Case Study

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The cost of clinical treatment for decompensated cirrhosis at the university hospital center of Libreville

Abstract

Introduction: The cost of clinical treatment for Decompensated Cirrhosis is unknown in our context while it is fundamental in the therapeutic strategy. The objective of this work was to determine the cost of clinical treatment for Cirrhosis at the University Hospital Center of Libreville.

Patients and methods: This is a retrospective study conducted from May 30, 2016 to September 30th 2018 in the hepato-gastroenterology department at Hospital University Center of Libreville. We included Cirrhotic patients who had at least one episode of decompensation during the study period. The data analyzed were socio-demographic, clinical, prognostic and etiological. The cost of treatment combined the costs of accommodation, additional examinations and treatment. Statistical analysis was performed using StaView SAS software version 5.0.

Results: Decompensated Cirrhosis accounted for 57.7% of hospitalizations. It affected 167 hospitalized patients on average 3.5. There were 102 men and 65 women. The average age was 50years old. 47.3% were unemployed. 11.5% were students, 24.5% were Officials and 16.7% were engaged in various professional activities. Ascites (62.2%) and digestive hemorrhage (53.9%) were the most common modes of decompensation. According to the Child-Pugh classification, 55.7% of patients were classified C. The average length of hospital stay was 21days. The cost of clinical treatment for Cirrhotic Decompensation therefore varied between 685,000 FCFA (1,047 euros) and 1,039,000 FCFA (1,925.9 euros).

Conclusion: Decompensated Cirrhosis is a frequent condition, the leading cause of hospitalization in the hepato-gastroenterology's department. Its clinical management is expensive and occurs in poor patients.

Keywords: decompensated cirrhosis, cost, management, hospital university center of Libreville, cirrhosis, etiology, hepato-gastroenterology

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Introduction

The Cirrhosis is the final stage in the development of chronic liver disease.[1] It corresponds to a chronic necrotico-inflammatory process responsible for mutilating fibrosis and architectural disorganization of the liver with the presence of regeneration nodules.[1–7] It is said to be decompensated when it is in the form of ascites, digestive hemorrhage, jaundice or hepatic encephalopathy. [1–7] The management of Decompensated Cirrhosis, in the absence of liver transplantation requires hospitalization, the search for the decompensation factor and its treatment, the treatment of decompensation and the etiology of cirrhosis. [1–7] The absence of Gabonese data on the cost for decompensated cirrhosis treating led us to carry out this study. The objective was to determine the hospital cost for Decompensated Cirrhosis treating at the University Hospital Center of Libreville.

Patients and methods

This is a retrospective study conducted in the hepato-gastroenterology department at the CHU Libreville between May 30th, 2016 and September 30th, 2018. We included patients with Cirrhosis who presented at least one episode of decompensation during the study period. The data analyzed were socio-demographic (age, sex, professional activity), clinical (ascites, digestive hemorrhage, jaundice, hepatic encephalopathy, prognosis (Child-Pugh score, malignant degeneration, hepatorenal syndrome) and etiological (alcohol, chronic viral hepatitis). The cost related to the treatment corresponded to the sum of the accommodation costs (price per night multiplied by the duration of hospitalization days), the costs of the assessment carried out according to the rates in place at the CHU of Libreville and the treatment costs depending on the type of decompensation. The price per night stay in a standard room was 20,000 FCFA or 30.6 euros. The monthly average of salary in Gabon was 357,000 FCFA or 546.6 euros.

The additional examinations carried out systematically included the hemogram, rhesus blood group, prothrombin level, transaminases, bilirubin, alkaline phosphatases, gamma glutamyl transpeptidase, urea, creatinine, blood ionogram, blood sugar, cytobacteriological examination of urine, HBs antigen, hepatitis C and HIV serologies, abdominal ultrasound, upper digestive endoscopy, the chest x-ray. Depending on the mode of decompensation, the ascites fluid analysis, the hepatitis delta serology in the case of HBsAg positive, blood cultures, 24-hour proteinuria, abdominal and/or cerebral computed

tomography, and electrocardiogram could be performed. Based on the mode of decompensation and the decompensation factor, the treatment included diuretics, antibiotics, proton pump inhibitors, lactulose, beta-blockers, somatostatin analogs, human albumin, ligation of varicose veins esophageal, and transfusion of red blood cells.

The Data collection was done on standardized sheets. Statistical analysis was performed using staview SAS software version 5.0. Statistical significance was brought to the variables whose association with the expected event had a p value less than 0.05.

Results

Among the 1,004 hospitalizations made during the study period, 579 of hospitalizations were the Decompensated Cirrhosis, representing a hospital frequency of 57.7%. These 579 hospitalizations for Decompensated Cirrhosis involved 167 cirrhotic patients hospitalized, on average 3.5 times during the study period. There were 102 men and 65 women, a sex ratio of 1.6. The average age was 50±6years. There were 79 patients without professional activity (47.3%); 41 officials (24.5%); 19 students (11.4%) and 28 who practiced various professional activities (16.8%).

The modes of decompensation were often associated. There was ascites decompensation in 104 patients (62.2%), hemorrhage in 90 patients (53.9%), jaundice in 54 patients (32.3%) and hepatic encephalopathy in 36 patients (21.6 %).

The decompensation factors found were a difference in diet in 60 cases (35.9%), a therapeutic interruption in 51 cases (30.5%), active alcoholism in 37 cases (22.2%), an infection in 36 cases (21.6%), and malignant transformation in 33 cases (19.8%).

The etiologies of Cirrhosis were chronic hepatitis B in 53 cases (31.7%); hepatitis C in 57 cases (34.1%) and chronic alcoholic in 51 cases (30.5%). Six patients (3.6%) had Cirrhosis of non-viral and non-alcoholic etiology.

In terms of prognosis, there were 93 patients (55.7%) who had Cirrhosis classified as Child-Pugh C and 74 patients (44.3%) who Cirrhosis had classified as Child-Pugh B. Cirrhosis was complicated by hepatocellular carcinoma in 33 cases (19.8%), hepatorenal syndrome in 21 cases (12.6%) and ascites fluid infection in 11 cases (6.6%).

The average length of hospital stay was 21days (± 3days). Table I shows the components of the cost of managing decompensation for cirrhosis. The average cost of accommodation was 420,000 FCFA (642.8 euros) for an average hospital stay of 2days. The costs of diagnostic examinations and follow-up were respectively 162,000 FCFA (248 euros) and 62,000 FCFA (94.9 euros). The cost of treatment was respectively 41,000 FCFA (62.5 euros) for hepatic encephalopathy, 180,000 FCFA (275.1 euros) for ascites and 395,000 FCFA (603.8 euros) for digestive hemorrhage. The cost of a Cirrhotic Decompensation hospital treatment therefore varied between 685,000 FCFA (1,047 euros) and 1,260,000 FCFA (1,925.9 euros) (Table 1).

Hospitalization for Decompensated Cirrhosis therefore costs between 1.9 and 3.5 times the average salary at CHU Libreville.

Table 1 Average cost of treatment for decompensated cirrhosis

Sources of expenditure	Cost		
	FCFA	Euros	Ratio for average salary
Accommodation	420,000	642.8	1.2
Diagnostic assessment	162,000	248	0.5
Monitoring report	62,000	94.9	0.2
Treatment	41,000 – 616,000	62.5 – 939.1	0.1 – 1.7
Ascites	180,000	275.1	0.5
Gastrointestinal bleeding	395,000	603.8	1.1
Hepatic encephalopathy	41,000	62.7	0.1
Total expenditure	685,000 – 1,260,000	1047 – 1925.9	1.9 – 3.5

Discussion

Knowing the costs associated with a disease helps to structure the efforts for an effective patient management in regards of clinical treatment.[8] This work by its retrospective character presents limits. However, it allows us to have a precise idea of the expenses associated with the Decompensated Cirrhosis. The Decompensated Cirrhosis was the main indication for hospitalization in our department. Condat et al.,[7] in France, as well as many African authors, found that Decompensated Cirrhosis was the main indication for hospitalization in digestive services.[7–15] The epidemiological profile of the patient with Decompensated Cirrhosis was that of a 50-year-old unemployed man. This profile was similar to the data in the African literature, which found a young man of low social level.[8–15] In our study, ascites was the most common mode of decompensation. This observation was reported both in African studies[8-16] and those carried out in the rest of the world.[1–7] Decompensation factors including deviation from diet (35.9%), therapeutic interruption (30.5%), infection (21.6%) and alcohol consumption (22.2%) were the most common factors promoting the decompensation. Those factors are similar to others African data.[8–15]

This highlights the need for regular patient awareness and education. Etiologically, hepatitis B and C viruses were the most

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common causes of cirrhosis in our series as in the results of African authors.[8-15] The Child-Pugh prognosis score found 58.1% of patients at stage C. Other complications notably hepatocellular carcinoma (19.8%), infection of ascites fluid (6.6%) and syndrome hepatorenal (12.6%) clouded the patients' prognosis. This observation was found among all African authors. [8–15]

The cost of treating decompensated cirrhosis varied between 685,000 FCFA (1,047 euros) and 1,260,000 FCFA (1,925.9 euros) in a country where the average salary is 357,000 FCFA (546.7 euros), this represents 1.9 to 3.5 times the average salary. This cost was difficult to compare to African data due to the variable living costs from one country to another. However, unlike other similar African studies, the accommodation costs were high at the CHUL in Libreville and reached 33.3% to 61.3% of the total cost of hospital treatment.[8–15] These accommodation costs were 1.2 times the average salary. This high cost of accommodation could limit the accessibility for patients in need of clinical treatment. In addition, as reported by Atipo-Ibara et al.,[8] these costs were assessed on the basis of the rates in effect at the CHU of Libreville, when in reality several examinations were carried out in private structures that are more expensive than public hospitals.[8] This underestimates the real costs of managing cirrhotic decompensation.[8]

The gradual establishment of health insurance in Gabon requires knowledge and control of these costs. There for, an additional work on a prospective slope seems essential.

Conclusion

Decompensated cirrhosis is the leading cause of hospitalization in the hepato-gastroenterology department of the CHU Libreville. It is pathology of the poor patient where its hospital care is expensive. The cost of accommodation was the main source of expenditure.

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Conflicts of interest

Author declares that there are no conflicts of interest.

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