

How Common is Type 2 Diabetes Mellitus and Nonalcoholic Fatty Liver Disease in Patients with Primary Biliary Cholangitis

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LEARNING OBJECTIVES

Evaluate the prevalence of type 2 diabetes mellitus (T2DM) in patients with primary biliary cholangitis (PBC).

Determine the influence of T2DM on the degree of nonalcoholic fatty liver disease (NAFLD) and liver fibrosis in patients with PBC.

METHODS

318 patients who met the AASLD criteria for the diagnosis of PBC were evaluated in a retrospective analysis.

The median duration of follow up was 3.9 years.

The participants were evaluated for the presence of T2DM, defined as a hemoglobin A1c \geq 6.5% or the use of antidiabetic drugs at anytime.

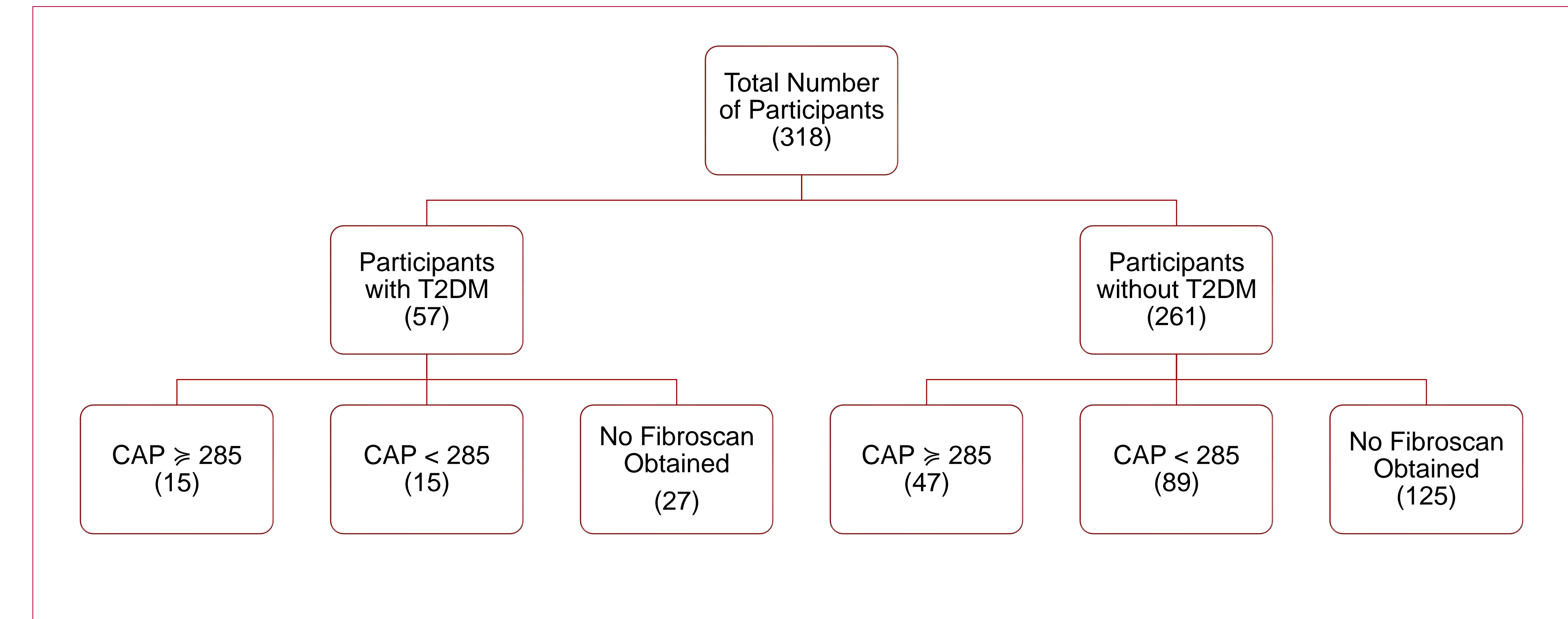
NAFLD was identified based on the presence of a controlled attenuation parameter (CAP) \geq 285 dB/m.

Differences between the degree of fatty liver and the amount of liver fibrosis were compared between individuals with PBC and T2DM to those with PBC without T2DM.

TABLE 1

	Whole Cohort, n=318	PBC with T2DM n=57	PBC without T2DM n=261	P Value
Age on Initial Visit (years)	59.2 (11.5)	57.7 (9.6)	59.5 (11.8)	0.273
Sex				0.755
Male	30 (9.4)	6 (10.5)	24 (9.2)	
Female	288 (90.6)	51 (89.5)	237 (90.8)	
Race				<0.001
White	282 (88.7)	43 (75.4)	239 (91.6)	
African American	15 (4.7)	9 (15.8)	15 (2.3)	
Asian	6 (1.9)	1 (1.8)	6 (1.9)	
Native Hawaiian or Pacific Islander	2 (0.6)	0 (0)	2 (0.8)	
Unknown	13 (4.1)	4 (7)	13 (3.4)	
Body Mass Index (kg/m ²)	29.5 (6.7)	33.3 (7.7)	28.7 (6.2)	<0.001
<18.5	3 (1.1)	0 (0)	3 (1.3)	0.014
18.5-24.9	70 (24.9)	5 (10)	65 (28.1)	
25-29.9	94 (33.5)	16 (32)	78 (33.8)	
\geq 30	114 (40.6)	29 (58)	85 (36.8)	
Hypertension	160 (50.3)	41 (71.9)	11 (45.6)	<0.001
Albumin (g/dl)	3.8 (0.6)	3.8 (0.6)	3.8 (0.5)	0.393
Total Bilirubin (mg/dl)	1.3 (2.4)	1.4 (3.0)	1.3 (2.2)	0.735
Alkaline Phosphatase (U/L)	266.3 (255.5)	247.8 (149.4)	270.5 (273.8)	0.274
AST (U/L)	53.8 (45.8)	44.4 (21.4)	55.9 (49.4)	0.004
ALT (U/L)	54.3 (51.2)	47.6 (31.9)	55.8 (54.5)	0.140
GGT (U/L)	321.33 (349.4)	451.09 (332.8)	300.34 (349.8)	0.093
INR	1.1 (0.2)	1.1 (0.2)	1.1 (0.2)	0.453
Platelets (k/cumm)	225.9 (92.1)	231.4 (105.3)	224.6 (89.0)	0.317
Hemoglobin A1c (%)	5.8 (1.3)	6.8 (1.7)	5.3 (0.5)	<0.001
CAP (dB/m)	269 (57.4)	292.5 (61.3)	263.8 (55.4)	0.013
LSM (kPa)	15.0 (28.8)	14.0 (9.9)	15.2 (31.5)	0.834
<8.5	80 (47.3)	6 (19.4)	74 (53.6)	<0.001
\geq 8.5	89 (52.7)	25 (80.6)	64 (46.4)	

FIGURE 1



RESULTS

The prevalence of T2DM in this whole cohort was 17.9% (Figure 1).

52.2% of the study population had a Fibroscan performed and 37.3% of them met criteria for NAFLD (Figure 1).

Individuals with PBC and T2DM had significantly higher CAP values than those with PBC without T2DM (mean CAP 292.5 vs. 263.8 dB/m, p = 0.013) (Table 1).

A greater proportion of the population with PBC and T2DM versus those with PBC without T2DM was noted to have a liver stiffness measurement (LSM) \geq 8.5 kPa (80.6% vs. 46.4%, p < 0.001) (Table 1).

CONCLUSIONS

The results suggest that about one in five patients with PBC have concomitant T2DM.

PBC patients with T2DM have an increased prevalence of NAFLD and clinically significant fibrosis.