
Clinical and Paraclinical Profiles of Patients with Viral Hepatitis C in Cotonou

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To cite this article:

Finangnon Armand Wanvoegbe, Aboudou Raïmi Kpossou, Kouessi Anthelme Agbodande, Cossi Angelo Attinsounon, Corinne Flore Kouam Kamdem, Rodolphe Vignon, Martin Sokpon, Angele Azon-Kouanou, Jean Schonou, Daniel Amoussou-Guenou, Djimon Marcel Zannou.

Clinical and Paraclinical Profiles of Patients with Viral Hepatitis C in Cotonou. *American Journal of Internal Medicine*.

Vol. 11, No. 1, 2023, pp. 12-15. doi: 10.11648/j.ajim.20231101.14

Received: February 2, 2023; **Accepted:** February 28, 2023; **Published:** March 9, 2023

Abstract: Background: Chronic hepatitis C virus (HCV) infection induces the occurrence of severe chronic liver disease and metabolic complications. Our goal was to study the clinical and paraclinical profile of patients with hepatitis C virus at the Natioanl Teaching Hospital Hubert Koutoukou Maga of Cotonou. Methods: This was a cross-sectional and descriptive study conducted at the Teaching Clinic of Hepato-Gastroenterology of the Natioanl Teaching Hospital Hubert Koutoukou Maga of Cotonou with the treated patients, from January 1, 2012, to October 31, 2018. Results: A total of 80 patients with hepatitis C were included in the study. The mean age was 60.2 ± 10.8 years old with extremes of 34 and 84 years. Most of the subjects surveyed were women (62.5%) with a sex ratio of 0.6. Arterial hypertension was the prevalent history in these patients (61.2%). HCV carriage was known for less than 5 years in 70% of cases. The most represented genotype was viral genotype 2 (57.2%). Complications were noted in 47.5% of respondents, dominated by cirrhosis (40%). FibroTest was the main method of non-invasive evaluation of fibrosis. Conclusion: In our study, hepatitis C affects mostly women. It is often diagnosed late. Hence, there is a real need to reinforce awareness.

Keywords: Cirrhosis, Viral Hepatitis C, Cotonou, Benin

1. Introduction

According to the World Health Organization (WHO), in 2015, nearly 71 million people had chronic hepatitis C virus (HCV) infection with an incidence of 1.75 million [1], and an approximate death rate of 399,000 people per year [1]. Seroprevalence is highest in sub-Saharan Africa, Asia, South America, and the Middle East, with the highest prevalence recorded in Egypt (9%) [2]. In Benin, the prevalence was 4.1% among blood donors [3]. Chronic HCV infection induces the development of severe chronic liver disease and metabolic complications even diabetes [4]. Faced with the high

prevalence of this chronic infection by the hepatitis C virus in Benin and the seriousness of its complications, we initiated this study whose aim was to study the clinical and paraclinical profile of patients with hepatitis C virus at the Natioanl Teaching Hospital Hubert Koutoukou Maga of Cotonou.

2. Methods

This was a cross-sectional and descriptive study performed at the Teaching Clinic of Hepato-Gastroenterology of the Natioanl Teaching Hospital Hubert Koutoukou Maga of

Cotonou. The primary population consisted of patients seen in the department during the study period. Patients that were included were treated in the department from January 1, 2012, to October 31, 2018, aged at least 18 years, with proof of positive HCV serology, having given verbal consent to participate in the study. We systematically recruited all HCV patients treated during the study period. Using the admission record, we identified all HCV-positive patients received in the department all along the study period and called them for an interview. During this interview, the patient was informed and educated about the current study.

The collection of data for the study was done in two phases. The first phase consisted of explaining the objective of our survey to obtain the patient's consent. Besides, the second phase was a face-to-face interview with the investigator and the patient to collect socio-demographic data, the results of biological explorations, and clinical parameters when the patient consented.

The data were collected by means of a questionnaire divided into three (03) parts:

- 1) The 1st part is the data collected during the interrogation of the patient,
- 2) The 2nd part refers the data collected during the physical examination of the patient,
- 3) The third part is about the results of biological explorations of HCV (anti-HCV antibody, aminotransferases, viral load, genotype, platelets, and prothrombin count), as well as the result of diabetes screening.

After collection, the data were cleaned, coded, and entered into EPI data 3.1. Analysis was done with SPSS 21 French version and Epi-Info 7.1.0.6. Confidentiality was respected.

3. Results

A total of 80 patients were included in the study.

3.1. Sociodemographic Characteristics

The mean age was 60.2 ± 10.8 years with extremes of 34 and 84 years. Most of the subjects surveyed were women (62.5%) with a sex ratio of 0.6.

Table 1. Distribution of patients by socio-demographic characteristics.

	Frequency	(%)
Age		
18-59 years old	29	36.3
60-84 years old	51	63.7
Sex		
Male	30	37.5
Female	50	62.5
Profession		
Civil servant	12	15
Retired	42	52.5
Shopkeeper	10	12.5
Craftsman	0	0
Accountant	8	10
Other	8	10
Marital status		
Single	5	6.3

	Frequency	(%)
Married	56	70
Divorced	5	6.3
Widowed	14	17.5

3.2. Distribution of Patients According to History and Comorbidities

Hypertension was the most frequent comorbidity in these patients (61.2%).

Table 2. Distribution of patients according to history and comorbidities.

	Frequency	(%)
HTA	49	61.2
Diabetes	20	25.0
Dyslipidemia	9	11.2
Tobacco	0	0
Transfusion	25	31.2
Scarification	64	80
Non-medical circumcision	7	8.7
Surgery	47	58.7

3.3. Circumstances of Discovery

HCV infection was discovered incidentally during any workup in 46/80 patients (57.5%), cytolytic 22 (27.5%), asthenia 6 (7.5%), edemato-ascitic syndrome 4 (5%), blood donation 1 (1.25%), or thrombocytopenia 1 (1.25%).

3.4. Known Duration of Progression of Hepatitis C

As shown in Figure 1, among the HCV patients identified in our study, 70% were diagnosed less than 5 years ago.

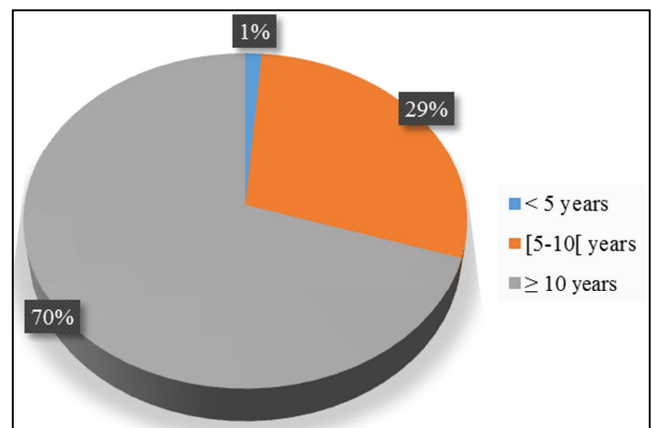


Figure 1. Known duration of hepatitis C disease in these patients.

3.5. Data on Viral Hepatitis C and the Complications

The most significant genotype was viral genotype 2 (57.2%). Complications were noted in 47.5% of the respondents, dominated by cirrhosis (40%).

Table 3. Data on the hepatitis C virus and the complications.

	Frequency	(%)
Viral genotype		
1	34	42.5
2	46	57.5
Presence of complications		

	Frequency	(%)
No	42	52.5
Yes	38	47.5
Types of complications		
Steatosis	12	15.0
Cirrhosis / hepatocarcinoma	32	40.0
Encephalopathy	1	1.25
Ascites	1	1.25
Esophageal varices	5	6.25
Organomegaly	1	1.25
Thrombocytopenia	25	31.2

3.6. Methods of Investigation of Hepatic Fibrosis

FibroTest was the predominant method of non-invasive evaluation of fibrosis (Table 4).

Table 4. Distribution of patients according to the methods of exploration.

	Frequency	(%)
Evaluation method		
Liver biopsy puncture	1	01.2
FibroTest -Actitest	79	98.8
Metavir score A		
A0	20	25.0
A1	18	22.5
A2	18	22.5
A3	24	30.0
F metavir score		
F0	9	11.3
F1	11	13.7
F2	20	25.0
F3	8	10.0
F4	32	40.0

3.7. Co-infections

Hepatitis C and hepatitis B virus co-infection was found in 2.5% of cases (2 patients) and no case of HIV infection was noted in these HCV patients.

4. Discussion

In the study population, the mean age of the patients was 60.2 ± 10.8 years old with extremes of 34 and 84 years. Indeed, our results are similar to those of Kpoussou *et al* in Cotonou in 2016 [5] who found a mean age of 59.3 ± 14.3 years; Kodjoh *et al* in 2014 [6] who found a mean age of 54.6 ± 11.3 years. The patients in our study were older than those of Elhawary *et al* in Egypt in 2011 [7], where the mean age was 41.7 ± 10.6 with extremes of 19-65 years. This could firstly be explained by the fact that in Benin, screening for hepatitis C is done late because the condition is asymptomatic at the beginning and is discovered only after several years of evolution. Secondly, transmission by blood transfusion and by care seems to predominate in our country compared to intravenous drug use described in Western countries. Furthermore, older people had probably been confronted with lower levels of hygiene during care than younger subjects: reused needles, care by non-professionals, and less safe blood products [5].

Most of the respondents were women (62.5%) with a sex ratio of 0.6. The sex ratio of our patients is consistent with

other studies such as Kpoussou *et al* (0.8) in Benin in 2017 [5], Bassit *et al* (0.8) in Morocco in 2014 [8], Simo *et al* (0.38) in 1996 [9], and Ndako *et al* (0.73) in Nigeria in 2009 [10]. Our results are not in line with those of Kodjoh *et al* [6] in Benin in 2014 and Elhawary *et al* in Egypt in 2011 [7] who had noted a male predominance with a sex ratio of 3.6 and 2.5 respectively.

The female predominance of HCV infection in our study could be explained by the fact that in Benin, women have a greater need for health care due to pregnancy, childbirth, and other gynecological problems [5]. In the study by Kodjoh *et al*, this difference may be related to the small size of their study (19 patients) [6]. In Egypt, the male predominance of HCV infection is probably related to the policy of parenteral treatment of schistosomiasis carried out in the past [11], given that schistosomiasis is a male-dominated disease.

Most of the subjects in our study were married 56/80 (70%). This result is like that of Elhawary *et al* in Egypt in 2011 [7] where married subjects represented 78.2%.

According to the level of education, 11 patients (13.8%) had less than high school level. Elhawary *et al* in Egypt in 2011 [7] in their study found 45.7% of subjects with less than secondary education. Thus, in the Egyptian study, the low level of education could have favored the transmission of the virus, which is not found in our work.

Hypertension was the most frequent comorbidity in our patients (61.2%). Kpoussou *et al* [5] found a prevalence of 21.7% for hypertension. This difference could be explained by the small size of our study.

The most common risk factor for HCV transmission in our study was the presence of scarification on the body in 64 patients (80%). This is higher than the rates of scarification reported by Kpoussou *et al* [5] (55.1%), and by Kodjoh *et al* (52.6%) [6].

This predominance among HCV carriers could be explained by the fact that scarification is a skin-breaking procedure and is performed by people who have no training in hygiene during care. It can therefore contribute to HCV transmission, especially when the skin-breaking equipment is reused. In addition, this practice exposes blood and is often accompanied by the application of powder to the lesions without hygienic precautions [5].

A history of blood transfusion was noted in 25 patients (31.25%). Previous surgery was reported in 47 patients (58.75%). Kpoussou *et al* [5] noted a blood transfusion (15.3%) and a history of surgery (35.6%).

HCV infection was discovered incidentally during any workup in 46 patients (57.5%), hepatic cytolysis in 22 (27.5%), asthenia in 6 (7.5%), oedemato-ascitic syndrome in 4 (5%), blood donation in 1 (1.25%), or thrombocytopenia in 1 (1.25%). These results are like those of Kpoussou *et al* [5] who noted that 23% of the patients were discovered after systematic screening, 32.7% by chance discovery, 2.6% discovered following blood donation and 38% were symptomatic.

The most represented genotype was viral genotype 2 in 46 patients (57.5%) and genotype 1 in 34 patients (42.5%). This

is like Kpossou et al [12] who noted a predominance of genotype 2 (68.9%). On the other hand, Chevaliez et al [13] in Benin in 2008 in a study of hemodialysis patients found a predominance of 89.5% of genotype 1, with a prevalence of genotypes 2 and 3 of 5.2%. This difference could be explained by the fact that the Chevaliez study, unlike ours, concerned a particular risk group sharing the same risk of nosocomial transmission. Ray et al [14] in Egypt in 2000 reported a 91% predominance of genotype 4 in patients with HCV. Thus, we note a variability of genotypes according to the country or region, and according to the risk groups studied.

Complications were noted in 38 patients (47.5%), dominated by cirrhosis in 32 patients (40%). These results are like those of Kpossou et al [12] who found 33.6% of patients with cirrhosis and 20.2% with hepatocarcinoma. Our results are lower than those reported by Touiti et al in Morocco in 2009 [15], who found that 84% of the patients who were diagnosed had decompensated cirrhosis.

5. Conclusion

At the end of this study conducted on the clinical and paraclinical profile of patients with hepatitis C virus at the National Teaching Hospital Hubert Koutoukou Maga in Cotonou, we found out that the diagnosis of hepatitis C was late and was made incidentally. Complications were effectively noted in almost half of the patients. This leads us to sensitize health workers for systematic screening, especially in at-risk populations. We therefore recommend that this study be carried out on a larger sample and at the national level.

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