Changes in Characteristics of Renal Cell Carcinoma According to the Era When it Was Identified

Introduction and Objectives: As medical technology including ultrasonography and multislice computed tomography develops, more patients are being seen with small or asymptomatic renal cell carcinoma (RCC). However, we are still encountering high stage RCC containing large, invasive and distant metastasis tumors. In our present study, we examined changes in patient and tumor characteristics according to the era in which the patients were found to have RCC.

Materials and Methods: The subjects of our study are 1516 patients found from tests on our hospital's general patient intake to have RCC between January 1979 and January 2012. We divided these patients into four groups according to the era in which they were diagnosed, starting with period 1, (1979-1990), then period 2, (1991-2000), period 3, (2001-2010) and period 4, (2011-2012). We compared the patient and tumor characteristics between the four groups. The tumors were classified according to the 2009 UICC/AJCC consensus and the WHO (2004) classification systems.

Results: Patient and tumor characteristics are shown in the table. More older patients ($\geqq 76$ yrs) were found to have RCC year by year. Although patients with stage 1 cancer were increasingly being seen, there was no relative change in those with stage 4 tumors. Moreover, grade 3 tumors have increased since 2001.

Conclusion: With the aging of the population in Japan, numbers of older patients with RCC have been increasing. High grade tumors increased while the percentage of stage 4 tumors stayed unchanged, raising the possibility that the nature of the tumors may be changing. Additional population based studies will be needed to elucidate the facts.

Table

		P1	P2	P3	P4
Number of patients		197	420	796	103
Age at first visit (%)					
	$\leqq 45$ (yrs)	12	12	13	16
	46-60	50	37	31	27
	61-75	35	42	44	44
	$76\leqq$	3	8	12	14
Tumor stage (%)					
	stage 1	49	60	65	73
	stage 2	9	4	6	4
	stage 3	24	22	13	9
	stage 4	18	13	15	13
	unknown	0	1	1	1
Histology type (%)					
	CRCC	88	86	87	82
	PRCC	3	4	5	8
	Chromophobe	1	3	3	4
	Others	0	1	1	1
	unknown	8	6	4	6
Tumor grade (%)					
	G1	31	39	14	24

		P1	P2	P3	P4
	G2	56	50	66	56
	G3	6	7	14	14
	unknown	7	4	6	6
Symptoms					
	Symptomatic	47	22	27	18
	Asymptomatic	53	76	73	82

CRCC: clear cell carcinoma
PRCC: papillary renal cell carcinoma
P1: period 1 (1979-1990)
P2: period 2 (1991-2000)
P3: period 3 (2001-2010)
P4: period 4 (2011-2012)