GUIDELINES ON RENAL CELL CANCER

G. Mickisch (chairman), J. Carballido, S. Hellsten,
H. Schulze, H. Mensink

Eur Urol 2001;40(3):252-255

Introduction

Renal Cell Cancer is characterised by a constant rise in incidence over the last 50 years, with a predominance of men over women and an incidence peak in the 6th and 7th decade. There are no generally accepted risk factors for RCC although there are some epidemiologic data indicating that a smoking habit, obesity or exposure to certain heavy metals such as cadmium may favour the development of RCCs.

Diagnosis

Clinical signs and symptoms of RCC:

- haematuria
- persistent lower back pain
- a mass in the abdomen
- fatigue
- weight loss
- fever not obviously associated with infection
- and swelling of the legs

Generally the diagnosis is made through an abdominal ultrasound performed for various reasons.

Standard radiological procedure

- abdominal CT-scan with and without contrast medium (It serves to document the diagnosis of RCC and provides information on the function and morphology of the contralateral kidney

Additional diagnostic procedures:

- magnetic resonance imaging (MRI)
- angiography or fine needle biopsy, have a very limited role, but may be considered in selected cases.

In case of haematuria, additional tumours of the genitourinary tract should be excluded. The most commonly assessed laboratory parameters are:

- Haemoglobin and erythrocyte sedimentation rate: prognosis
- Creatinine: overall kidney function
- Alkaline phosphatase: liver metastasis, bone metastasis. Serum calcium is frequently included in the preoperative assessment because of its association with paraneoplastic manifestation, which may have clinical implications.

Classification:

The TNM (UICC, 2002) classification is recommended

T	Primary tumour
	TX Primary tumour cannot be assessed
	T0 No evidence of primary tumour
	T1 Tumour 7 cm or less in greatest dimension, limited to the kidney
	T1a Tumour 4 cm or less
	T1b Tumour more than 4 cm but not more than 7 cm
T2	Tumour more than 7 cm in greatest dimension, limited to the kidney
T3	Tumour extends into major veins or directly invades

		adrenal gland or perinephric tissues but not beyond Gerota fascia
	T3a	Tumour directly invades adrenal gland or perinephric tissues[1] but not beyond Gerota fascia
	T3b	Tumour grossly extends into renal vein(s)[2] or vena cava or its wall below diaphragm
	T3c	Tumour grossly extends into vena cava or its wall above diaphragm
T4		Tumour directly invades beyond Gerota fascia
N		Regional lymph nodes
NX		Regional lymph nodes cannot be assessed
N0		No regional lymph node metastasis
N1		Metastasis in a single regional lymph node
N2		Metastasis in more than one regional lymph node
M		Distant metastasis
MX		Distant metastasis cannot be assessed
M0		No distant metastasis
M1		Distant metastasis

[1] Includes renal sinus (peripelvic) fat
[2] Includes segmental (muscle-containing) branches

Robson's classification (1969) is commonly used and the relationship with TNM 2002 is as follows:

- Robson's Stage I = T1-2
- Robson's Stage II = T3a
- Robson's Stage IIIa = T3b-c
- Robson's Stage IVa = T4
- Robson's Stage IIIb = N1-2
- Robson's stage IVb = M1

Traditionally RCC have been classified according to the nuclear or cellular morphology. New morphologic, cytogenetic and molecular studies make it possible to distinguish five types of carcinomas:

- Clear - cell: 60 - 85%
- Chromophilic: 7 - 14%
- Chromophobic: 4 - 10%
- Oncocytic: 2 - 5%
- Collecting duct: 1 - 2% (10).

Treatment

Surgery is the main treatment for renal cell carcinoma, offering a reasonable chance of curing the disease. The chances of cure by surgery most strongly depend on stage (primarily) and grade (secondarily). Standard operative procedure is a radical nephrectomy including Gerota's fascia. There is no evidence to favour a specific surgical approach. In selected cases of small (< 4 cm) peripheral lesions, an organ sparing approach may be considered.

- Chemotherapy, apart for Wilm's tumor in children, RCC seems to be very resistant to chemotherapy
- Radiation therapy (in case of bone-metastases or spreading to the brain)
- Immunotherapy – still under investigation but results are promising
- Experimental therapies

Follow up

Follow up of patients with RCC after surgical treatment is recommended to detect local recurrence and distant metastases as early as possible to permit additional treatment when indicated and if possible.

This short booklet is based on the more comprehensive EAU guidelines (ISBN 90-806179-8-9), available to all members of the European Association of Urology at their website - www.uroweb.org.

TABLE 1: Recommended follow-up scheme for renal cell carcinoma

Stage	Visit	Examination	Optional	Purpose
All T	4-6 weeks after surgery	Physical ex. Creatinine Hb	AP[A]	Exclude complications of surgery Establish remaining kidney function[2] To check recovery of peri-operative blood loss
T1, T2	Every 6 months for 3 years Every year from 3 to 5 years	Physical exam Chest X-ray	AP[B] Kidney imaging	Exclude complications of surgery and LR and LN metastases Exclude pulmonary metastases and LR afterpartial nephrectomy
T3, T4	Every 6 months for 3 years Every year from 3 to 10 years[c]	Physical exam Chest X-ray Retroperitoneal imaging		Exclude complications of surgery and LR and LN metastases Exclude pulmonary metastases and LR after partial nephrectomy To detect LR, contralateral metastases or neo- occurrence

AP = alkaline phosphatase; LR = local recurrence; LN = lymph node

a If elevated preoperatively (recurrent or persisting elevation suggests distant metastases or residual tumour) when bone pain is present, suspicion of bone or liver metastasis.

b If the postoperative level is abnormal, it should be repeated at the regular visits.

c There is a small, but continuous, risk of recurrence or metastasis from 5 - 15 yrs.