

Erectile dysfunction in cirrhotic patients in Brazzaville

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Abstract

Objective: to determine the frequency of erectile dysfunction in cirrhotic patients in Brazzaville and to analyze the associated risk factors.

Patients and Methods: We conducted a prospective analytical study over a 7-month period, from April 1 to October 30, 2024, in three hospital centers specialized in the management of cirrhotic patients. All consenting cirrhotic patients aged 18 years and older were included. The variables studied were socio-demographic parameters, clinical and biological characteristics, and erectile dysfunction.

Results: A total of 80 patients were included. The mean age was 49.60 ± 14.45 years, ranging from 24 to 79 years. Among them, 88.75% had decompensated cirrhosis. Erectile dysfunction was found in 85% of patients. Age over 55 years ($p < 0.0104$), a WHO score ≥ 2 ($p < 0.047$), and Child-Pugh class C ($p < 0.006$) were associated with erectile dysfunction.

Conclusion: Erectile dysfunction is common among cirrhotic patients in Brazzaville, highlighting the need for systematic screening for erectile dysfunction in this population.

Keywords: Cirrhosis, Erectile dysfunction, Brazzaville.

Introduction

Cirrhosis is histologically defined by a global disorganization of the liver's architecture, with ring fibrosis delineating clusters of hepatocytes called regenerative nodules [1]. It is a common and serious condition [2]. According to the WHO, the age-standardized mortality rate is 15 years and older per 100,000

inhabitants worldwide. It is the 14th leading cause of death in adults worldwide, with 1.3 million deaths per year globally, 170,000 deaths per year in Europe [3], and 33,539 per year in the USA [4]. In France, the prevalence of cirrhosis varies between 0.3% and 0.6% of the general adult population, representing 200,000 to 400,000 cases [5]. In Africa, it is one of the leading causes of death from disease [6,7]. Mimiesse et al. reported a hospital incidence of 8.7% in 2020 at the Brazzaville University Hospital [8].

The main causes of cirrhosis are hepatitis B and C infections, alcohol misuse, obesity, and heart failure; these conditions are as frequently found in cirrhosis as they are in the occurrence of erectile dysfunction (ED), raising the question of the role of ED in cirrhotic patients [9-11].

Several studies have demonstrated a clearly high prevalence of ED in cirrhotic patients, showing a marked increase in the frequency of ED in correlation with the stage of cirrhosis [12-17]. In Africa, few studies have focused on erectile dysfunction in cirrhotic men. Indeed, in Egypt, Mustapha Ahmed reported an ED incidence of 80% in cirrhotic men [17]. In Congo, studies on erectile dysfunction focus on other populations, such as diabetic patients or those being treated for renal insufficiency. No studies on erectile dysfunction have been conducted in cirrhotic patients. The objective of this study was to determine the frequency of erectile dysfunction in cirrhotic patients in Brazzaville and to analyze the associated risk factors.

It is with this in mind that we proposed to conduct this study, which aims to improve the management of cirrhotic patients with ED.

Patients and Methods

We conducted a cross-sectional and analytical study from April 1st to October 30th, 2024, over a period of seven months. We included all patients aged at least 18 years, diagnosed with cirrhosis for at least 5 years, with a complete biological workup, and who had given their informed consent. Patients who did not consent, those receiving treatment (tadalafil, sildenafil), those being treated for erectile dysfunction, and those receiving treatment likely to cause erectile dysfunction, such as beta-blockers (atenolol, propranolol) and alpha-blockers (terazosin, doxazosin), were excluded from the study. All patients with incomplete data at the end of the study or those who withdrew their informed consent were also excluded. The variables studied included socio-demographic variables, those related to cirrhosis (clinical signs, biological markers, stage), and those related to erectile dysfunction (International Index of Erectile Function-5 [IIEF-5]). Statistical analyses were performed using Epi-info 7.2.5 software.

Results

During our study, we interviewed 98 cirrhotic patients; 18 patients were excluded, and 80 cirrhotic patients were included in the study. The median age of the patients was 45.50 years (P1=38, P3=62.75), and the most represented age group was that of patients aged 36 to 45 years, accounting for 33.75% (n=27) (Table I).

Table 01: Distribution of subjects according to age groups (years)

| | n | % |
|-------|----|-------|
| 18-25 | 1 | 1,25 |
| 26-35 | 12 | 15 |
| 36-45 | 27 | 33,75 |
| 46-55 | 10 | 12,50 |
| 56-65 | 17 | 21,25 |
| >65 | 13 | 16,25 |

The patients mainly came from the Brazzaville University Hospital (53.8%), the Talangaï Regional Hospital (37.4%), and the Central Military Hospital (8.8%).

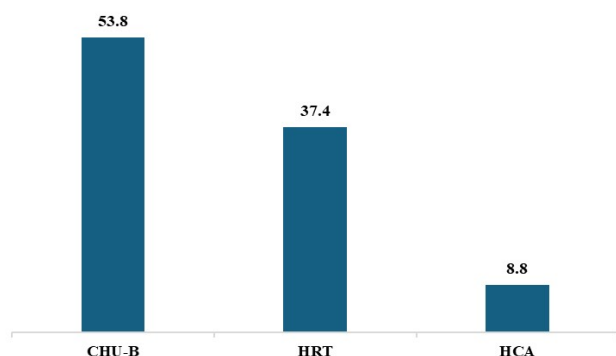


Figure 1: Distribution of subjects according to study location

Only 1.3% of patients had a high socioeconomic status, 37.5% had a medium socioeconomic status, and 61.3% had a low socioeconomic status. Nearly half (47.5%) of the patients were married, 27.5% were in a common-law relationship, 6.3% were widowed, and 18.8% were single.

At the clinic, jaundice and ascites were the predominant clinical signs (91.25%) among the patients, followed respectively by hepatomegaly (75%), collateral venous circulation (55%), splenomegaly (36.25%), palmar erythema (13.75%), and spider angioma (5%), as shown in Table II.

Table II: Distribution of subjects according to clinical variables

| | n | % |
|---------------------------|----|-------|
| JAUNDICE | | |
| Yes | 73 | 91.25 |
| No | 7 | 8.75 |
| STELLAR ANGIOM | | |
| Yes | 4 | 5 |
| No | 76 | 95 |
| PALMARY ERYTHROSIS | | |
| Yes | 11 | 13.75 |
| No | 69 | 86.25 |
| ASCITE | | |
| Yes | 73 | 91.25 |
| No | 7 | 8.75 |
| SPLENOMEGALY | | |
| Yes | 29 | 36.25 |
| No | 51 | 63.75 |
| HVAC | | |
| Yes | 44 | 55 |
| No | 36 | 45 |
| Hepatomegaly | | |
| Yes | 60 | 75 |
| No | 20 | 25 |
| LIVER ATROPHY | | |
| Yes | - | - |
| No | 80 | 100 |

The etiology of cirrhosis was alcohol (17.50%), hepatitis B virus (16.25%) and hepatitis C virus (11.25%).

Table III: Etiologies of cirrhosis

| | n | % |
|----------------|----|-------|
| ALCOHOL | | |
| Yes | 14 | 17.50 |
| No | 66 | 82.50 |
| VHB | | |
| Yes | 13 | 16.25 |
| No | 67 | 83.75 |
| HCV | | |
| Yes | 9 | 11.25 |
| No | 71 | 88.75 |

Diabetes (13.75%) was the most represented comorbidity followed by high blood pressure (5%) and kidney failure (3.75%).

In laboratory tests, anemia was present in 33.75% of patients, and thrombocytopenia in 16.25%. The prothrombin level was below 50% in 30 patients (37.50%), factor V was below 50% in 69 patients (86.25%), and albumin was below 28% in 12 patients (15%) (**Table IV**). The most common electrolyte imbalance was hyponatremia in 34 patients (42.50%), and hypokalemia in 8 patients (10 %).

Table IV : Distribution of patients according to PT, Factor V, serum albumin and bilirubin levels

| | n | % |
|--------------------------|----|-------|
| PROTHROMBIN LEVEL | | |
| ≥ 50% | 50 | 62.50 |
| < 50% | 30 | 37.50 |
| FACTOR V | | |
| ≥ 50% | 11 | 13.75 |
| < 50% | 69 | 86.25 |
| ALBUMINEMIA | | |
| <28 | 12 | 15 |
| 28-35 | 16 | 20 |
| >35 | 52 | 65 |
| Bilirubinemia | | |
| <35 | 43 | 53.75 |
| ≥35 | 37 | 46.25 |

Regarding the classification of the disease, 58 (72.50%) patients were at Child- Pugh stage B, 13 (16.25%) at stage C, and 9 (11.25%) at stage A. For the WHO classification, stage 3 was the most represented with 30 patients or 37.5% (**Tables V and VI**).

Table V: Distribution of patients according to the WHO classification

| | n | % |
|--------------|----|------|
| WHO 1 | 11 | 13.8 |
| WHO 2 | 24 | 30 |
| WHO 3 | 30 | 37.5 |
| WHO 4 | 15 | 18.7 |

Table VI: Distribution of patients according to the Child-Pugh classification

| | n | % |
|----------------|----|-------|
| Stage A | 9 | 11.25 |
| Stage B | 58 | 72.50 |
| Stage C | 13 | 16.25 |

Erectile dysfunction was present in 68 patients, or 85% of the population; and among them 31 (38.8%) had moderate and severe ED , and 6 (7.4%) had mild ED (**Table VII**).

Table VII : Distribution of patients according to the IIFE-5

| | n | % |
|-----------------------------|----|------|
| Normal | 12 | 15 |
| Lightweight | 6 | 7.4 |
| Moderate | 31 | 38.8 |
| Severe | 31 | 38.8 |
| ERECTILE DYSFUNCTION | | |
| Yes | 68 | 85 |
| No | 12 | 15 |

Age over 55 was statistically associated with the occurrence of ED , as well as Child-Pugh stages B and C (Table VIII).

Table VIII: Distribution of patients according to age group, socioeconomic status and erectile dysfunction

| | OF | | OR [IC95%] | p -value |
|------------------|-----------|-----------|--------------------|---------------|
| | Yes n (%) | No n (%) | | |
| AGE GROUP | | | | |
| > 65 years old | 6(46,15) | 7(53,85) | 9.39[1.09-255.98] | 0.0301 |
| 56-65 years old | 9(52,94) | 8(47,06) | 12.38[1.59-320.71] | 0.0104 |
| 46-55 years old | 2(20,00) | 8(80,00) | 2.85 [0.19-95.29] | 0.3954 |
| 35-45 years old | 12(44,44) | 15(55,56) | 9.15[1.29-223.02] | 0.0217 |
| 18-35 years old | 1(7,69) | 12(92,31) | Ref | - |
| SE | | | | |
| Pupil | 1(100) | - | - | 0.1419 |
| AVERAGE | 14(46,67) | 16(53,33) | 1.96 [0.76-5.13] | 0.1533 |
| Down | 15(30,61) | 34(69,39) | Ref | - |

Discussion

The median age of the patients was 45.50 years (P1=38, P3=62.75). This is consistent with data from the African literature, where most authors highlight the occurrence of cirrhosis in young adults [18-20]. Indeed, Malenga Mpaka et al. in the DRC and Driouiche S et al. in Morocco reported a mean age of 51.5 years \pm 13.2 and 54, 24 years [20-21].

The Brazzaville University Hospital (CHU) had the highest patient volume, reflecting the reality in the Democratic Republic of Congo. Indeed, it is the largest healthcare center in terms of capacity and the quality of its technical facilities in the country. The majority of patients in our study population had a low socioeconomic status and a secondary education. This can be explained by the fact that Congo is a middle-income country that has been experiencing economic and social difficulties since 2015.

tively. Among viral hepatitis cases, hepatitis B was the most prevalent. These findings are consistent with those of numerous African authors [22-23].

Ascites and jaundice were the main clinical signs found in 91.25% of cases, followed by hepatomegaly in 75% of patients. Mimiesse et al. in Congo Brazzaville found ascites as the main clinical sign in 83.7% of patients [8]. Mbendi et al. in Kinshasa found similar proportions [24].

Prothrombin levels and factor V were below 50% in 37.5% and 86.5% of patients, respectively. Albumin was below 35 mg in 35% of patients, and bilirubin was above 35 μ mol/L in 46.25%. Only 9 patients in our population had these results, which reflect daily practice in gastroenterology in Africa, where patients are often seen in consultation at advanced stages of cirrhosis. Driouiche S. in Morocco [21] and Ibara Jean Rosaire in Congo [19] found similar proportions.

Viral hepatitis was the leading cause, followed by alcohol, accounting for 27.5% and 17.5% respectively. Several studies have been conducted on erectile dysfunction in Congo, but none have focused on

the specific population of cirrhotic patients in Congo-Brazzaville. In our study, the prevalence of erectile dysfunction was 85%, with 38.8% experiencing severe or moderate ED. Only 7.4% had mild ED. These results corroborate those of Sergio Maimone in Italy [9], Rakesh K. Jagdish in India [25], and Mustapha Ahmed Haridy in Egypt [26], who found prevalence rates of 55.9%, 72.3%, and 80%, respectively. It should be noted that this high prevalence of ED in cirrhotic patients is multifactorial and can be explained by comorbidities, including heart failure, obesity, viral hepatitis B and C, chronic alcoholism, and renal insufficiency, which are as common in cirrhotic patients as they are in patients with ED. In addition to this, there are iatrogenic causes; indeed, certain medications such as non-cardioselective beta-blockers and diuretics have ED as an undesirable effect.

After univariate analysis, erectile dysfunction (ED) was associated with age over 55 ($p<0.0104$). Indeed, according to the literature, advanced age in the general population is recognized as a risk factor for ED. This is physiologically explained by the decline in testosterone with age, but also by the occurrence of geriatric pathologies, especially those with vascular components, the incidence of which increases proportionally with age. It was also associated with a WHO performance status score ≥ 2 ($p<0.047$). Impaired general condition is indeed associated with ED. This is explained by the physical and mental asthenia caused by a decline in general health. In the Child-Pugh score, stage C increased the risk of ED thirteenfold compared to the general population. This was also found by Maimone in Italy [9], where this association was significant ($p<0.006$).

Conclusion

Our study aimed to determine the frequency of erectile dysfunction in cirrhotic patients in Brazzaville and to identify the factors associated with its occurrence. The results show that erectile dysfunction is common among cirrhotic patients in Brazzaville. Age over 55, a WHO performance status score ≥ 2 , and Child-Pugh stage C were significantly associated with the occurrence of erectile dysfunction in cirrhotic patients. These findings should encourage practitioners to systematically screen for erectile dysfunction in cirrhotic patients for comprehensive management.

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