PRIMARY PROSTATE CANCER : CLINICAL PROFILE AND THERAPEUTIC OUTCOMES AT NOUAKCHOTT FRIENDSHIP HOSPITAL

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ABSTRACT

Currently, prostate cancer represents a public health issue, with its frequency varying from one country to another. Objective : Our work aimed to study the epidemiological, clinical, and therapeutic data of prostate cancer at the urology department of Amitié Hospital in Nouakchott, Mauritania.

Material and methods : It was a retrospective and descriptive study focusing on prostate cancer cases recorded from the hospitalization registers of Amitié Hospital in Nouakchott. The study period spanned 5 years (2015 to 2020). The parameters studied included: the patient's age at the time of diagnosis, family history, clinical presentation, pre-therapeutic PSA levels, radiological investigations, histopathological examination results from various types of samples, clinical TNM classification, therapeutic data, and patient outcomes.

Results : The incidence of prostate cancer in the urology department was 20 cases per year. The average age of patients was 71.17 years (ranging from 50 to 90 years). The age group of 70 to 79 years was the most represented, observed in 57% of patients. The most common reason for consultation was lower urinary tract symptoms in 66 patients, accounting for 73%. Rectal examination was suspicious in 66 patients, representing 71% of cases. The average PSA level was 142.5 ng/ml (ranging from 3 to 1800 ng/ml). Ultrasound findings were mostly unremarkable. Twelve patients had a heterogeneous prostate, corresponding to 13%. Adenocarcinoma was the histological type observed in all patients. Among them, 66% were diagnosed from resection chips, 28% from prostate biopsy, and 6% following prostatic adenomectomy.

Regarding prognosis, Gleason scores of 7 or higher accounted for 94% of cases (n = 84). Among the 90 patients, 73 had metastases: 5 lymph node, 13 bone, 34 lymph node and bone, and 1 patient had lymph node, bone, and pulmonary metastases. Various therapeutic procedures performed on our patients included continuous hormone therapy in 27 patients, intermittent hormone therapy in 8, pulpectomy in 43, and radio-hormone therapy in 12. Seventy-two patients, or 80%, survived more than 3 years, while 17 patients, or 19%, died before 2 years. One patient was lost to follow-up.

Conclusion : Prostate cancer is common and has a poor prognosis in our country. Implementing an individual screening policy would represent a definite advantage in improving prognosis.

Keywords *: Cancer, prostate, adenocarcinoma, gleason, Mauritania*

INTRODUCTION

At present, prostate cancer poses a major public health problem [1]. Its once underestimated incidence continues to rise with the popularization of screening methods, particularly prostate-specific antigen (PSA) testing and digital

rectal examination. In 2010, it accounted for 35% of male cancers worldwide, with a standardized incidence estimated at 128.8 cases per 100,000 men [2]. Numerous risk factors are currently implicated in the occurrence of this cancer, including age, racial origin, family history, dietary factors, geographic origin, and genetic factors. Currently, the emergence of cytogenetics and molecular biology has led to significant advances in the study of prostate carcinogenesis [3]. In sub-Saharan Africa, epidemiological, clinical, and pathological data are scarce. This study aims to describe the epidemiological, clinical, and pathological aspects of this malignant tumor in Mauritania in order to develop an appropriate management strategy.

MATERIALS AND METHODS

This is a retrospective and descriptive study focusing on histologically confirmed prostate cancers, identified from hospitalization records and operating room registers at Nouakchott Friendship Hospital. The study period spanned from January 1, 2015, to December 31, 2020.

RESULTS

- Epidemiology
Frequency
During the study period, we analyzed 90 patient records out of the 122 followed for prostate cancer. The incidence in the urology department is 20 cases per year.

Age
The average age of patients at the time of diagnosis was 71.17 years, with a range from 50 to 90 years. The peak frequency was observed between 70 and 79 years (57%).

Personal History
We observed 2 brothers in our series with prostate cancer. The majority of cases did not have a family history of prostate cancer, with 11 patients having undetermined family histories.

- Clinical Presentation
The majority of patients had lower urinary tract symptoms (73%, n=66).
Digital rectal examination was suspicious in 66 patients, representing 71% of cases.

- PSA Levels
The median PSA value was 142.5 ng/ml with a range from 3 ng/ml to 1800 ng/ml. Almost all patients (94%) had a PSA level > 20 ng/ml.

- Imaging
Ultrasound was most often unremarkable. Twelve patients had a heterogeneous prostate, accounting for 13%.

- Pathological Anatomy
Types of Samples
Among the 90 cases, 66% were diagnosed from resection chips, 28% from prostate biopsy, and 6% following prostate adenomectomy.

Histological Aspects
Adenocarcinoma was the histological type observed in all patients.

Prognosis
Gleason scores of 7 or higher accounted for 94% of cases (n = 84). Among the 90 patients, 73 had metastases: 5 lymph node, 13 bone, 34 lymph node and bone, and 1 patient had lymph node, bone, and pulmonary metastases.

- Treatment
The different therapeutic interventions performed in our patients are as follows: continuous hormone therapy in 27 patients, intermittent hormone therapy in 8, pulpectomy in 43, and radio-hormone therapy in 12.

Outcome
Seventy-two patients, or 80%, survived more than 3 years, while 17 patients, or 19%, died before 2 years. One patient was lost to follow-up.

DISCUSSION

From an epidemiological perspective, prostate cancer is increasingly common in our country. According to a study conducted at the National Hospital of Nouakchott (CHN) from 2000 to 2009 and published in 2013 in The Pan

African Medical Journal, prostate cancer was the second most frequent cancer in men, with a total of 218 cases out of 1388 cases, representing 15% of all male cancers [10].

Another study conducted at Cheikh Zayed Hospital in Nouakchott by L. NANA from 2014 to 2016 noted a frequency of 53 cases per year [11].

This incidence rate is higher than that of our study, which revealed an incidence of 20 cases per year. However, our sample seems to highlight a real public health problem. Many factors are involved in the onset of prostate cancer. Factors related to age, race, genetics, ethnicity, geography, and dietary factors all play a role [13].

In sub-Saharan Africa, variations are observed between 67 and 71 years, as in our series [13, 1,12,4,16]. In North Africa, they range from 71 to 72 years [2, 4]. In the Western world, the average age is around 71 years, as in the vast majority of developed countries [8]. Generally, prostate cancer is a disease of the elderly. However, individuals under 50 years old are rarely observed in Western literature [4].

The average age of onset of prostate cancer in our study is 71.17 years, with a range from 50 to 90 years. Regarding the racial factor, it is well established that melanin in black individuals is responsible for reducing the formation of provitamin D and the synthesis of serum vitamin D [14]. It would play a predominant role in the development of prostate cancer in black individuals [14]. In sub-Saharan countries, the low rates of prostate cancers would be explained by a population that is predominantly very young [17].

In the United States, the incidence of prostate cancers in the black population is higher than that of white populations due to a combination of predisposing factors such as race, geographical origin, and high-calorie diets [7].

The clinical symptoms of prostate cancer vary widely. Patients are often referred in the context of severe lower urinary tract symptoms or complications such as acute urinary retention or metastatic disease [7, 1, 12] .

In our study, the majority of patients had lower urinary tract symptoms. Locally advanced or metastatic stages are common in developing countries due to delayed diagnosis, lack of adequate hospital infrastructure, and especially the absence of effective health policies [7].

In our study, 73 patients had bone metastases. Biology plays an essential role in the management of prostate cancer. In our study, PSA levels are relatively high, averaging 142.5 ng/ml. This situation could be explained by a frequently late diagnosis of prostate cancer in our country. Histopathological examination remains the only means of diagnosing prostate cancer. In our collection, adenocarcinomas represent the majority of histological types, as in the literature [1,12,6].

On the prognostic level, epithelial malignant tumors are evaluated using the Gleason score, which remains an undeniable communication tool between pathologists and urologists. This score is based on architectural features and allows for the estimation of tumor aggressiveness and progression. Therapeutic management is codified by the D'Amico classification, which associates free PSA levels, pTNM staging, and Gleason score [3].

In our study, the Gleason score was applied to all histology reports, and adenocarcinoma was the histological type observed in all patients. Finally, treatment was based on the D'Amico classification.

In terms of therapy, the majority of our patients received hormonal treatment. This indicates the advanced stage of these tumors. Patients with locally advanced cancer underwent hormone radiotherapy according to recommendations [15].

Our one-year survival rate of 80% is comparable to that reported in the study by Eisenberger et al., which reported an 86% one-year survival rate [5].

CONCLUSION

Prostate cancer is increasingly common in Mauritania in recent years. Primarily affecting older individuals, it constitutes a public health problem in an increasingly westernized population. The presence of numerous metastatic forms is linked to delayed consultation by our patients, which also explains the high death rate from prostate cancer in our series. The development of an early detection strategy, through the promotion of individual screening among individuals aged 50 and over, would be a significant asset for improving the prognosis of prostate cancer in Mauritania.

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