

# Pattern and Presentation of Renal Cell Carcinoma Ingezira Hospital for Renal Diseases and Surgery

Salih Yahia Mohammed<sup>1</sup> and Salih Yahia Mohammed<sup>2</sup>

<sup>1</sup> Sudanese Medical Specialization Board

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## Abstract

Background: Renal cell carcinoma (RCC) is most common primary tumour of kidney in adult, responsible for (80-85

## *Index terms—*

## 1 Introduction

Renal cell carcinomas (RCCs) are the commonest primary renal tumour in adult responsible for 80 -85 % of tumours, followed by transitional cell carcinoma (TCC). This tumour is relatively rare in paediatric where it replaced by Wilmstumour. (1) Globally, the incidence of RCC varies widely from region to region with the highest rates observed in the Czech Republic and North America (1) The incidence of RCC has been increased over last decades, and the size of mass decreased at diagnosis and so the stage, with proportional increases in 5years survival rate. This may be attributed to wide use of new imaging techniques and incidental diagnosis which approached more than (50%) along with early surgical intervention.

There are number of environmental and clinical factors have been implicated in the aetiology of RCC. (2,3) These including hypertension, acquired cystic disease of the kidney (typically associated with dialysis), obesity, hepatitis C, smoking, occupational exposure to toxic compounds such as cadmium and asbestos, analgesic abuse nephropathy. Genetic abnormalities as Von Hippel-Lindaugene, which found in 50-60% of cases, deletion of chromosome 3p and mutations in the p53 gene had been implicated. (2,4,5,6,7) Previously, RCCs were classified by cell type and growth pattern (8) This classification has recently changed to more accurately reflect the morphology, growth pattern, cell of origin, histochemical, and molecular basis of the different types of adenocarcinomas. (9,10) .Several distinct subtypes of RCC have been identified, including: Clear cell (75 to 85 %), which typically have a deletion of chromosome 3p, arise from the proximal tubule. (11) In addition to occurring in sporadic disease, clear cell carcinomas are specifically associated with von Hippel-Lindau disease. Papillary (chromophilic) (10 to 15% ) are frequently multifocal and bilateral, and commonly present as small, early stage tumours, Chromophobe (5 to 10%), Oncocytic (uncommon), Collecting duct (Bellini's duct) very rare, and less than 5 % of RCCs are considered unclassified, these tumours had a worse prognosis compared with clear cell cancers (12,13) Symptoms associated with RCC can be due to local tumour growth, haemorrhage, paraneoplastic syndromes, or metastatic disease. (14) With the more pervasive use of non-invasive imaging for the evaluation of nonspecific symptom, more than 50% of RCCs are now detected incidentally. (15)(16) The classic trait of flank pain, haematuria and abdominal mass presented in about 10 -15 % of patient and indicate an advance disease (too late trait). Before the advent of ultrasonography and CT, most patients with RCC presented with one or more of these signs or symptoms, and many were incurable. Other indicators of advanced disease include constitutional symptoms, such as weight loss, fever, and night sweats, and physical Examination findings such as palpable cervical lymphadenopathy, non reducing varicocele, or bilateral lower extremity oedema due to venous involvement. A minority of patients present with symptoms directly rela- ted to metastatic disease. Paraneoplastic syndromes are found in 20% of patients, like hyper-tension, nonmetastatic hepatic dysfunction, hyper-calcaemia, Cushing syndrome, polycythaemia, hypoglycaemia, and other hormones related disorders.

## 2 II.

### 3 Patients and Methods

This is a retrospective and prospective, descriptive, cross sectional and based study. was conducted in Gezira Hospital for Renal Diseases and Surgery in Wad Madani the second city in Sudan, which is a governmental class (A) hospital. It is tertiary hospital provide service to population of Gezira and neighbouring states. The hospital offers 24 hours emergency, laboratory, blood bank and pharmacy services. All patients with renal cell carcinoma diagnosed and managed in the hospital during the period from January. 2006-January 2012, and agreed to participate were enrolled in the study.

The sample size was 60 patients; data collected by detailed and structured questionnaire is to be filled directly by the patients. Most patients assessed by author. Data analyzed by computer using statistical package for social science (SPSS) software (v:17).

## 4 III.

### 5 Results

Data analysis of sixty patient was done, male were 36(60%) and female were 24 (40%), male to female ratio was 3:2, majority of patients were aged above 50year (81%), and 61% of them reside central area (Gezira and Khartoum states).

About 75 % of patients have duration of more than one month when presented first time. Asymptomatic patient are few (6 patients) ( 10%) , but more than half of patient have lion mass when presented first time 34 (57 %), the classical triad of (Hematuria, lion pain loin mass ) occurred in about 31.6 % details shown in (table 1). More than half of the patients (57%) their physical examination revealed palpable lion mass. Few patients had palpable cervical lymph node (6.7%) non reducible varicocele (5%) or lower limb oedema (3.3%).

All patients had abdominal ultrasound as initial imaging of the mass followed by enhance CT scan; only four patients underwent MRI to assess the vascular system and bones. Chest X ray was the tool for lung and chest wall metastases, was done in all patients.

Two third of the patients 40(66.7%) had clear cell type representing the most common type.

About 15 % is papillary type, fewer are chromophobe (10%) and collecting duct (5%), two cases were unclassified.

Early disease stages were constituted about 40% (stage I ten and II fourteen), the rest 60% were advanced stages (III twenty and IV sixteen). IV.

## 6 Discussion

This study is prospective, descriptive, cross sectional and hospital based study. The data analysis was done, and due to lack of local studies in pattern and presentation of RCC in Sudan we had being obligated to compare the results with available regional and international studies. The analysis of patient's demographic feature showed that; the distribution between sexes is keeping with international one, 2:3 for female: male respectively. Some regional study in Nigeria showed female predominance with male to female ratio of 1:1.7. (17) Most of the cases in this review were above age 50years, and the peak incidence between the fifth and sixth decades of life (46.7%), which is one decade earlier than western world population where RCC is primary a disease of elderly with typical presentation in sixth and seventh decades. (15,16) The similar to our finding was reported in Nepal. (18) Mean age at time of diagnosis was (58.3 years) which near to what was found in Nepal, which was (55year), and this was similar to the findings of Choi et al and Pradhan et al.

In contrast mean age at Lagos and Obafemi hospitals was 41.8 years and 47.5 years respectively. The majority of RCC does not become symptomatic until advanced disease develops, due to the retroperitoneal location of the kidney. Local symptoms arise only after tumor achieved adequate size to displace or invade other organs (19) .

In this study common presenting symptoms were hematuria (66.7%) loin pain (48.3%) and loin mass (57.3%). Occurrence of the first two is more common in female and quite similar to the international one (19) , but presence of loin mass is more in male and it is higher than international figures, this indicates that male patients do not seek medical advice until the mass dragged their attention. The rate of current symptoms is reversed when compared with Lagos study; hematuria (40.6%), loin pain (86%) and palpable loin mass (90.6%). The classical triad appeared in one fourth of the patients 31.6 %, it's higher than international reports 7-10%, but similar to what reported in Nigeria (29-36%).

In this review some patients presented with constitutional symptoms such as; pyrexia, weight loss and anaemia, their rates matching international. (15,17,20) Constitutional symptoms have a great correlation with disease duration and stage. para-neoplastic syndrome was observed in (33.3%) , and this result is comparable with international studies (20-40%). Distal metastases symptoms were found at time of diagnosis, surprisingly two third of them were male.

Concerning physical examination of the patients studied in this review more than half of them (57%) presented with palpable loin mass, this is occur in one third of patients in western world (20) , this due to late presentation in our community . Other signs appeared Low frequency such as palpable cervical lymphadenopathy (6.7%), limb oedema and varicocele; all are keeping with international and regional reports (15,17) All patients in this

study had abdominal ultrasound as initial imaging, which found to be very useful in diagnosing renal mass. CT scan done in all case also, it is the method of choice in staging of tumour and more sensitive than sonography. It looks clear that when patient directed into right referral tract the diagnosis will be obvious. MRI as additional imaging to CT has been done in four cases, it more sensitive in assessing the vessels and bone lesions but had no other benefits over CT scan.

Regarding the histopathological patterns all these percentages are similar to the international ones. (10,18,19) but in Nigeria incidence of clear cell type was low as 33.3% (20). The stage of disease in this study keeping with regional series where African people presented and diagnosed late, 60% had locally advanced or metastatic disease. (17,18) In contrast to international studies where the rule is early stages and increasing incidence of patients are incidentally diagnosed. (15,16,19) V.

## 7 Conclusion

RCC occurred one decade earlier than western population. Highest incidence in the fifth and sixth decades. Large number of patients presented with classical triad, most of them were male. Incidentally diagnosed were fewer patients, two third of them were female. The commonest pathological type was clear cell. <sup>1</sup>



Figure 1: I

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Clinical Presentation	NO	%
Durationweeks		10
Months Years	45	75
	9	15
Presentation asymptomatic	6	10
Haematuria	40	66.6
Loin pain	39	65
Loin mass Classical triad	34 9	57 15
Conistitutionalpyrexia	18	30
Weight loss	27	45
Anaemia	16	26.7
ParaneoplasticAbnormalLFT	Hyper Calcaemia	17 1 28.3 1.6
Metastatic symptoms Lungs	3	5
Bones	2	3.3
Liver	4	6.7

Figure 2: Table 1 :

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	Examination	NO	%
Palpable lion mass			7
Palpable cervical lymph node			6.7
Bilateral Lower limb edema			3.3
Non reducible varicocele			5
	Table 3 :		
	Histopatho-logical Types		
	Type	NO	%
Clear cell		40	66.7
Papillary ( chromophilic )		9	15
Chromophopes		6	10
Collecting duct		3	5
Unclassified		2	3.3
	Table 4 : Staging		
	Stage	NO	%
Stage	i	10	16.7
Stage	ii	14	23.3
Stage	iii	20	33.3
Stage	iv	16	28.7

Figure 3: Table 2 :

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