Clin. Lab. 2026;72:1-2

ORIGINAL ARTICLE

NT-proBNP and hs-cTnT in Predicting the Incidence and Prognosis of Anthracycline-Caused Cardiovascular Toxicities in Non-Hodgkin's Lymphoma

Guangjian Su [*], Wei Peng [*], Yan Chen [*], Yingfeng Lin, Jin Chen, Yanping Xiao, Zhaolei Cui, Zhenzhou Xiao

[*] *These are the co-first authors*

Laboratory of Biochemistry and Molecular Biology Research, Fujian Key Laboratory of Advanced Technology for Cancer Screening and Early Diagnosis, Department of Laboratory Medicine, Clinical Oncology School of Fujian Medical University, Fujian Cancer Hospital, Fuzhou, China

SUMMARY

Background: **This study aimed to investigate the role of serum N-terminal pro-B-type natriuretic peptide (NT-proBNP) and high-sensitivity cardiac troponin T (hs-cTnT) in predicting the occurrence and prognosis of symptomatic cardiovascular toxicities (CVTs) in non-Hodgkin's lymphoma (NHL) patients receiving anthracyclines (ATCs).**

Methods: **We conducted a retrospective analysis of serum NT-proBNP and hs-cTnT levels in 182 NHL patients undergoing anthracycline treatment. The post-treatment elevation ratio (ER) of NT-proBNP (NT-proBNP-ER) was calculated, and receiver operating characteristic curves (ROCs) were generated.**

Results: **The area under the curves (AUCs) of NT-proBNP-ER, hs-cTnT, and their combination for diagnosing symptomatic CVTs were 0.903, 0.811, and 0.9807, respectively. Serum NT-proBNP-ER ≥ 2.56 and hs-cTnT ≥ 11.68 ng/L were positively correlated with the occurrence of symptomatic CVTs. Patients with a post-treatment NT-proBNP-ER ≥ 2.56 had shorter median progression-free survival (PFS) and overall survival (OS) than those with an NT-proBNP-ER < 2.56. Similarly, patients with post-treatment hs-cTnT ≥ 11.68 ng/L experienced markedly shorter median PFS and OS compared to those with hs-cTnT < 11.68 ng/L.**

Conclusions: **An NT-proBNP-ER ≥ 2.56 or hs-cTnT ≥ 11.68 ng/L, individually or combined, are significant predictors of symptomatic CVTs. Exceeding these thresholds indicates a poor prognosis in NHL patients treated with anthracyclines.**

(Clin. Lab. 2026;72:1-2. DOI: 10.7754/Clin.Lab.2025.240339)

Correspondence:
Zhenzhou Xiao
Clinical Oncology School of Fujian Medical University
Fujian Cancer Hospital
No. 420 Fuma Road
Jin'an, Fuzhou 350014
Fujian
China
Email: zlyy2016@126.com

Manuscript accepted May 30, 2025

Supplementary Data

Table S1. Clinical characteristics of the 182 non-Hodgkin's lymphoma patients.

	Number of cases (n = 182)	Constituent ratio (%)	Symptomatic cardiovascular toxicity		χ^2	p-value
			Non-complication (n = 166)	Complication (n = 16)		
Age (years)						
≤ 60	110	60.4	105	5	6.251	0.012 *
> 60	72	39.6	61	11		
Gender						
Male	110	60.4	102	8	0.8	0.371
Female	72	39.6	64	8		
Diabetes mellitus						
Yes	13	7.1	11	2	0.132	0.717
No	169	92.9	155	14		
Hypertension						
Yes	35	19.2	31	4	0.079	0.779
No	147	90.8	135	12		
Pathological type						
DLBCL	137	75.3	123	14	1.933	0.586
Follicular	21	11.5	20	1		
Mantle cell	12	6.6	12	0		
Others	12	6.6	11	1		
Clinical stage						
I-II	71	39.0	66	5	0.444	0.505
III-IV	111	61.0	100	11		
EADM cumulative dose (mg/m2)						
< 300	38	20.9	32	6	2.934	0.087
≥ 300	144	79.1	134	10		
LDH (U/L)						
< 250	117	64.3	108	9	0.439	0.482
≥ 250	65	35.7	58	7		
WBC (10E9/L)						
< 9.5	158	86.8	145	13	0.091	0.763
≥ 9.5	24	13.2	21	3		
CHOL (mmol/L)						
< 5.7	147	80.8	135	12	0.079	0.779
≥ 5.7	35	19.2	31	4		

DLBCL Diffuse large B-cell lymphoma.