TREND, CHARACTERISTICS AND IMPACT ON CANCER SPECIFIC MORTALITY OF INCIDENTAL RENAL MASSES: RESULTS FROM A LARGE SERIES OF AUTOPSIES

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INTRODUCTION & OBJECTIVES

Doubtless, advances in imaging technology such as abdominal ultrasounds, computed tomography(CT) and multiparametric magnetic resonance imaging (mpMRI) are playing an important role in the diagnosis of renal masses (RM) and so of renal cell carcinoma (RCC) before the presence of clinical symptoms. This aspect has prompted interest in active surveillance (AS) as a treatment option for the small renal masses (SRMs), especially if supported by an imaging-guided biopsy that can characterize the tumor, that most likely will not contribute to cancer-specific mortality (CSM). To the best of our knowledge, contemporary data evaluating the temporal trend of pathological characteristics and the relationship with cancer-related death of the incidental RM are not available, especially in a setting of an elderly population. The aim of this study was to analyze incidence trend, changes in clinical characteristics, pathological features and cancer-related death of RM incidentally discovered at time of autopsy in a long period of time.

MATERIALS AND METHODS

Data were retrieved from the autopsy register of the Pathology Department of a single tertiary referral academic center from 15086 consecutive autopsies performed between January 2004 and December 2017. Patients with previous history of primary RCC and patient with a kidney metastatic involvement from other tumors were excluded from this study.

Table 1 – Trend, characteristics and difference in distribution of incidental RMs

	Overall	2004 - 2010	2011 - 2017	p
Patients, n. (%)	184	137 (74.5)	47 (25.5)	
Age at diagnosis, (mean ± SD)	84 (10.1)	82 (11.3)	83 (9.4)	0.79
Gender, n. (%)				0.12
Male	80 (43.5)	55 (40.1)	25 (53.2)	
Female	104 (56.5)	82 (59.9)	22 (46.4)	
Renal neoplasm, n. (%)				0.17
Oncocytoma	13 (7.1)	8 (5.8)	5 (10.6)	
Angiomiolipoma	13 (7.1)	7 (5.1)	6 (12.8)	
Papillary adenoma	2 (2.2)	3 (2.2)	1 (2.1)	
Cystic nephroma	3 (1.6)	3 (2.2)	0 (0.0)	
Metanephric tumor	2 (1.1)	2 (1.5)	0 (0.0)	
Clear-cell RCC	136 (73.9)	103 (75.2)	33 (70.2)	
Papillary RCC	2 (1.1)	2 (1.5)	0 (0.0)	
Chromophobe RCC	5 (2.7)	4 (2.9)	1 (2.1)	
Carcinoma of the coll. ducts of Bellini	5 (2.7)	4 (2.9)	1 (2.1)	
Nephroblastoma	1 (0.5)	1 (0.7)	0 (0.0)	
Sarcomatoid variant	2 (1.1)	1 (0.7)	1 (2.1)	
	Malignant RMs			
Patients, n. (%)	157 (85.3)	122 (89.1)	35 (74.5)	
pT stage, n. (%)				0.04
pT1(a,b)	123 (80.3)	92 (75.4)	34 (97.1)	
pT2(a,b)	10 (6.4)	10 (8.2)	0 (0.0)	
pT3(a,b,c)	16 (10.2)	15 (12.3)	1 (2.9)	
pT4	5 (3.2)	5 (4.1)	0 (0.0)	
pN stage, n. (%)				0.15
pN+	14 (8.9)	13 (10.7)	1 (2.9)	
pM stage, n. (%)				0.15
pM+	14 (7.6)	13 (10.7)	1 (2.9)	
Cancer-related deaths, n. (%)				0.1
yes	16 (10.2)	15 (12.3)	1 (2.9)	

RESULTS

Overall, 184(1.22%) RM were found. Benign and malignant lesions were 32(17.4%) and 152(82.6%) respectively. The median age at death was 84 years (IQR, 76.8-90) and the majority of patients were female(56,5%). Histologically were oncocytoma 13(7.1%), angiomyolipoma 13(7.1%), papillary adenoma 4(2.2%), cystic nephroma 3(1.6%), metanephric tumor 2(1.1%), clear-cell RCC 136(73.9%) in which occured 2(1.5%) sarcomatoid variant, papillary RCC 2(1.1%), chromophobe RCC 5(2.7%), carcinoma of the collecting ducts of Bellini 5(2.7%), nephroblastoma 1(0.5%). Considering the malignancies, pathological stage was: pT1 126(80.3%), pT2 10(6.4%), pT3 16(10.2%) and pT4 5(3.2%). Overall, in 16(10.2%) cases RM was cause-related death. Considering time between 2004 and 2010 vs 2011 and 2017, temporal trend of incidence of RM and consequently of RCC decreased significantly over the years (p=0.01, p=0.01 respectively). While the median age at death, sex and the distribution of the different histological types remained constant over the time, RM found in the last years are increasingly smaller (p=0.04) and only in one case in the last seven years RM was associated with cancer-specific mortality.

Figure 1 - Incidence of incidental RMs and RCC over the years

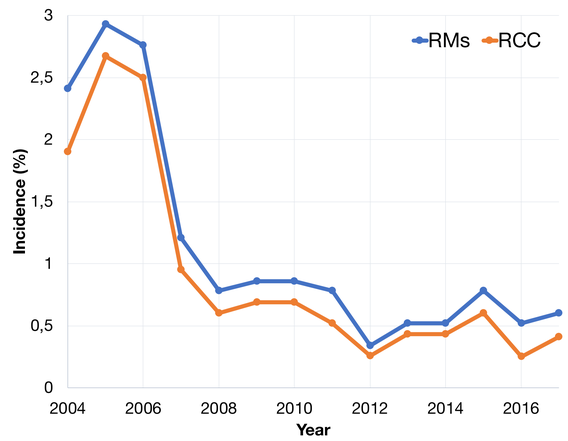

Figure 2 - Distribution of incidental RMs according to gender

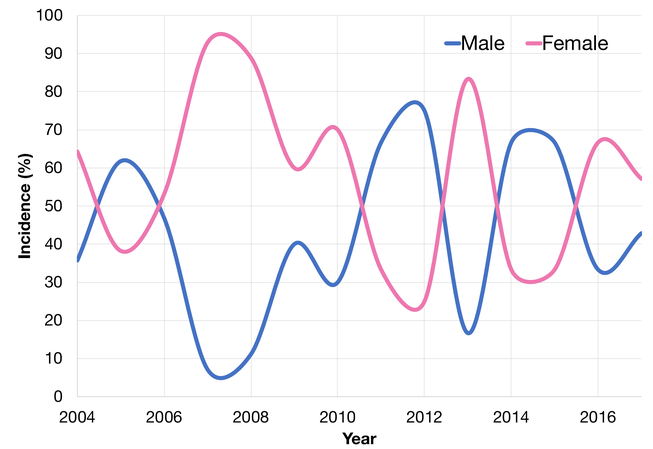

Table 2 - Incidence of RMs and RCC among the years 2004 - 2017

Year	RMs Incidence (%)	p	RCC Incidence (%)	p
2004	2.41		1.9	
2005	2.93		2.67	
2006	2.76		2.5	
2007	1.21		0.95	
2008	0.78		0.6	
2009	0.86		0.69	
2010	0.86	0.01	0.69	0.01
2011	0.78		0.52	
2012	0.34		0.26	
2013	0.52		0.43	
2014	0.52		0.43	
2015	0.78		0.6	
2016	0.52		0.25	
2017	0.6		0.41	

CONCLUSIONS

The autopsy finding of incidental RM is decreasing.

Although the distribution of the different kidney tumor histological types appears constant, the mean size of the lesions that are incidentally identified at autopsy are increasingly smaller and more harmless.

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