending on their distribution.

Qualitative variables were presented as frequencies and percentages.

Overall survival was estimated using the Kaplan–Meier method.

A p-value < 0.05 was considered statistically significant.

Ethical Considerations

The study was conducted in accordance with ethical principles and received approval from the ethics committee. Patient data were anonymized to ensure the confidentiality of medical information.

Results

Clinical and Pathological Characteristics

The study included 82 patients. The mean age was 63.3 ± 7.8 years, with a range of 42 to 90 years. A family history of cancer was reported in a subset of patients, with breast cancer (7.3%), ovarian cancer (2.4%), and prostate cancer (13.4%) being the most common.

The majority of patients (61%) had a World Health Organization (WHO) performance status of 1.

A Gleason score ≥8 was observed in 81.7% of cases.

The mean PSA level at diagnosis was 440.39 ng/mL.

All patients had bone metastases, and 15.8% had visceral metastases.

Table 1 summarizes the clinical and pathological characteristics of the study population.

Table 1: General Characteristics of the Study Population

Parameters	n (N = 82)	Percentage (%)
Mean age (years)	63.3 (±7.8)	
Age ≤ 50	2	2.40%
Age > 50	80	97.60%
Family history of cancer		
Breast	6	7.30%
Ovary	2	2.40%
Prostate	11	13.40%
WHO Performance Status		
Score 0	3	3.70%
Score 1	50	61.00%
Score 2	29	35.40%
Gleason score ≥ 8	67	81.70%
Mean PSA level (ng/mL)	440.39	
Bone metastases (any site)		

Spine	82	100%
Pelvis	65	79.20%
Ribs	31	37.80%
Clavicle	22	26.80%
Femur	31	37.80%
Other locations	22	26.80%
Associated visceral metastases		
Lungs	7	83.60%
Lymph node	3	3.60%
Liver	3	3.60%

Therapeutic and Outcome Characteristics

A ≥ 50% decrease in PSA levels was observed in 47.5% of patients, while 31.7% experienced a reduction in pain.

Regarding radiologic response: 65.5% of patients showed disease progression, 9.7% had a partial response, and 24.4% had stable disease.

Among patients with combined bone and visceral metastases, the radiological response rate was 9.7%, while the biological response rate was 100%. Table 2 presents the therapeutic and outcome characteristics in detail.

After six months of treatment, 18.56% of patients showed an improvement in quality of life, particularly in emotional well-being and family-related domains (Table 3).

The overall 6-month survival rate was 73.17% (Figure 1).

The most common adverse effects observed were alopecia (78%), fatigue (62.2%) and peripheral neuropathy (40.2%). (Table 4).

Table 2: Therapeutic Response and Outcomes

Parameters	**n (N=82)**	**Percentage (%)**
Pain reduction	26	31.70%
Biological response (PSA ↓ ≥ 50%)	39	47.50%
Radiologic response		
Partial response	8	9.70%
Stable disease	20	24.40%
Progressive disease	54	65.50%
Patients with bone and visceral metastases response (n = 13)	13	15.80%
Biological response (PSA ↓ ≥ 50%)	1	9.70%
Radiologic response	13	100%

Table 3: Changes in Quality of Life (FACT-G Scores) at Baseline and After 6 Months

Domain	Mean Baseline Score (SD)	Mean score at 6 months (SD)	Percentage (%)
Physical well-being	21.96 (±1.034)	20.59 (±0.797)	0-28
Social / Family well-being	22.18 (±0.734)	21.43 (±0.496)	0-28
Functional well-being	21.61 (±1.388)	20.76 (±1.292)	0-28
Emotional well-being	19.05 (±1.211)	18.04 (±0.733)	0-24

Table 4: Grade 3 and 4 Adverse Events Observed During Treatment

Adverse Events	Number of Patients	Percentage (%)
Anemia	8	9.80%
Physical fatigue	31	62.20%
Alopecia	64	78%
Diarrhea	22	26.80%
Myalgia	16	19.50%
Mucositis	25	30.50%
Vomiting	24	29.30%
Neutropenia	27	32.90%
Febrile neutropenia	6	7.30%
Peripheral neuropathy	33	40.20%

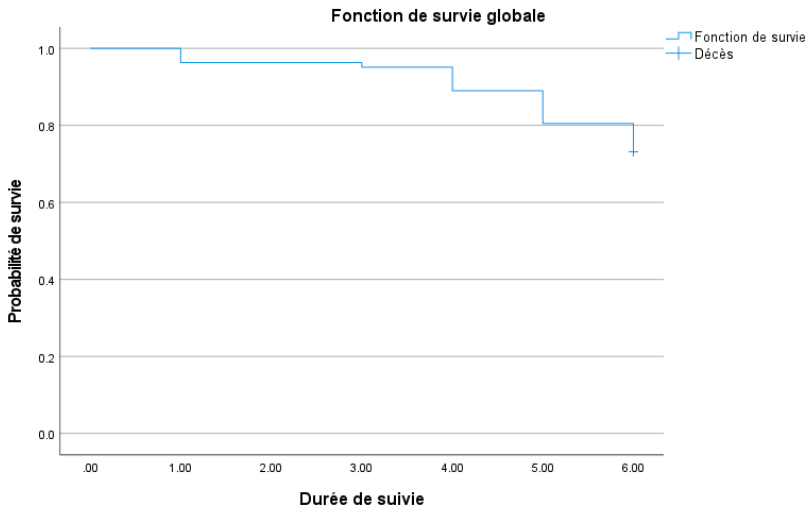

Figure 1: Overall Survival at 6 Months (Kaplan–Meier Curve)

Discussion

Limitations

This study has several key limitations. First, its retrospective design may introduce biases in both data collection and interpretation. Secondly, being monocentric in nature limits the broader applicability of the findings to other settings or populations. Lastly, the relatively short follow-up period constrains the ability to evaluate the long-term impact of treatment, which could influence the interpretation of outcomes related to quality of life and patient survival

General Characteristics of the Study Population

Age is the main risk factor for prostate adenocarcinoma. In Western series, the incidence increases with age, peaking around 70 years [7]. In our study, however, the disease occurred at a relatively younger age, with a mean of 63.3 years. This profile is consistent with several sub-Saharan African series, such as that of Ndiaye et al. in Senegal, who reported a mean age of 68.3 years [8]. Prostate adenocarcinoma is often considered a disease of younger individuals within the Black population. While the exact mechanism remains unclear, ethnic, geographic, dietary, and genetic factors are thought to play a role [9].

Family history also represents an important risk factor, although it was found in only 13.4% of our patients a relatively lower frequency than the 18.2% reported by Hemminki et al. in Sweden [8]. These familial forms are often associated with BRCA mutations [2].

Most patients (61%) had a good general condition, with a WHO performance status of one. This can be explained by the selection criteria for chemotherapy, which typically requires a minimum performance status of two or better.

The Gleason score may have prognostic value in castration-resistant prostate cancer (CRPC) [9]. In our study, 81.7% of patients had a Gleason score ≥8. This is considerably higher than the 31% reported by Ian F. et al. [6], suggesting a more aggressive disease profile in Black patients.

Bone metastases were present in all patients (100%) in our series, consistent with findings from both Western and sub-Saharan African studies.

The combination of docetaxel and prednisone, established by the TAX 327 study in 2004, has since become the standard of care for metastatic castration-resistant prostate adenocarcinoma. This regimen replaced mitoxantrone, which had a higher thrombotic risk [6].

In our study, the docetaxel-prednisone regimen showed clinical efficacy, with 31.7% of patients reporting pain reduction. This is comparable to the 35% reported by Ian et al. [6].

Biological and radiological responses were observed in 47.5% and 9.7% of cases, respectively. These results are relatively close to those of the TAX 327 study, which reported 45% biological and 12% radiological response rates [6].

Safety and Quality of Life

The most common adverse effects observed were alopecia (78%) and physical fatigue (62.2%). These side effects have also been reported in Western series [12]. Furthermore, quality of life, assessed using the FACT-G scale, was improved in 18.56% of our patients.

Survival

In Western populations, overall survival for metastatic CRPC is estimated at around 36 months, with a median survival of 14.3 months [2, 9]. However, 73.17% of patients were alive at 6 months

Conclusion

Docetaxel-based chemotherapy remains an effective and feasible first-line treatment for mCRPC in our setting. Despite modest radiologic response rates, clinical and biological outcomes were encouraging, with acceptable toxicity and a favorable 6-month survival rate. It is therefore necessary to conduct larger, multicenter prospective studies in Africa, including a longer follow-up period.

Ethical Considerations

Authorization was obtained from the relevant health authorities at the data collection center, including the General Director, the Medical and Scientific Directorate, and the Head of Department. Informed consent was obtained from each patient included in the study. Confidentiality and respect for human dignity were strictly observed during data collection and processing.

Conflict of Interest

The authors declare that they have no conflicts of interest.

Ethical Approval

Written informed consent was obtained from all patients included in the study.

Authors' Contributions

ODO BA designed the study. KOUASSI KKY and TOURE YL collected data from patient records and drafted the manuscript. All authors reviewed the final version and approved it for submission.

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