Outcomes of Patients with Concurrent CLL and Non-small Cell Lung Carcinoma

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Introduction

- Chronic lymphocytic leukemia (CLL) is the most common type of leukemia and lung carcinoma is the leading cause of cancer-related mortality in adults, with non-small cell lung carcinoma (NSCLC) being the most common subtype.[1,2]
- Newer treatments have improved survival in both malignancies individually, but limited data is available on clinical and treatment outcomes of patients with concurrent CLL and NSCLC.[3]

Objectives

- To analyze clinical and treatment outcomes of patients with concurrent CLL and NSCLC

Methods

- A single-center retrospective analysis was conducted of all patients at Moffitt Cancer Center diagnosed with both CLL and NSCLC between 01/2001 - 12/2023.
- The primary endpoints were estimated 5-year overall survival (OS) and progression-free survival (PFS), which were calculated using the Kaplan–Meier method.

Results

- 38 patients were identified, diagnosed with both CLL and NSCLC, the majority of whom were males (52.6%), white (92.1%)., smokers (73.7% past and 10.5% current) and had history of smoking ≥20 pack years (65.8%).
- For CLL, median age of diagnosis was 62 years and genomic abnormalities detected by fluorescence in situ hybridization included unmutated *IGHV* (39.5%), del13q (39.5%), del11q (21.1%), trisomy 12 (21.1%), del17p (5.3%). At diagnosis, the majority of patients were Rai and Binet stage 0 (54.5%) and around 42.1% patients required treatment.
- For NSCLC, median age of diagnosis was 69.5 years and various histologies were detected, including adenocarcinoma (76.3%), squamous cell carcinoma (13.2%) and others (7.9%). At diagnosis, patients were most often diagnosed with clinical stage I (48.5%), T1 (65.6%), N0 (48.5%) and M0 (69.7%) disease. Most individuals received systemic treatment (47.4%) with fewer undergoing surgery (28.9%) and radiation (7.9 %).
- Interestingly, 14 patients had a third malignancy, including colorectal (5.3%), breast (10.5%), prostate (7.9%), renal cell carcinoma (2.6%), melanoma (5.3%), parotid acinar cell carcinoma (2.6%) and diffuse large B cell lymphoma (2.6%).
- The estimated 5-year OS was 46% (95% CI 32- 66) and PFS was 44% (95% CI 30-64). Median OS and median PFS was higher in females as compared to males (121.8 vs 45.1 months and 52.6 vs 44.6 months respectively) and in patients with history of smoking < 20 pack years as compared to ≥20 pack years (121.6 vs 52.6 months and 121.8 vs 41.8 months, respectively) but these results did not reach statistical significance

Conclusion

- Older age (≥ 60 years), male sex and smoking are common risk factors for development of both CLL and NSCLC.
- Most patients with NSCLC were diagnosed as adenocarcinomas with *TP53* mutations whereas most CLL were *IGHV* unmutated and *TP53* wildtype.
- Patients with concurrent CLL and NSCLC are at higher risk for development of third primary malignancies.

References

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Table 1. Patient demographic characteristics

Variable	Number (n)	Percentage (%)
Sex		
Female	18	47.40
Male	20	52.60
Race		
White	35	92.10
Black	3	7.90
Smoking status		
Current	4	10.50
Past	28	73.70
Never	6	15.50
Smoking amount		
>=20 pack years	21	65.80
<20 pack years	11	34.20
CLL Rai stage at diagnosis		
Stage 0	18	54.5
Stage I	12	36.4
Stage II	1	3.03
Stage III	0	0
Stage IV	2	6.06
NSCLC TNM stage at diagnosis		
Stage I	16	48.53
Stage II	2	6.06
Stage III	5	15.2
Stage IV	10	30.26

Figure 1. Kaplan-Meier Curves showing 5-year OS and PFS

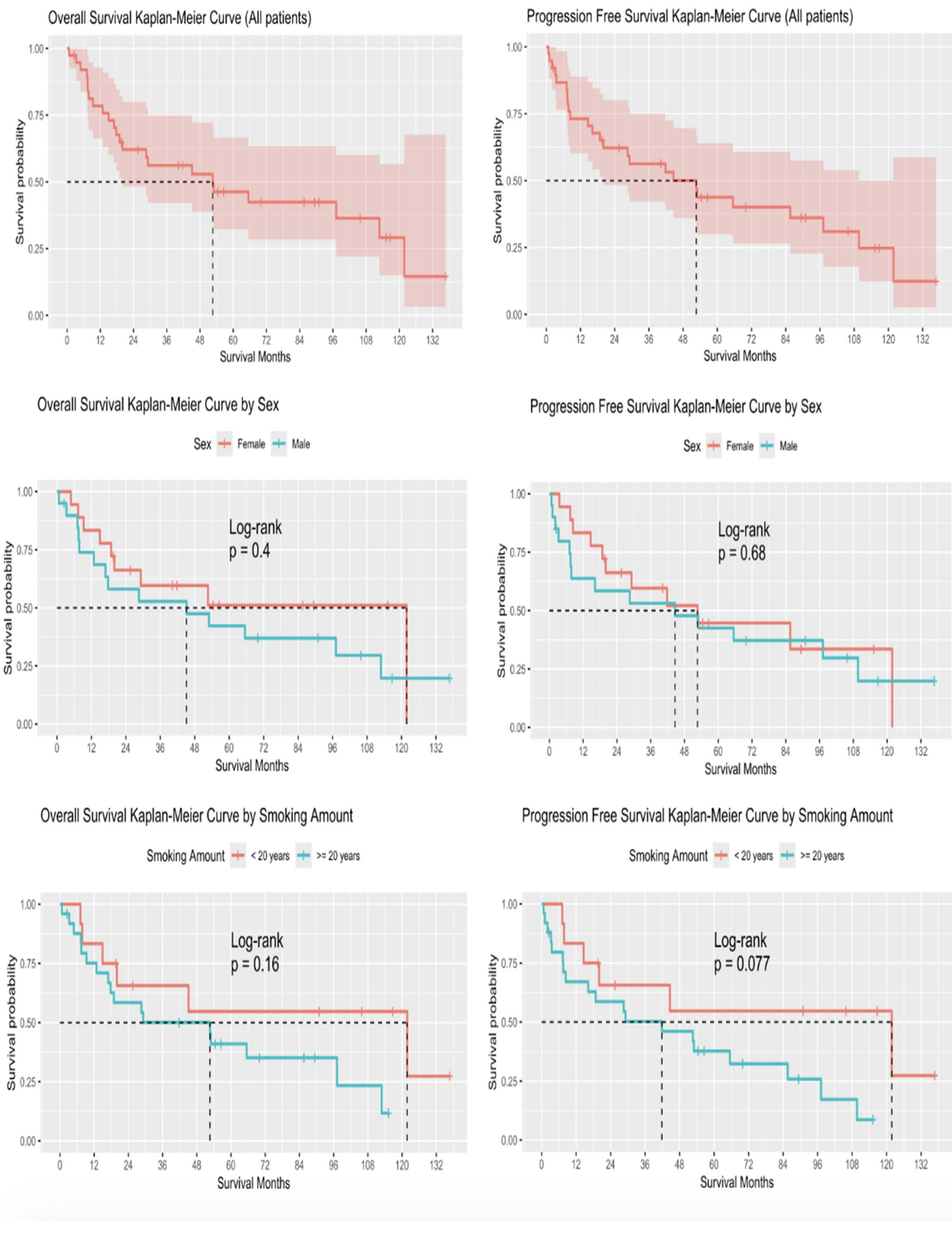


Figure 2. Frequency of commonly detected CLL genomic abnormalities and NSCLC mutations

