



Original Article

Prevalence of fatty liver in type 2 Diabetic patients: Experience from northern Bangladesh

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Abstract

This study was done to find out the prevalence of fatty liver in type2 Diabetic patients. This was a descriptive cross-sectional comparative study carried out in Department of Medicine, Rajshahi Medical College Hospital and Rajshahi Diabetic Association Hospital from July 2008 to June 2010. 100 (one hundred) diagnosed type2 diabetic patients were included. All of those study population were free from taking any hepatotoxic drugs and free from any preexisting liver disease. This exclusion was done by history, through clinical examination and relevant investigations. Among 100 type2 diabetic patients, 66 (66%) had normal, 25 (25%) had mild fatty change, 6 (6%) had moderate fatty change in liver; 2 (2%) had mild hepatomegally and 1 (1%) had congested liver. Non had cirrhosis or hepatocellular carcinoma.

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Introduction

Diabetes mellitus is a common metabolic disorder characterized by hyperglycaemia due to absolute or relative deficiency of insulin. The world wide prevalence of DM has risen dramatically over the past two decades, from an estimated 30 million case in 1985 to 177 million in 2000. Based on current trends >360 million individuals will have diabetes by the year 2030.¹ Diabetes mellitus is a growing health problem that causes significant morbidity and mortality.²

Although the prevalence of both type 1 and type2 DM is increasing world wide, the prevalence of type2 DM is rising much, more rapidly. Type 2 DM is principally a disease of the middle- age and elderly, typical age of onset is >40 years. In individuals >60 years, the prevalence of DM was

20.9% and over 70% of all case of diabetes occur after the age of 50 years.³

Hepatic fat accumulation is a well-recognized complication of diabetes with a reported frequency of 40–70%. Unfortunately, associated obesity is a frequently occurring confounding variable. Type 1 diabetes is not associated with fat accumulation if glycemia is well controlled, but type 2 diabetes may have a 70% correlation regardless of blood glucose control.⁴

Material and Methods

This was a descriptive cross-sectional comparative study carried out in Department of Medicine, Rajshahi Medical College Hospital and Rajshahi Diabetic Association Hospital from July 2008 to June 2010. 100 (one hundred) diagnosed type2

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diabetic patients and 30 apparently healthy people were included. All of those study population were free from taking any hepatotoxic drugs and free from any preexisting liver disease. This exclusion was done by history, through clinical examination and relevant investigations.

Results

Among 100 type2 diabetic patients, 66 (66%) had normal , 25 (25%) had mild fatty change, 6 (6%) had moderate fatty change in liver; 2 (2%) had mild hepatomegally and 1 (1%) had congested liver. Non had cirrhosis or hepatocellular carcinoma.

Table-1: USG of HBS in type-2 diabetic patients

Findings	Frequency	Percentage (%)
Normal	66	66
Mild fatty change	25	25
Moderate fatty change	6	6
Mild hepatomegaly	2	2
Congested liver	1	1

Figure of Ultrasonographic findings of liver of type2 diabetic patients

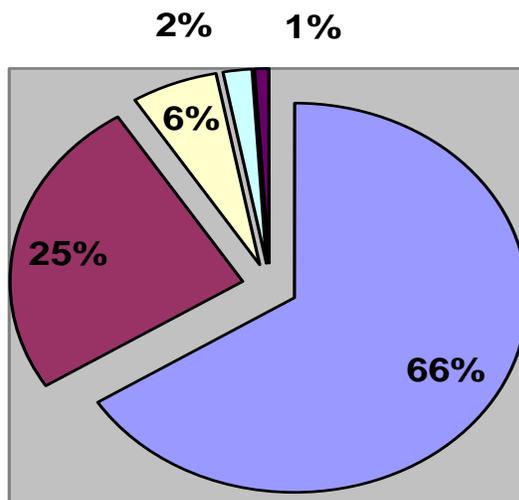


Table-II: Age and sex distribution of study population

Age group (yrs)	Case (n=100)		
	Male	Female	Total
41-50	21	23	44
51-60	25	10	35
61-70	10	4	14
71-80	5	2	7
Total	61	39	100

Table III: Residence and occupation of study population

A) Residence	Case		
	No.	(%)	
Urban	58	58.0	
Rural	42	42.0	
Total	100	100.0	
B) Occupation			
	Farmer	18	18.0
	Business	16	16.0
	Service holder	31	31.0
	Housewife	35	35.0
	Total	100	100.0

Discussion

Type-2 diabetes mellitus is increasing throughout the world, particularly in Asia including Bangladesh.¹ Virtually the entire spectrum of liver disease is seen in patients with type-2 diabetes. This includes abnormal liver enzymes, non alcoholic fatty liver disease, cirrhosis, hepatocellular carcinoma and acute liver failure.⁵ Salmela et al⁶ done liver biopsy of 68 patients of type-2 diabetes having abnormal LFTs. Of the 68 patients 5 had normal liver histology and 63 patients with abnormal liver histology, 48 had fatty liver or steatosis with non-specific inflammatory change, whereas 14 had evidence of fibrosis. In our study we did not done any liver biopsy. Cusi and Kenneth⁷ in 2009 showed that approximately 70% person with type-2 diabetes mellitus had a fatty liver and the disease follows a more aggressive course with necroinflammation and fibrosis. New evidence suggests that it is not

steatosis per se but the development of lipotoxicity- induced mitochondrial dysfunction and activation of inflammatory pathways that leads to progressive liver damage. Non alcoholic steatohepatitis is a leading cause of end-stage liver disease. In our study fatty liver is common which was 31%, among them 25% had mild fatty change and only 6% had moderate fatty change.

Conclusion

A high proportion of patients with type-2 diabetes mellitus in our country have abnormal liver function tests that may be a marker of NASH and insulin resistance.

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