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Cell-free circulating DNA as a prognostic factor for Diffuse Large B Cell Lymphoma patients with hepatitis C virus

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INTRODUCTION

Evidence that HCV infection may be a cause in the development of lymphoma is based on several studies. suggesting that direct-acting antiviral (DAAs) therapy should be initiated as early as possible after diagnosis of HCV infection to eradicate HCV infection and thus, prevent extrahepatic manifestations such as NHL. This study aims to compare the outcome of (HCV+ve) DLBCL patients either receiving DAAs or not to (HCV-ve) patients

AIM

This study aims to compare the outcome of (HCV+ve) DLBCL patients either receiving DAAs or not to (HCV-ve) patients

METHODS

This study included 97 participants. Group (I): positive HCV patients were subdivided to: Group (IA): HCV +ve receiving (DAAs). (22 cases) Group (IB): HCV +ve not receiving (DAAs). (19 cases). Group (II): -ve HCV patients (30 cases). Group (III): Control group (26 cases).

METHODS

Inclusion criteria: DLBCL by histopathology. Performance Status <2, patients had physical examination, and complete workup for patients with DLBCL.Before starting R-CHOP, measurement of HCV RNA, using the fully automated auto analyzer SYNCHRON CX9ALX , Sysmex K-21,HCV assay (Roche Molecular) Diagnostics, CA, USA) with lower limit of quantitation <10IU/mL, respectively. And measurement of Cell-free DNA in plasma was quantified using a SYBR green-based real-time PCR assay using the b-globin gene as a reference gene

RESULTS

The response rate among patients with -ve HCV or patients who has received DAAs is significantly higher than those who didn't (P.value <0.05)

The mean free DNA expression level in DLBCL cases was notably higher at 181.0, compared to a significantly lower level of 2.1 in the control group ($p < 0.001$). This suggests a potential link between elevated free DNA expression and the presence of DLBC in our study

Free DNA expression demonstrated a significant increase at higher stages of lymphoma. Mean Free DNA expression levels rose from (4.12 ± 3.16) in Stage I to (1243.02 ± 604.06) in Stage IV $p<0.001$, also Patients who died due to disease progression exhibited significantly higher levels ($p < 0.001$).

Table 1: Association between different patient's group and free DNA expression

		Free DNA. Expression		P-value
		Mean	Standard Deviation	
Groups	Control	3.1	2.0	<0.001
	Negative HCV	313.4	209.9	
	Positive HCV N.T	384.5	292.5	
	Positive HCV Treat	363.0	300.4	

Table 2: Association between free DNA expression and DLBC.

	Case	Control	
	Mean ± SD	Mean ± SD	
Free DNA expression	347.8 ± 261.3	3.1 ± 2	<0.001

Table 2: Association between survival and free DNA expression in cases groups

		Free DNA Expression		P-value
		Mean	Standard Deviation	
survival	Alive	299.20	190.9	<0.001
	Dead	407.15	210.3	

Table 8: Association between Free DNA expression and Lymphoma stage

		Free DNA expression	P-value
		Mean ± SD	
Lymphoma stage	I	4.12 ± 3.16	<0.001
	II	44.03 ± 22.04	
	III	156.26 ± 113.02	
	IV	1243.02 ± 604.06	

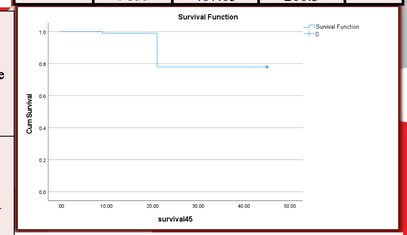


Figure 1: Kaplan Meier survival curve

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CONCLUSIONS

HCV is a big part of the etiology of disease in EGYPT, treatment of HCV to decrease the incidence of DLBCL is crucial, and assessing viral load during treatment of DLBCL is important, more work and larger studies are needed to confirm our findings.

CONTACT INFORMATION

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