XXI IWCLL International Workshop on CLL

CHRONIC LYMPHOCYTIC LEUKEMIA AND RENAL CELL CARCINOMA: A CASE SERIES OF TWELVE PATIENTS

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Background: Chronic lymphocytic leukemia (CLL) is the most common leukemia in adults, with a median age at diagnosis of 72 years[1]. CLL patients (pts) have an increased risk of second malignancies due to multiple synergistic factors: genetic, environmental, treatment-induced and immunomodulatory effects[2,3]. Renal cell carcinoma (RCC) is the 14th most frequent cancer worldwide[4], with a median age at diagnosis of 65 years[5]. In 6-9% of cases, it is associated with germline mutations in genes linked to cancer predisposition [6]. Despite nephrectomy, 30% of RCC pts develop metastatic disease, requiring systemic therapy and carrying a high mortality risk[7]. No association on the epidemiology and genetics of the two diseases has been reported so far.

Patient	Age at CLL dgn	Age at RCC dgn	Sex	Smoking	IGHV	CLL FISH	TP53	NOTCH1	Other mutations	RCC treatment
1	61	/	M	No	Unm	Tri12	WT	WT	/	/
2	61	62	M	Yes	Unm	Del(13q), Del(17p)	Mut	Mut	NFKBIE	Resection
3	59	60	F	No	Unm	Del(13q)	WT	WT	/	Resection
4	55	55	M	No	Unm	Del(13q), Del(11q)	WT	WT	/	/
5	73	/	M	No	Unm	Del(13q)	/	/	/	Resection
6	43	43	M	No	Mut	Del(13q)	WT	WT	SF3B1	Resection
7	68	68	M	Yes	Unm	Neg	WT	WT	SF3B1	Resection
8	52	42	M	Yes	Unm	Del(11q)	WT	WT	SF3B1	Resection
9	65	66	M	Yes	Unm	Del(13q)	Mut	Mut	/	Resection
10	59	59	M	Yes	/	/	/	/	/	Resection
11	65	72	M	No	/	/	/	/	/	/
12	71	73	M	Yes	Mut	Del(13q), Tri12	WT	WT	/	Resection

Table 1: characteristics of our patients; dgn, diagnosis; M, male; F, female; IGHV, immunoglobulin heavy chain variable gene; Unm, unmutated; Mut, mutated; WT, wild type

Results: We present 12 pts diagnosed with RCC and CLL. Eleven (92%) were male. The median age at diagnosis was 61 (43–73) years for CLL, and 61 (42–73) for RCC. In 3 pts (25%), RCC was diagnosed prior to CLL; in 6 pts (50%), the malignancies were detected concurrently; finally, 3 pts (25%) developed RCC after CLL. Our pts did not show other malignancies and family history revealed no tumours clustering. Six pts (50%) were smokers. Nine pts (75%) had RCC at early stage (I, II) and received surgical resection. After an average follow-up of 6.5 years since RCC diagnosis, 9/12 (75%) pts are still alive. Pts features are listed in Table 1.

Discussion: Currently, this is the largest single-center series of pts with CLL and RCC. An increased incidence of RCC in pts with NHL has been reported[8], but its concomitance with CLL remains a sporadic finding[9,10,11]. The young age at diagnosis for both malignancies might suggest a genetic predisposition. Del(13q), a common lesion in CLL, was present in 7 pts, although its specific role is unclear. In our cohort, almost all RCC diagnoses occurred before or concurrently with CLL, excluding RCC as a consequence of CLL treatment toxicity. Six pts were smokers, an established risk factor for RCC (RR 1.5–2.0)[12]. Regular medical check-ups and abdominal ultrasounds, routinely performed by our CLL pts, likely increased the incidental finding of renal lesions [13]. Early detection may explain why our pts were successfully treated with surgery, without the need for systemic therapies.

Conclusion: Our study suggests a potential link between CLL and RCC, warranting further study. Frequent CLL follow-up may aid early detection of other cancers, improving quality of life and survival of our pts.

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KRAKÓW 12-15 September 2025