

Erectile function in patients with Liver fibrosis

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Abstract

Erectile brokenness (ED) is characterized as the powerlessness to accomplish or keep a penile erection sufficiently long to have agreeable sex. There is proof that the pervasiveness of ED may increment in the further developed phases of the liver infection. The points of this investigation are to Study the impact of various evaluations of liver fibrosis on the erectile capacity and to assess the commonness of erectile brokenness in patients with various levels of liver fibrosis. Patient and techniques: This examination included 400 patients experiencing liver fibrosis characterized into 4 gatherings as per fibroscan reviewing framework Group A: 100 patients with grade 1 fibrosis (F1).Group B: 100 patients with grade 2 fibrosis (F2).Group C: 100 patients with grade 3 fibrosis (F3).Group D: 100 patients with grade 4 fibrosis (F4) We centered in Liver assessment: liver and spleen palpation and percussion for ascites. Erectile brokenness assessment by International Index of Erectile Function. Results: There was profoundly measurably huge connection ($p < 0.001^{**}$) between the level of erectile brokenness and the level of fibrosis with the a large portion of patients with extreme brokenness (53.5%) were F4 while (40.8%) of those without brokenness were F1. End: there was solid connection between the erectile brokenness and the level of liver fibrosis.

Keywords: Erectile dysfunction, Liver fibrosis, fibroscan.

1. Introduction

Erectile brokenness (ED) is characterized as the powerlessness to accomplish or keep a penile erection sufficiently long to have agreeable sex. Universally, the pervasiveness of ED increments with age, going from 1 to 10% in men more youthful than 40 years old, up to 50–100% in subjects more established than 70-years of age [1].

Penile erection is the consequence of a planned neurovascular reaction mostly determined by synapses, specifically by nitric oxide (NO), which causes the unwinding of smooth muscle cells in the cavernosal arterioles and sinuses with a resulting increment of the blood stream into the penis. Consequently, ED is often seen in men experiencing arteriogenic persistent illnesses like metabolic disorder, type-2 diabetes mellitus (T2DM) and ongoing cardiovascular sickness (CVD). Patients with liver cirrhosis are regularly influenced by comorbidities and danger factors known to be engaged with the advancement of ED, being described by changes of the sexual chemicals digestion and the continuous utilization of medications possibly following up on penile erection, like non-specific beta-blockers (NSBBs) and diuretics [2].

There is proof that the predominance of ED may increment in the further developed phases of the liver infection [3,4].

The points of this investigation are to Study the impact of various evaluations of liver fibrosis on the erectile capacity and to assess the commonness of erectile brokenness in patients with various levels of liver fibrosis.

2. Patient and Method

This study included 400 patients suffering from liver fibrosis classified into 4 groups according to fibroscan grading system [5]:

- **Group A:** 100 patients with grade 1 fibrosis (F1).

- **Group B:** 100 patients with grade 2 fibrosis (F2).
- **Group C:** 100 patients with grade 3 fibrosis (F3).
- **Group D:** 100 patients with grade 4 fibrosis (F4) (compensated Liver cirrhosis)

2.1 Inclusion criteria:

- patients suffering from liver fibrosis

2.2 Exclusion criteria:

- Active alcohol abuse (within the previous 3 months).
- Extrahepatic malignancy.
- Previous urologic surgery.
- Coexistence of known risk factors for ED, such as smoking habit, T2DM, arterial hypertension, cardio vascular disease.

We focused in Liver evaluation: liver and spleen palpation and percussion for ascites. Erectile dysfunction evaluation by International Index of Erectile Function (IIEF):

- Erection frequency
- Erection firmness
- Penetration ability
- Maintenance frequency
- Maintenance ability
- Intercourse frequency
- Intercourse satisfaction
- Intercourse enjoyment
- Ejaculation frequency
- Orgasm frequency
- Desire frequency
- Desire level
- Overall satisfaction
- Relationship satisfaction
- Erection confidence

Laboratory investigation: SGOT , SGPT. Imaging: fibroscan which is a specific ultrasound machine which estimates level of liver fibrosis.

Information passage, preparing and measurable examination was done utilizing Statistical bundle for sociologies (IBM-SPSS), rendition 24 (May 2016); IBM-Chicago, USA will be utilized for factual information investigation. Trial of importance (Kruskal-Wallis, Wilcoxon's, Chi square, strategic relapse investigation, and Spearman's relationship) were utilized. Information were introduced and appropriate examination was finished by the sort of information (parametric and non-parametric) acquired for every factor. P-values under 0.05 (5%) was viewed as genuinely huge.

3. Results

The result of the present study shows that the mean age of the studied group was 51.13±9.8 years ranging from 30 to 75 years. About 40.0% of them were illiterate and 56.25% were workers or farmers with the majority (71.25%) belong to the low social class.

The mean systolic and diastolic blood pressure of the studied group was 117.87±11.32 and 71.54±6.76 mm hg respectively while the mean BMI was 29.43±3.54. About 77.75% of the patients were Child a.

The mean Hb value was 11.34±2.5 while the mean WBCs and platelet count were 7.40±3.65 and 233.4±43.2 respectively. The mean values of ALT and AST were 39.6±40.6 and 38.5±24.6 respectively. About (38.75%) of the patients were hepatitis c positive but hepatitis b positive were only (3.75%).

The four stages of fibrosis were equally distributed among the studied group each was 25.0%.

The aftereffects of the current investigation show that mean erection space esteem was 20.345±8.71 while the mean intercourse and climax area were 8.73±4.25

and 7.45±3.42 separately. The mean estimation of fulfillment was just 6.9±2.83. The complete IIEF score and its short structure (IIEF 5) were 50.5±21.1 and 16.81±5.07 individually.

There was profoundly measurably critical connection (p<0.001**) between the erectile brokenness and the level of fibrosis with most of patients who experience the ill effects of erectile brokenness (62.7%) were F3 or F4 fibrosis while 40.82% of patients who had not erectile brokenness were F1.

There was profoundly measurably critical connection (p<0.001**) between the level of erectile brokenness and the level of fibrosis with the greater part of patients with extreme brokenness (53.5%) were F4 while (40.8%) of those without brokenness were F1.

There was measurably huge distinction between various phases of fibrosis in regards to various areas of erectile capacity with the most noteworthy score were in F1 and F2 bunches aside from climax, there was no contrast somewhere in the range of F1 and F2 stages.

There was measurably critical contrast between various phases of fibrosis in regards to add up to erectile capacity with the most elevated score were in F1 and F2 gatherings.

There was genuinely huge positive relationship between's degree of Hb and egg whites and IIEF score with higher Hb and egg whites levels were related with higher IIEF scores and negative connection between's age, BMI, ALT, AST, Creat. Urea, level of fibrosis and the absolute IIEF score with diminished IIEF score with more established age, higher BMI and fibrosis evaluation and raised AST, ALT, urea and creatinine.

Table (1) relation between the presence or absence of erectile dysfunction and degree of fibrosis (n=400).

Variables	Erectile dysfunction (n=231)		No dysfunction (n=169)		P value
	NO.	%	NO.	%	
	F1	31	13.4	69	
F2	55	23.8	45	26.6	
F3	70	30.3	30	17.8	
F4	75	32.5	25	14.8	

Chi square test p<0.001** (highly significant)

Table (2) Relation between the degree of erectile dysfunction and degree of fibrosis (n=400).

Fibrosis degree	IIEF grade										P value
	No ED (n=169)		Mild (n=70)		Mild moderate (n=98)		moderate (n=7)		Severe (n=56)		
	N	%	N	%	N	%	N	%	N	%	
F1	69	40.8	23	32.8	2	2.0	3	42.9	3	5.4	<0.001**
F2	45	26.6	18	25.7	31	31.6	0	0.0	6	10.7	
F3	30	17.8	20	28.6	32	32.7	1	14.2	17	30.4	
F4	25	14.8	9	12.9	33	33.7	3	42.9	30	53.5	

Chi square test p<0.001** (highly significant)

Table (3) Correlation between IIEF score and different parameters.

Variable	IIEF score	
	r	P
Age	-0.213	0.03*
Systolic blood pressure	0.09	0.654
Diastolic blood pressure	0.07	0.456
BMI	-0.198	0.04*
Hb	0.334	0.009*
WBCs	0.087	0.543
Platelets	0.045	0.723
ALT	-0.415	0.002*
AST	-0.392	0.005*
Albumin	0.433	0.001*
Creatinine	-0.398	0.003*
Urea	-0.224	0.03*
Fibrosis degree	-0.513	<0.001**

r:Person correlation

p<0.05* significant p<0.001**

4. Discussion

Clinical investigations of erectile brokenness (ED) in constant liver infections are meager in the writing. Albeit ongoing hepatitis and viral carriage of hepatitis B infection (HBV) and hepatitis C infection (HCV) are normal illnesses also, their relationship with ED has not yet been concentrated widely. The epidemiological investigations of ED were for the most part completed in cirrhotic patients with the etiology of liquor [6].

The point of the investigation was to assess the impact of various evaluations of liver fibrosis on the erectile capacity, and to assess the commonness of erectile brokenness in patients with various levels of liver fibrosis.

This was a near cross sectional investigation; including 400 patients had been joined up with the examination. All patients were chosen from Hepatology and Gastroenterology Department, Banha University and Menufiya National Liver Institute. This examination included 400 patients experiencing liver fibrosis ordered into 4 gatherings as indicated by fibroscan reviewing framework; Group A: 100 patients with grade 1 fibrosis (F1), Group B: 100 patients with grade 2 fibrosis (F2), Group C: 100 patients with grade 3 fibrosis (F3), and Group D: 100 patients with grade 4 fibrosis (F4) (remunerated Liver cirrhosis).

Examination of our discoveries uncovered that the mean age of the considered gathering was 51.13±9.8 years going from 30 to 75 years. About 40.0% of them were unskilled and 56.25% were laborers or ranchers with the dominant part (71.25%) have a place with the low friendly class.

In the examination done by Kim et al., 2015 [7] revealed that the mean periods of patients with constant hepatitis were 49.9±5.0 years old, individually. Of 35 patients with CHB, 15 were in their 40s and 20 were in their 50s. Twelve of 34 patients with HBV-LC were in their 40s and the rest 22 were in their 50s.

Toda et al., 2005 [3] revealed that the quantities of subjects adequate for dependable factual assessment

were 29 in those matured 40–49 and 23 in those matured 50–59. As indicated by Marumo et al., 2001 [8], the occurrence of ED of evaluations higher than "gentle moderate" (score under 16) was determined in the controls and patients with CLD in every one of these age gatherings. The frequency was essentially higher in these with CLD than in controls at age 50–59, yet not at age 40–49 years.

Another investigation of Majid et al., 2019 [9] was done on an all out number of 368 patients was considered. Greater part (n = 157, 42.7%) were moderately aged. Around half (n = 201, 54.6%) of the examination members were male. Almost two-fifth of the patients had gotten no proper instruction (39.1%), while the level of individuals who got advanced education was very low, just 5.7% (n = 21) being graduates/post-graduates. About portion of the examination members had some work (n = 198, 53.8%) while the rest were jobless (n = 170, 46.2%).

In the current examination, the mean systolic and diastolic circulatory strain of the contemplated bunch was 117.87±11.32 and 71.54±6.76 mm hg individually while the mean BMI was 29.43±3.54. About 77.75% of the patients were Child a.

Thiele et al., 2013 [10] revealed that 52% of the patients were classed as Child-Pugh class A. The mean Child-Pugh score was 6.9 (SD 1.7; territory 5 to 12).

Moreover, Tapper et al., 2020 [11] detailed that the mean Child-Pugh score was 7.0 (130 [47%] were ClassA, and the normal patient was corpulent (mean weight file was 30.2).

In the current examination, as respect connection between's IIEF score and various boundaries; there was measurably critical positive relationship be tween's degree of Hb and egg whites and IIEF score with higher Hb and egg whites levels were related with higher IIEF scores and negative connection be tween's age, BMI, ALT, AST, and Creat. Urea, level of fibrosis and the complete IIEF score with diminished IIEF score with

more seasoned age, higher BMI and fibrosis evaluation and raised AST, ALT, urea and creatinine.

In examination with the investigation of El-Atrebi et al., 2011[17] which detailed that multivariate examination was performed to investigate the variables freely connected with SD. It incorporated the age, particularly over 40 years [OR 16.106 (95% CI 3.340–77.657)] and phases of liver fibrosis [OR 4.490 (95% CI 0.925–21.798)].

Likewise, Soykan et al., 2005 [12] announced that SD connected with age ($P < 0.07$) and Dove et al., 2009 [13] discovered critical contrast ($P < 0.05$) of SD contrasted with age. This might be on the grounds that Dove et al. remembered more established patients for their investigation (patients' age was somewhere in the range of 18 and 70 years), however in our examination the ages went from 18 to 60 years (mean age 41.4 years).

Another investigation of Paternostro et al., 2018 [14] announced that Child-Pugh score C, MELD, past hepatic decompensation, creatinine, age, blood vessel hypertension, diabetes, low moxie, low BT and expanding HVPG were related with the presence of ED in univariate double relapse examination. In multivariate models, blood vessel hypertension (OR: 6.36 [1.16-34.85]; $P = .033$), diabetes (OR: 7.4 [1.31-41.75]; $P = .023$), expanding MELD score (OR: 1.19 [1.03-1.36]; $P = .015$) and expanding HVPG ($n = 48$; OR: 1.11 [1.002-1.23]; $P = .045$) were autonomous danger factors for the presence of ED.

Additionally, Danoff et al., 2006 [15] and Foster, 2009 [16] announced as per our outcomes solid relationship between sexual brokenness and progressed hepatic fibrosis or cirrhosis. In El-Atrebi et al., 2011 [17] study, more ED was found during Peg-IFN and ribavirin treatment in patients with cutting edge liver fibrosis, and it gave the idea that age was the main factor and progressed liver fibrosis was a significant autonomous co-factor in actuating ED during treatment. Subsequently, one can't guarantee with certainty that the generally high paces of ED in these HCV patients (44% announced moderate to extreme disappointment with their sexual life) were higher than anticipated in men of comparable age and race without liver infection.

5. Conclusion

The current examination showed that there was profoundly genuinely critical connection between the erectile brokenness and the level of fibrosis; subsequently, screening male patients with early popular cirrhosis, particularly whenever joined by comorbidities for ED and offering proper help are required.

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