

Adult Kidney Cancer in Mauritania: Clinical and Therapeutic Aspects

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Abstract

Introduction: since its creation, our urology department has taken care of tumor pathologies in particular kidney cancer in adults; our goal is to study the clinical and therapeutic epidemiological profiles of adult kidney cancer in Mauritania. **Materials and Methods:** We carried out a retrospective study over a period of six years, from January 1, 2012 to December 31, 2017, including all cases of adult kidney cancer registered in the urology-andrology departments of the Cheikh Zayed Hospital and Pathological Anatomy of the National Hospital of Nouakchott (Mauritania). **Results:** we collected 50 cases of kidney cancer. The average annual incidence was 8.3 cases. The average age of the patients was 52.98 years with extremes of 18 and 84 years. There was a female predominance (52%) or 29 women for 21 men. Lumbar pain was the most frequent clinical expression, more than half of the patients had symptoms over a period of at least 12 months before the first consultation. The left kidney was the most frequently affected. The right localization was demonstrated in 23 patients, the extension assessment was made with thoraco-abdomino-pelvic CT in 40 patients. Twelve patients had a tumor localized in the kidney. The extension assessment had made it possible to objectify the existence of metastases in 17 of our patients (37%). The preferred locations of these metastases were pulmonary and hepatic. Surgical intervention was performed in 44 patients (88%), of whom 36 underwent radical nephrectomy (72%), and two patients underwent partial nephrectomy (4.5%). Surgical abstinence was decided from the outset in 6 patients (13.6%). None of our patients had received treatment with anti-angiogenics. The histological type most observed in our patients was renal cell carcinoma, observed in 34 patients, or 77.72%. At the time of the study, more than a third of the patients had died. The mortality rate in our series had reached 24%. A specific survival rate could not be assessed due to lack of information in the files and signifi-

cant numbers of patients lost to follow-up at the time of the study. **Conclusion:** adult kidney cancer in Mauritania is characterized by its low incidence, its occurrence in a relatively young population, its female predominance, its often late diagnosis at locally advanced and metastatic stages, and the treatment is the most often surgical.

Keywords

Adult Kidney Cancer, Mauritania, Clinical and Therapeutic Epidemiological Profiles

1. Introduction

Kidney cancer is a primary malignant tumor developed at the expense of the renal parenchyma. It represents 3% of all malignant tumors in adults and ranks 3rd among urological cancers after prostate and bladder cancer [1]. The sex ratio is approximately two men to a woman. The median age at diagnosis is 67 years in men and 70 years in women [2] [3].

Kidney cancer in adults has a variable incidence depending on the geographical region. In Mauritania, it is found in 16th place for all types of cancer combined according to data from the register of the anatomopathology department of the National Hospital of Nouakchott [4]. A progressive increase in the incidence of kidney cancer has been observed in industrialized countries, due to the improvement of diagnostic techniques, but probably also due to changes in lifestyle [5], the diagnosis is evoked in the face of clinical and radiological arguments but only the anatomopathological examination can confirm the diagnosis with certainty. Knowledge of the histological type makes it possible to make the histo-prognostic classification of patients and consequently to promote better management and follow-up of patients. Therapeutically, radical nephrectomy remains the reference treatment for adult kidney cancer at the localized stage, hence the importance of early diagnosis. As for the advanced forms, they are increasingly treated with anti-angiogenics. The aim of this study was to study the current epidemiological and clinical profiles of kidney cancer in Mauritania.

2. Patients and Methods

We carried out a descriptive and analytical retrospective study in the urology department of the Cheikh Zayed hospital in Nouakchott over a six-year period from January 2012 to December 2017. This study collected all cases of kidney cancer from the adult (from 18 years old). The different parameters studied were: epidemiological aspects (age, sex, risk factors), clinical aspects, circumstances of discoveries the general signs, the physical signs, the general state of the patients were evaluated according to the WHO classification, the consultation time, the biological assessments, the results of the medical imaging (ultrasound, CT scan) The anatomopathology results of the operating room, location of the

tumour, Fuhrman grade and pTNM classification, the analysis of the collected data was carried out by the Epi info 6 software.

3. Results

During the duration of the study, we collected 50 cases of kidney cancer. So the average annual incidence was 8 cases. Peaks were noted in 2012 and 2013 with 23 new cases diagnosed, *i.e.* 46% of the patients in the series. Outside this period, the number of new cases was on average 6. The average age of patients was 52.98 years with extremes of 18 and 84 years. The most affected age groups were between 50 and 59 (**Figure 1**). There was a female predominance (52%) or 29 women for 21 men with a sex ratio of 1.5. Eighteen (36%) patients had at least one risk factor for kidney cancer. These were high blood pressure (61.11%), smoking (33.3%) and obesity (33.3%). Lumbar pain was the most common clinical expression in fact low back pain was noted in 46 of our patients in 92% of cases. Haematuria was demonstrated in 29 patients (58%). Furthermore, only one patient (2%) had had an incidental discovery. The average duration of evolution was 15 months (**Figure 2**). More than half of the patients had symptoms over a period of at least 12 months before the first consultation. Ultrasound was performed in 44 patients and revealed the renal tumor in 38 of the cases, or 86%. Computed tomography performed in all patients confirmed the diagnosis in all cases. MRI and UIV imaging examinations were not performed in any of our patients. The complete blood count carried out in all our patients objectified: anemia in 21 patients, or 42%. Evaluation of renal function by measuring blood urea and serum creatinine revealed renal failure in 5 patients. The left kidney was the most frequently affected with 27 patients or 54% of our patients. The right location was objectified in 23 patients, 46% of the series. The extremes were 2.8 cm and 24.6 cm. In the majority of cases the long axis of the tumor exceeded 7 cm, 04 patients had a tumor with a long axis not exceeding 4 cm. The extension assessment was made with thoraco-abdomino-pelvic CT in 40 patients. No patient had a bone scan or an MRI of the axial skeleton. The TNM classification of the tumor was specified in 40 patients. Twelve patients had a tumor localized in the kidney (**Table 1**). The extension assessment had made it possible to objectify the existence of metastases in 17 of our patients (37%). The preferred locations of these metastases were pulmonary and hepatic. Surgical intervention was performed in 44 patients (88%), of whom 36 had radical nephrectomy (72%), two patients had partial nephrectomy (4.5%). Surgical abstention was decided from the outset in 6 patients (13.6%). None of our patients had received treatment with anti-angiogenics. Histological examination was performed in 44 patients (86%). The histological study was performed on the nephrectomy specimen in all patients. The anatomopathological study objectified a predominance of clear cell adenocarcinoma of the kidney found in 34 patients 77.72%. Tubulo-papillary carcinoma is a histological variant present in 9 patients 20.45%, one case of chromophobe renal cells 2.2%.

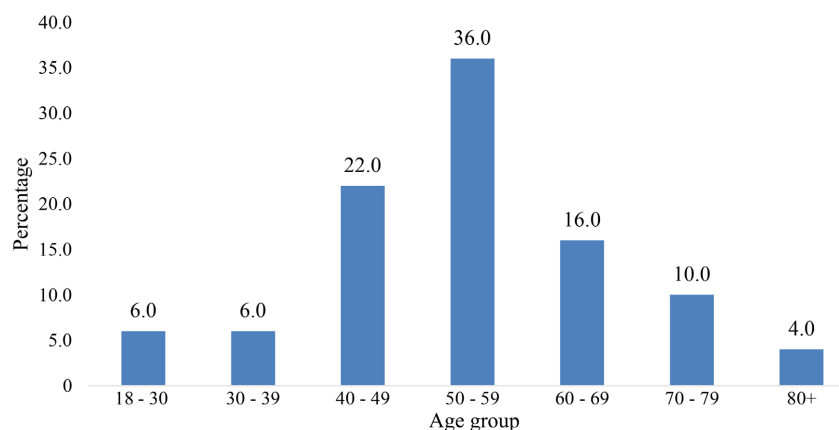


Figure 1. Distribution of patients by age group.

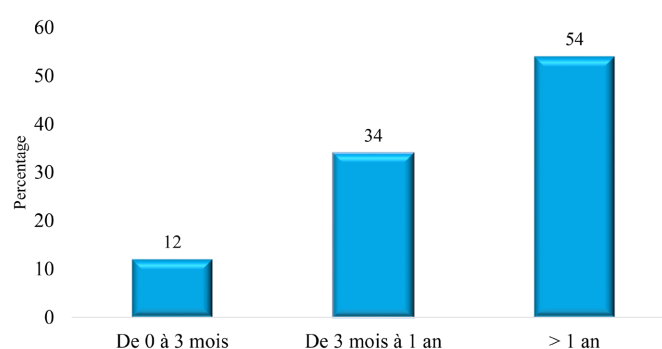


Figure 2. Distribution of patients according to duration of symptom evolution.

Table 1. Distribution of patients according to the evolutionary stage.

Evolutionary stage	Number	Percent
Localized cancer	12	30%
Locally advanced cancer	20	50%
Metastasized cancer	8	20%

4. Discussion

Renal cell carcinoma (RCC) represents 2% to 3% of all cancers [6], the highest incidence has been observed in Western countries especially in recent decades. The number of cases recorded in our series during the periods 2012-2017 is 55 cases but only 50 files were retained, several files were unusable. This incidence is comparable to that reported in Senegal by Fall *et al.* [7] who had found 8.5 But much lower than that reported in Algeria by Harira *et al.* [3] or 14.3. The increase in frequency and incidence could be explained with the development of medical imaging methods which made the diagnosis of kidney cancer easier. In our series, the average age of patients was 52.98 years with extremes of 18 and 84 years. The most affected age groups were: those between 50 and 59 years (36%). The average age of our patients shows that patients with kidney cancer and treated in our service constitute a relatively young population, this average age is

close to that reported in Benin by Ouattara *et al.* [8], which was 53.21 ± 15.55 years. The difference in mean age between the patients in the series reported in Africa and the patients in the Western series should prompt investigation of environmental risk factors. The breakdown by gender shows a female predominance with a sex ratio of 1.5. This predominance may be due to the widespread obesity among Mauritanian women. The same trend was reported in Senegal for the period 2000-2009 by Fall *et al.* [7] and in Morocco Benjelloun [9] the trend was rather male with a sex ratio of 3.7. This male predominance is reported by several American and European studies [10]. Lumbar pain was the most frequent clinical expression. In kidney cancer, the existence of pain reflects an already advanced disease. Moreover, only one patient (2%) had had an incidental discovery of cancer in our series. Contrary, the series reported in Western countries show that kidney cancer is often discovered by chance thanks to the contribution of medical imaging which allows the detection of small tumors. The average duration of symptom evolution in our patients was 15.4 months. This long period of consultation could be explained by the fact that on the one hand the clinical manifestations of kidney cancer are often late but on the other hand, because of the low level of education and the lack of awareness. In addition, other factors are also involved, in particular poverty, the lack of specialized health structures and their remoteness when they exist, the absence of social cover, the consideration given to traditional medicine in our regions, which is sometimes the cause of delay in consultation in a health structure. In Western countries, discovery occurs earlier and earlier due to the development of imaging methods. More than half of our patients (24/41) had cancers whose long axis exceeded 7 cm. This observation is consistent with the long delay in consultation. The long axis of the tumor is also one of the parameters to be taken into account in the surgical indications. The extension assessment was done with thoraco-abdominopelvic CT, in the majority of patients (40/50). It is known that CT is the reference examination in the absence of contraindications to iodinated contrast products. Moreover, 90% of pulmonary or hepatic metastases are asymptomatic, hence the need to carry out this extension assessment. In our study, MRI was not carried out in any of our patients. This examination should be carried out in principle in patients with renal insufficiency (MDRD clearance < 60 ml/min), or presenting a proven contraindication to iodinated contrast products. MRI also appears particularly useful in the exploration of cystic tumors and small tumors poorly characterized by other imaging examinations [8]. The TNM classification of the tumor was specified in 40 patients. 12 patients had a localized tumor in the kidney 30%. The tumor was locally advanced or metastasized in most cases. This high percentage was found in Harira *et al.* [9]. In Algeria but contrasting with that observed in Western countries where nearly 60% of cases are now discovered fortuitously at an early stage. Hepatic metastases were present in 6% of patients while secondary pulmonary localizations were present in 8 patients (30%) and 6 patients had metastases involving at least two sites. The two predictive prognostic systems of the response to immunotherapy which have been

widely used are the model of the French Group of Immunotherapy and the model of Motzer [11], recently that of MSKCC. That of MSKCC could not be applied in our retrospective series because of the risk of missing data. Surgical intervention was performed in 44 patients (88%), among them two patients had a partial nephrectomy (4.5%). None of our patients had received treatment with anti-angiogenics. These results are consistent with those of the previous decade in Dakar Fall *et al.* [7]. Since the work of Robson in 1969 [12], radical nephrectomy has been the reference treatment. In metastasized cancers, it is said to be cyto-reductive. Retrospective studies have also shown an improvement in survival when nephrectomy was performed in patients but The data from the CARMENA study demonstrate in patients with metastatic kidney cancer that the antitumor efficacy of targeted therapy with sunitinib alone is not inferior to that of a treatment combining surgery and sunitinib [13]. All our interventions were performed in conventional surgery; the Laparoscopy and robot are not available in our practice. In our study, surgical abstention was decided from the outset in 06 patients (13.6%) who had metastasized tumors with deterioration in general condition. Anti-angiogenic treatment is still not available in Mauritania; no patient has been able to obtain it. The cost of these anti-angiogenics is the real obstacle to their use in our poor countries. In our series, a specific survival rate could not be assessed due to lack of information in the records and significant numbers of patients lost to follow-up at the time of the study.

5. Conclusion

Adult kidney cancer in Mauritania is characterized by its low incidence, its occurrence in a relatively young population, its female predominance, its often late diagnosis at locally advanced and metastatic stages, and the treatment is the most often surgical.

Conflicts of Interest

The authors declare no conflicts of interest regarding the publication of this paper.

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