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## OBJECTIVE

Nephrectomy is the treatment for renal cell cancer from T1-4 tumors but remain at risk.

- To determine the thirty-day mortality rate after all nephrectomy for cancer,
- To identify causes and risk factors of death,
- To analyse morbidity and mortality reviews to find clinical applications.

## METHODS

From 2014 to 2017, we performed a retrospective multicentric analysis of prospectively collected data study involving the french network for research on kidney cancer (UroCCR).

- **Inclusion** : All patients who had nephrectomy for cancer in seven french hospitals.
- **Variables analysed** :
  - Patients' characteristics (sex, age, symptoms, TNM stage, type of surgery),
  - If death occurred in the first 30 days after surgery, causes of death,
  - Morbidity and mortality reviews.

## RESULTS

	Total	Univariate analysis		Multivariate analysis	
		OR (95% CI)	P value	OR (95% CI)	P value
Sex					
Male	1647	1			
Female	896	0.54 (0.24 - 1.2)	0.115	0.51 (0.21-1.2)	0.131
Age, years					
	NA	1.027 (0.99-1.05)	0.058	1.024 (0.99-1.05)	0.129
Symptoms at diagnosis					
no	1689	1			
yes	890	2.56 (1.3-5.03)	0.006	1.09 (0.48-2.46)	0.822
Initial cT stage					
T1	1515	1			
>T1	679	6.13 (2.8-13.2)	<0.0001	1.55 (0.45-5.37)	0.48
>T2	306	8.8 (4.39-17.8)	<0.0001	3.55 (1.27-10.1)	0.015
Initial cN stage					
0 or X	2441	1			
1-2	138	4.6 (1.9 -10.7)	<0.0001	1.26 (0.48-2.46)	0.63
Initial cM stage					
0 or X	2396	1			
1	183	4.01 (1.7-8.9)	0.001	1.3 (0.52-3.25)	0.57
Operative technique					
open surgery	807	1			
laparoscopic or robotic	1718	0.272 (0.13-0.54)	<0.0001	0.65 (0.29-1.47)	0.3
Operative type					
partial nephrectomy	1326	1			
radical nephrectomy	1227	2.737 (1.3-5.7)	0.007	1.35 (0.48-3.82)	0.56

Causes of death	n=35(%)
Pulmonary	15(43)
Pneumonia or Inhalation	10(29)
Pulmonary embolism	5(14)
Digestive sepsis	7(20)
Hemorrhage	4(11)
Related to cancer	3(9)
Liver failure	2(6)
Heart failure	2(6)
Neurological	1(3)
Multiple organ dysfunction syndrome	1(3)

2578 patients underwent nephrectomy, 35 deaths occurred.

1. **Thirty-day mortality rate** after nephrectomy for cancer was 1.4%.
2. In an **univariate analysis**, risk factors were :
  - symptoms at diagnosis
  - c stage superior to cT1
  - cT stage superior to cT2
  - nodal invasion
  - distant metastasis
  - open surgery
  - radical nephrectomy
3. In a **multivariable model**, only cT stage superior to T2 was a risk factor of thirty-day mortality.
4. **Main causes of postoperative death** : PULMONARY (43%) and DIGESTIVE (20%).
5. **Morbidity and mortality reviews** : Only 2 had been found for the 35 deaths (Hemorrhage problem / extended caval thrombus)

## CONCLUSION

Mortality after nephrectomy for cancer is minimal and mostly driven by comorbidities and tumor stage. Pulmonary affections are the leading causes of death in our French cohort.

Morbidity and mortality reviews should be considered to better understand causes of death and to reduce early mortality after nephrectomy for cancer (until 40% in surgical departements as suggested by Antonacci and al.)