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Treatment-Related Cardiotoxicity in Patients With Malignant Lymphoma: A 5-Year Follow-Up

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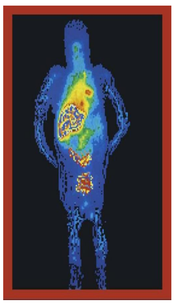
Introduction

Chemotherapy-induced cardiotoxicity, affecting 10-20% of cancer survivors and compromising long-term survival, is a significant concern for lymphoma patients at elevated risk if they receive high-dose anthracyclines (A), high-dose radiation therapy (RT), low-dose A plus low-dose RT, low-dose A with ≥ 2 cardiovascular risk factors, are ≥ 60 years at diagnosis, or have pre-existing cardiac dysfunction. lymphoma following chemotherapy.

Aim

This study aimed to determine the incidence and risk factors of cardiotoxicity in patients with lymphoma following chemotherapy.

Methods



A retrospective analysis was conducted on all lymphoma patients (n = 349) treated at the Oncology Centre, King Saud Medical City, Riyadh, between 2015 and 2022, within five years post-lymphoma therapy. Electronic medical records were reviewed to collect data on demographics, A and RT dosing, imaging, cardiovascular risk factors, and treatment details.

Results

The mean patient age was 47.61 years (range: 4-93 years), 59.6% male, and 86.71% Saudi nationals. The age distribution showed 25.79% were under 30, and the largest group (29.51%) was aged 50-69. The overall incidence of post-chemotherapy cardiotoxicity was 1.72%. A statistically significant difference in cardiotoxicity incidence was observed across age groups, with 50% of patients aged ≥ 70 developing it compared to 1.72% of those under 30 (P=0.03). ICU-admitted patients showed a higher cardiotoxicity rate (33.33% vs. 12.03%), though not statistically significant (P=0.155). Similarly, diabetic (33.33% vs. 20.41%, P=0.465) and hypertensive patients (33.33% vs. 21.28%, P=0.499) had numerically higher rates, but these were not statistically significant. The number of chemotherapy cycles did not correlate with cardiotoxicity incidence (P=0.45). Advanced age was significantly associated with increased cardiotoxicity risk

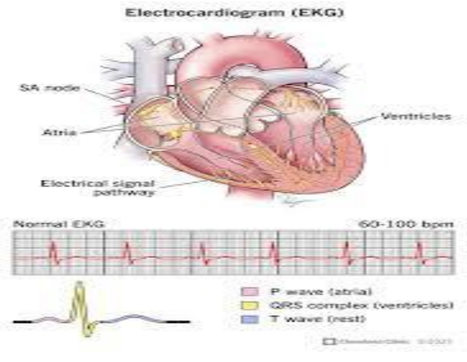


Table 1. Demographic Characteristics of Lymphoma Patients.

Demographics		n	%
Gender	Male	208	59.6
	Female	141	40.4
Nationality	Saudi	300	86.71
	Non-Saudi	46	13.29
Marital status	Single	110	34.92
	Married	187	59.37
	Other	18	5.71
Age Grouping	Less than 30	90	25.79
	30 to 49	96	27.51
	50 to 69	103	29.51
	70 and more	60	17.19
Age	Mean		SD
	47.61		20.441

Table 4. Distribution of Risk Factors Among Lymphoma Patients

Risk factors		n	%
Smoker	No	326	93.41
	Yes	23	6.59
DM	No	277	79.37
	Yes	72	20.63
Type of DM	Type 1	3	4.35
	Type 2	66	95.65
HTN	No	274	78.51
	Yes	75	21.49
Hyperlipidemia	No	316	90.54
	Yes	33	9.46
Past history of cardiac disease	No	349	96.68
	Yes	12	3.32
Radiation	No	300	85.96
	Yes	49	14.04
ICU admission	No	307	87.97
	Yes	42	12.03
Family history of lymphoma	No	342	97.99
	Yes	7	2.01
Family history of cardiac disease	No	346	99.14
	Yes	3	0.86

Summary

This study revealed a 1.72% incidence of cardiotoxicity in lymphoma patients post-chemotherapy.

Discussion

This study highlights the relatively low incidence of cardiotoxicity in lymphoma patients undergoing chemotherapy, observed at just 1.72%. No statistically significant associations were found in this cohort. The findings suggest that while the risk of cardiotoxicity exists, it may not be as prevalent as previously thought. Nonetheless, the importance of vigilant cardiac monitoring and management remains critical, especially for patients with pre-existing comorbidities or those in higher-risk categories. We recommend further studies to confirm these associations and explore potential preventive strategies and interventions to reduce the risk of long-term cardiac complications in lymphoma patients undergoing chemotherapy.

The study was conducted with a sample size of 349 participants from a single medical centre in Riyadh, Saudi Arabia. This may limit the generalizability.

References

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