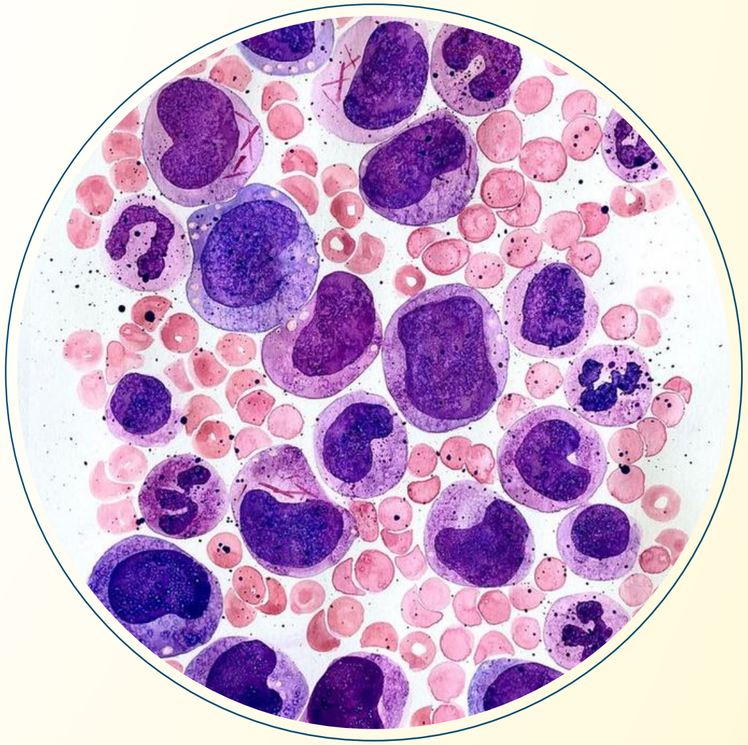
Determination of Frequency and Risk Factors of Secondary Malignancy Development in Hematological Malignancies



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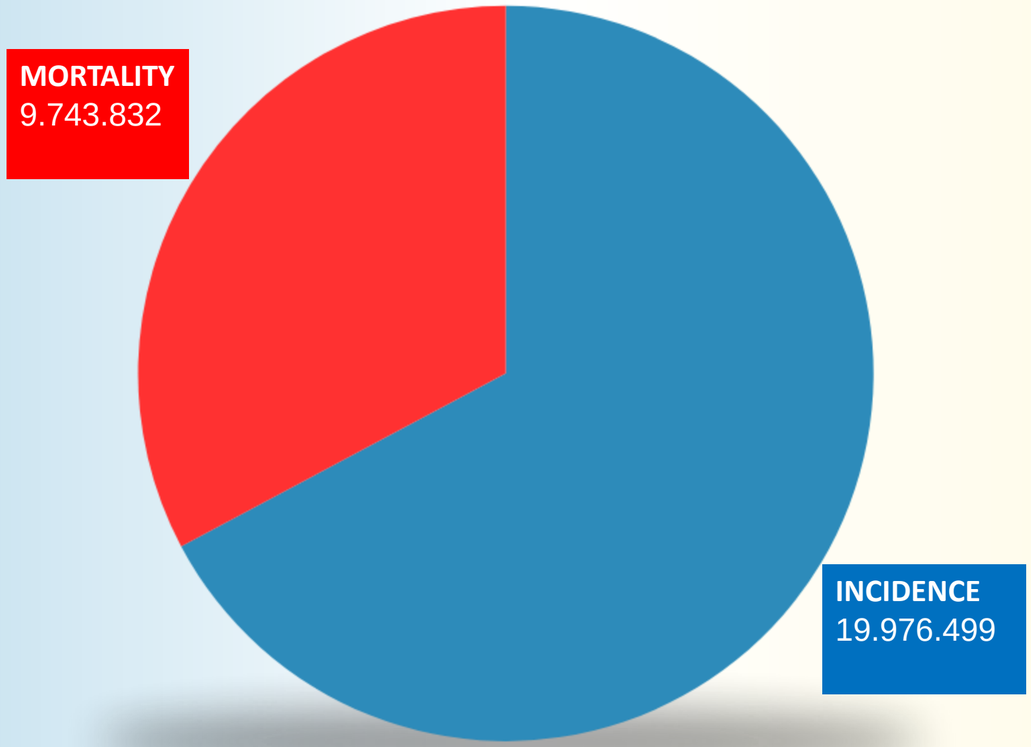
9th Annual Medical Students' Research Day

Bezmialem Vakıf University

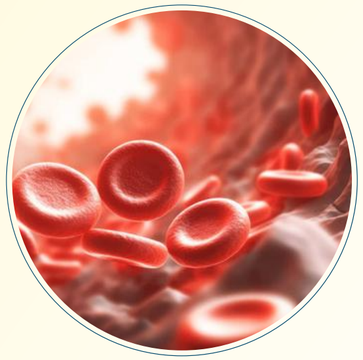
14 March 2025

Cancer remains a significant challenge within the healthcare system.



SECONDARY MALIGNANCY

A tumor that differs from the primary tumor in terms of **location**, **histopathology**, and **genetics**.



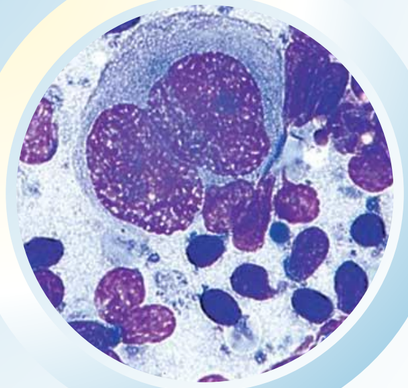
Synchronous Tumor

A tumor diagnosed **within 6 months** of the primary cancer diagnosis.

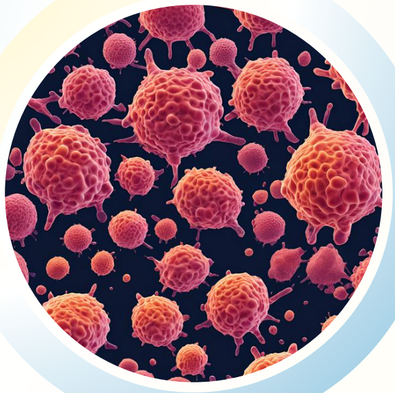
Metachronous Tumor

A tumor diagnosed **after 6 months** of the primary cancer diagnosis.

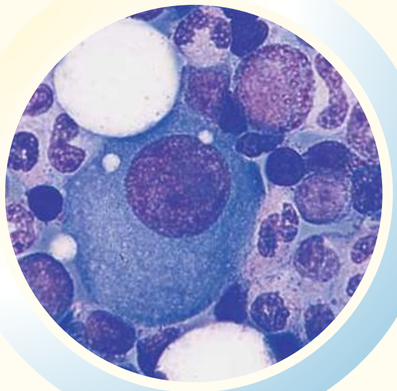
Aim of the Study



To reveal the frequency of secondary malignancy development in hematological malignancies.



To analyze possible risk factors for the development of secondary malignancies.



To contribute to the literature with our findings and emphasize the importance of secondary malignancy development.

Method

- February 2012 - May 2024
- Bezmialem Vakif University Faculty of Medicine Hematology Clinic

Study Group

Patients with secondary malignancies.

Control Group

Patients who were matched with the study group in terms of diagnosis, age, and gender.

Parameters

- Age, Gender
- Stage
- Presence of B symptoms
- Primary involvement
- Extranodal involvement
- Treatment (Chemo / Radiotherapy / HSCT)
- Relapse
- Family history of cancer
- Comorbidities

Inclusion Criteria

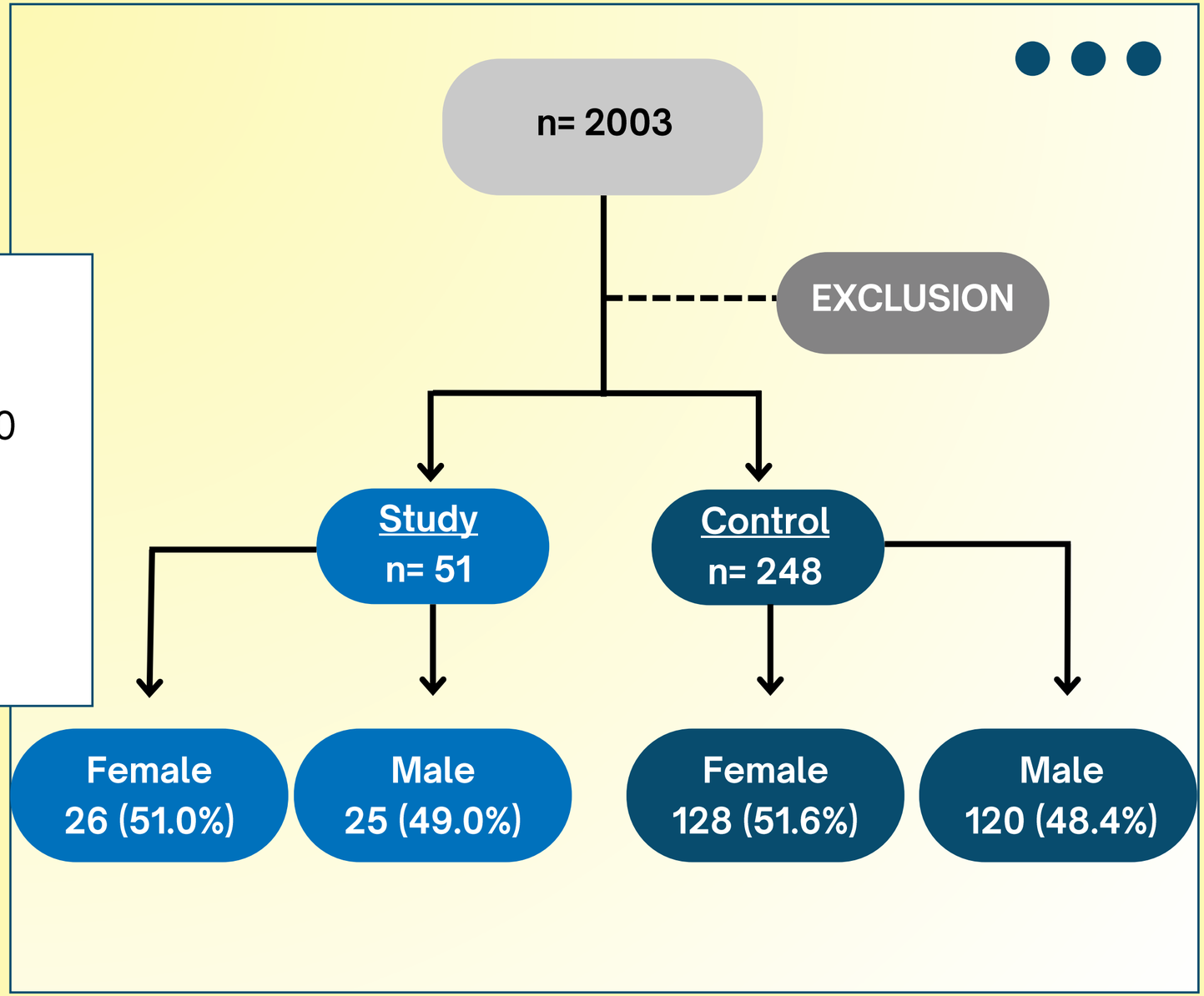
- Patients aged 18 years and older diagnosed with hematological malignancy.
- Patients who have adequate medical records.

Exclusion Criteria

- Patients with a prior cancer history.
- Patients with insufficient medical records.

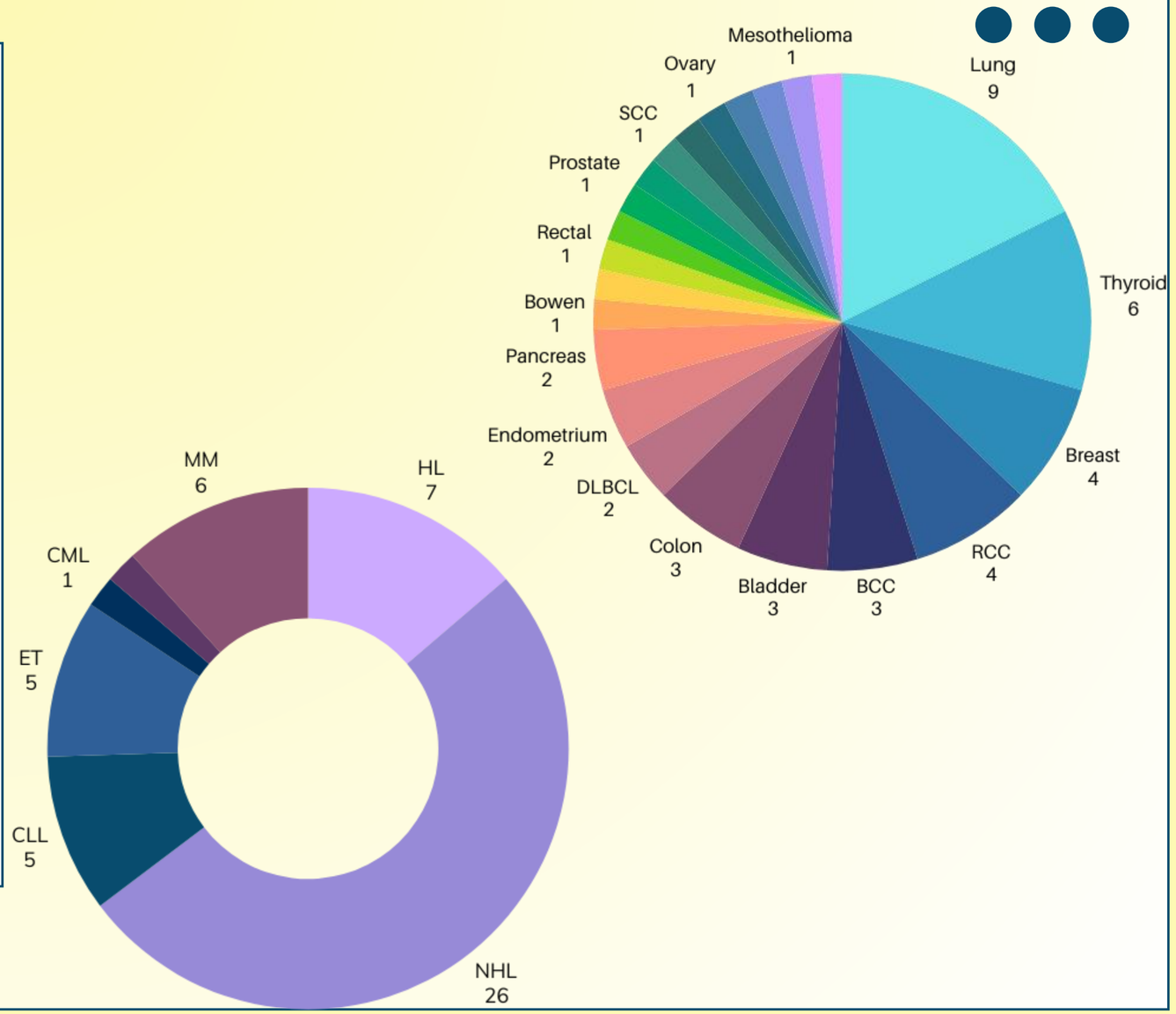
Results

- Follow-up: 70 months (5 years 10 months)
- Age: 64 (24-89)
- Female: 154 (51.0%)
- Male: 145 (48.5%)



Results

- The mean time to secondary malignancy development: 103.61 months
- 11 synchronous (21.6%) & 40 metachronous (78.4%)
- Hematological malignancy with the highest incidence of secondary malignancy: Non-Hodgkin Lymphoma (n= 26, 51.0%)
- Most common secondary malignancy: Lung Cancer (n= 9, 17.6%)
- Most common synchronous tumor: Thyroid Cancer (n= 3, 27.3%)



Results

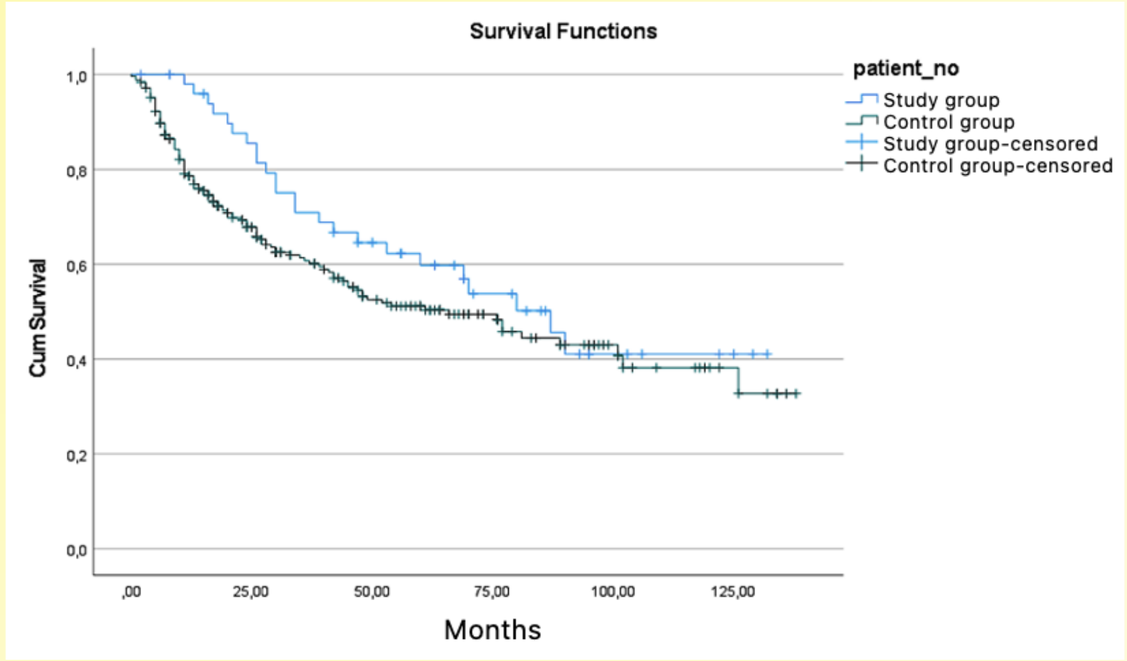
- Relapse and radiotherapy were significantly more common in the control group (p=0.023; p=0.038).
- A family history of cancer was statistically significant in the study group (p<0.001).

Parameters	With SM (n= 51) Count (%)	Without SM (n= 248) Count (%)	p
Relapse No Yes	 48 (%94.1) 3 (5.9%)	 201 (%81.0) 47 (%19.0)	**0.023**
Radiotherapy No Yes	 36 (%76.0) 15 (%29.4)	 136 (%54.8) 112 (%45.2)	**0.038**
Family History of Cancer No Yes	 36 (%70.6) 15 (%29.4)	 242 (%97.6) 6 (%2.4)	**<0.001**

Risk Factors for the Development of Secondary Malignancy

- No history of relapse
- No history of radiotherapy
- A family history of cancer

	Multivariate OR (95% CI)	p
Stage		
Early	1.47 (0.74-2.91)	0.248
Advanced	1.00	
Relapse		
No	5.18 (1.27-21.16)	**0.022**
Yes	1.00	
Radiotherapy		
No	2.44 (1.15-5.20)	**0.020**
Yes	1.00	
Comorbidities		
No	1.00	0.179
Yes	1.86 (0.75- 4.64)	
Family History of Cancer		
No	1.00	**<0.001**
Yes	21.90 (7.30-65.6)	

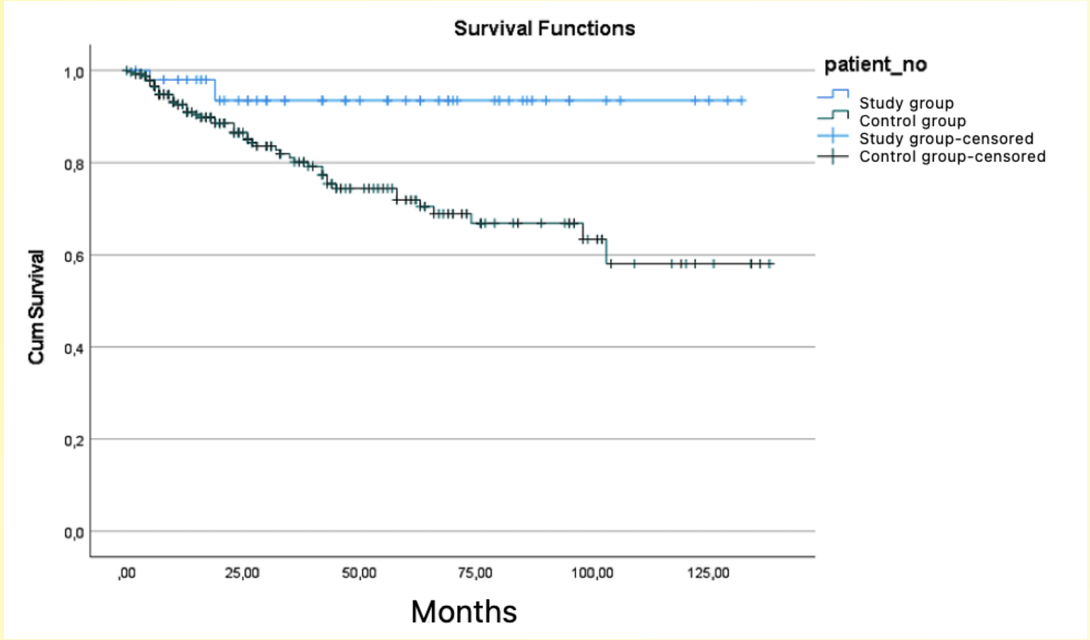


Overall Survival (OS)

There was no statistically significant difference in OS between the groups (p=0.184).

	[a] Multivariate OR (95% CI)	p	[b] Multivariate HR (95% CI)	p
Age Young Old	1.00 1.07 (1.04-1.10)	**<0.001**	1.00 1.07 (1.01-1.13)	**0.009**
Gender Female Male	1.00 2.23 (1.33-3.74)	**0.002**	1.00 3.60 (1.37--9.44)	**0.009**
Stage Early Advanced	1.00 2.20 (1.24-3.91)	**0.007**	1.13 (0.43-2.93) 1.00	0.779
Relapse No Yes	1.00 3.14 (1.55-6.36)	**0.001**	1.34 (0.03-58.09) 1.00	0.879

a= Logistic regression, b= Log-rank



Relapse

The time to relapse was longer in those who developed secondary malignancies compared to those who did not (p=0.004).

	Multivariate HR (95% CI)	p
Patients with secondary malignancy without secondary malignancy	1.00 5.16 (1.59-16.17)	**0.006**
Stage Early Advanced	1.00 1.29 (0.68-2.45)	0.429
Extranodal Involvement Absent Present	1.00 1.01 (0.48-2.12)	0.969
HSCT No Autologous	1.00 6.25 (3.40-11.51)	**<0.001**
Chemotherapy No Yes	1.00 3.63 (0.49-26.44)	0.203

Discussion

01 The fact that lung cancer is the most common secondary malignancy is consistent with other studies [4,6].

02 Interestingly, while the most common synchronous tumor in our patients was thyroid cancer, one of our patients developed peritoneal mesothelioma.

03 The risk factors indicated that the development of secondary malignancy could occur independently of relapse and treatment protocol.

04 Unlike previous studies, this study highlights that the mean time to the onset of secondary malignancy exceeded the follow-up duration (103.61 months) [6, 7, 9, 11-13].

Limitations

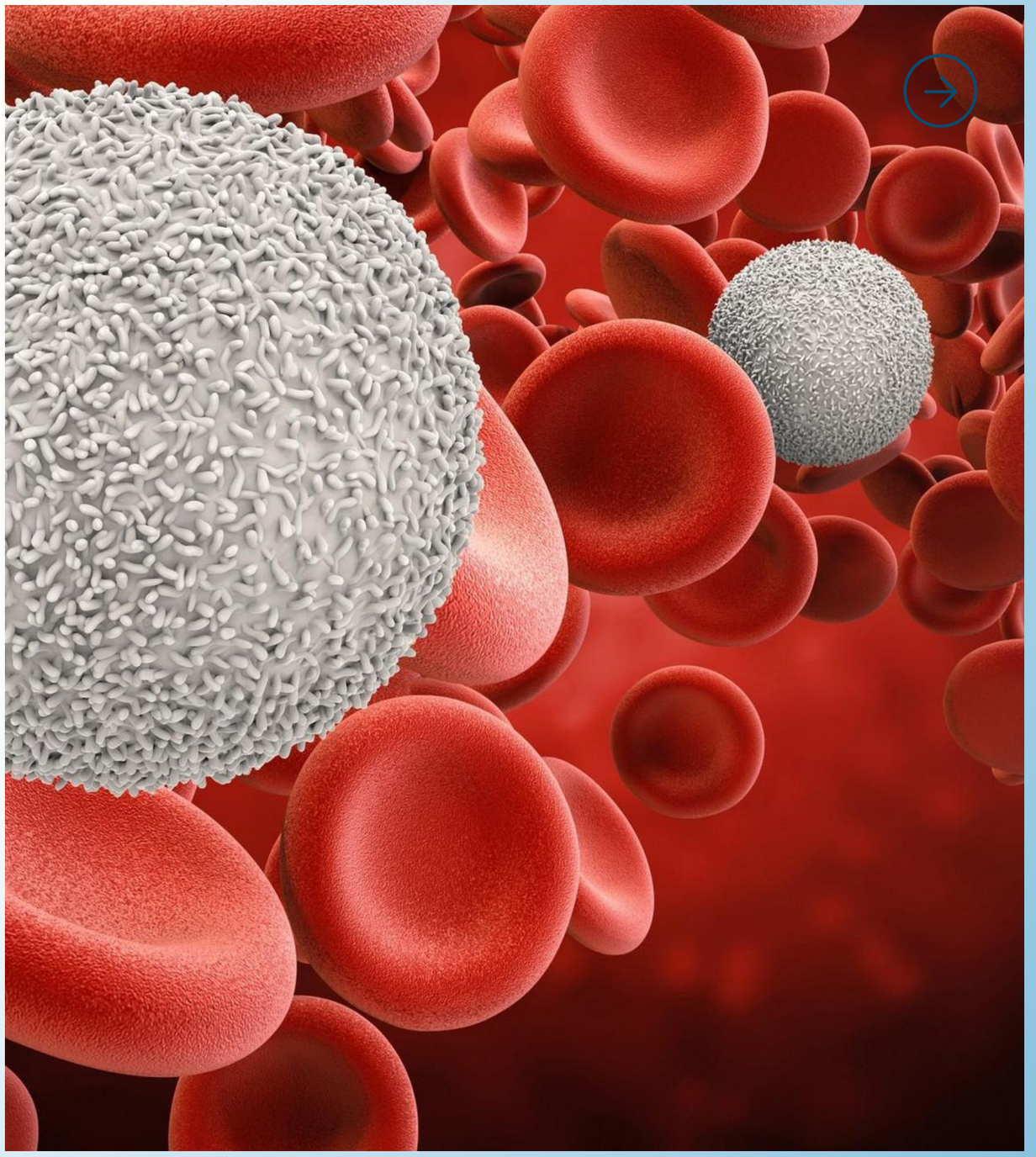
- Single-center
- Retrospective study

Powerful Sides

- The systematic recording of patient data
- The examination of patients with primary hematological malignancy

Conclusion

- The presence of multiple malignancies in cancer patients is a significant health concern.
- Patients should be integrated into screening programs from the time of diagnosis of hematological malignancy.
- Further studies are needed to validate our findings and to gain a more comprehensive understanding of the risk factors and outcomes associated with secondary malignancies.



ACKNOWLEDGMENTS

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OP 18

DETERMINATION OF FREQUENCY AND RISK FACTORS OF SECONDARY MALIGNANCY DEVELOPMENT IN HEMATOLOGICAL MALIGNANCIES

Ennur Ramadan [1], Güven Çetin [2], Özge Pasin [3]

Hematology, Transfusion and Cell Therapy
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PP 09

PERITONEAL MESOTHELIOMA AS A CO-MALIGNANCY IN A PATIENT WITH CLL/SLL: CASE REPORT

Satı Betül Beydilli [1], Ennur Ramadan [2], Güven Çetin [3], Mehmet Aydın [4]

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I’d love to hear your thoughts—any questions or feedback?

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