



IMPLICATION OF AGE AND TUMOUR CHARACTERISTICS ON THE SURVIVAL OF RENAL PARENCHYMA CANCER: a population-based study



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Background

- Renal parenchyma cancer (RPC) represented 2.5% of incident cancer cases in France in 2005 (Belot, 2008)
- Most epidemiological data on kidney cancer collected from registries include both urothelial (bladder tumours excluded) and invasive renal parenchyma tumours
- Few population-based studies have examined the influence of tumour characteristics on the survival of patients with RPC.

Objectives

- Estimate **5 and 7 year** population-based **relative survival** of patients diagnosed with **RPC**
- Estimate the influence of **age, sex, tumour characteristics** on this survival

Patients and methods

Eligible cases:

- Primary **invasive renal parenchyma tumour C64.9** (ICD-O2) diagnosed between **jan. 1st** and **dec. 31st 2000**
- Living in the department of Bas Rhin, Doubs, Isère, Loire-Atlantique, Somme, Tarn or Herault at the time of diagnosis
- Exclusion of nephroblastomas and sarcomas
- Collected information:** date of birth, gender, date of diagnosis, topography, histological subtype, Fuhman's nuclear grade, tumour focality, tumour size (pT), extent of regional nodal disease (pN), metastatic extension (M) and treatment
- Data collection:** retrospectively, from medical records by trained investigators from the cancer registries Rigorous evaluation of the staging components (T, N, M, pT, pN) coded according to the 5th edition of the TNM classification. Following ENCR recommendations, recoding of **pNx** into **pNo** for patients having undergone a surgical treatment.
- Vital status:** updated using standardised administrative procedure. For survivors or lost to follow-up, observations censored on jan. 1st 2008
- Statistical method:** simple and multivariate regression analyses performed using Esteve's model with Dickman approach. Relative survival calculated using STREL Computer Program¹ on Stata 10.1

1- Strel computer program, version 6.0 Non-Communicable Disease Epidemiology Unit, London School of Hygiene & Tropical Medicine, UK

Results

- 596 patients
- Sex-ratio (M/W): **2.1**
- Median age **67 yrs** [14 yrs to 95 yrs]
- Confirmation by biopsy or surgery : **94%**
- Treatment (multiple answers)
 - Radical nephrectomy : **495** (83.1)
 - Conservative surgery : **31** (5.2)
 - Immunotherapy : **40** (6.7)
 - Other treatment : **59** (9.9)
- Deceased : **48%** (285)
- Lost to follow-up : **5%** (32)

5 and 7-yr relative survival of patients with RPC

Variables	n	5-yr survival [95% CI]	7-yr survival [95% CI]
Overall survival	596	66 [62 - 71]	64 [59 - 69]
Gender			
Male	402	63 [57 - 68]	61 [55 - 66]
Female	194	71 [63 - 78]	69 [60 - 76]
Age (year)			
<60	178	78 [71 - 84]	75 [67 - 81]
60-69	171	62 [53 - 69]	60 [51 - 67]
70-79	191	61 [52 - 69]	57 [47 - 66]
>=80	56	42 [25 - 57]	38 [21 - 56]

95%CI : 95% Confidence Interval

Multivariate relative survival analysis performed on operated patients with RPC (n=526)

Variables	HR	95%CI	p	Variables	HR	95%CI	p
Gender				Tumour focality			
Male	1.0		0.451	Unifocal	1.0		<0.001
Female	0.9 [0.6 - 1.3]			Multifocality	2.6 [1.6 - 4.1]		
Age (year)				Fuhrman nuclear grade			0.042
<60	1.0		0.003	Grade I ou II	1.0		
60-69	2.2 [1.4 - 3.5]			Grade III	1.9 [1.2 - 3.1]		
70-79	1.7 [1.1 - 2.8]			Grade IV	2.0 [1.1 - 3.5]		
>=80	3.0 [1.2 - 7.8]			Unknown	1.8 [0.9 - 3.6]		
Tumour size				Metastasis extension			<0.001
pT1	1.0		<0.001	M0	1.0		<0.001
pT2	1.4 [0.7 - 2.9]			M1	12.5 [7.8 - 20.0]		
pT3-pT4	3.6 [2.1 - 6.3]			MX	3.2 [1.6 - 6.3]		
Pathological N stage							
pN0	1.0		0.487				
pN1-pN2	1.2 [0.7 - 2.1]						

HR : Hazard Ratio 95%CI : 95% Confidence Interval

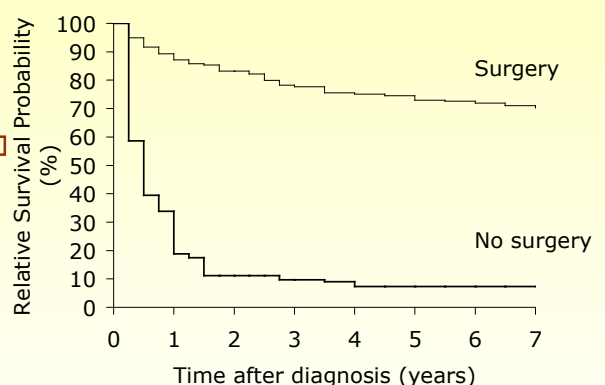
Conclusions

- 1st **population-based** study performed in France and analysing the **relative survival** of renal parenchyma cancer taking into account **the tumoral characteristics**
- Prognostic factors for operated patients: age, tumor focality, Fuhman's nuclear grade, tumor size, metastasis extension
- Worse survival of elderly patients compared to the others, probably linked to delayed diagnosis as suggested by the higher prevalence of advanced stages for these patients
- Perspectives: future population studies estimating patients survival should take into account the patient's co-morbidities and performance status

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Relative survival of operated (n=526) and non-operated (n=70) patients with RPC



Specific characteristics of non-operated patients (higher age at diagnosis, more advanced stage) → lower survival