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Jaundice in tropical Africa: Epidemiological, clinical and diagnostic features

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Abstract

Jaundice is a frequent sign in clinical practice, which results in a yellow coloration of the skin, conjunctiva and mucous membranes, caused by hyperbilirubinemia. Jaundice is a sign frequently encountered in hepatology. This study aimed to determine the epidemiological, clinical and diagnostic features of jaundice in a tertiary hospital in tropical africa. Hospital-based cross sectional study conducted between 1st January, 2016 to 31st December, 2017. Patients hospitalised for jaundice, or having presented jaundice during hospitalisation, were included. The hospital frequency of jaundice was 15.92%. The mean age of the patients was 45.07+/-14.29 years [15-95 years], with a male predominance (sex ratio=2.46). Abdominal pain was the main accompanying sign (40.07%) and mean total bilirubin was 124.94+/-123.6 mg/L [7-512 mg/L]. Liver function tests showed cytolysis in 90.9% of patients and cholestasis in 86.06% of patients. Imaging showed biliary tract obstruction in 6.01% of patients. The main etiologies were cirrhosis (51.36%), hepatocarcinoma (29.09%), biliary lithiasis (05.45%), malaria (03.64%), acute hepatonephritis (03.18%), liver metastases (02.73%), cholangiocarcinoma (1.82%), HIV infection (1.82%) and pancreatic cancer (0.91%).

Keywords: Jaundice; Epidemiology; Clinical; Diagnosis; Tropical africa

1. Introduction

Jaundice is a frequent sign in clinical practice, which results in a yellow coloration of the skin, conjunctiva and mucous membranes, caused by hyperbilirubinemia [1]. Jaundice can be physiological or pathological [2]. Hyperbilirubinemia is as a total blood bilirubin value greater than 25 mg/l [3]. Jaundice can be indicative of various pathologies [4]; and its management involves highlighting the pathophysiological mechanism [5]. Jaundice is classified into three categories based on the ratio of direct bilirubin to total bilirubin. The jaundices of pre-hepatic mechanism are characterized by a ratio lower than 20%; jaundice of the hepatocellular mechanism is characterized by a ratio of between 20% and 60%; jaundices of post-hepatic mechanism are characterized by a ratio higher than 60% [6]. The present study was carried out with the aim of determining the epidemiological, clinical and diagnostic aspects of jaundice in the gastroenterology department of Campus University Teaching hospital, Lome (CUTHL).

2. Patients and method

This is a descriptive cross-sectional study with retrospective collection conducted in the hospitalization unit of the gastroenterology department of Campus University Teaching hospital of Lome, between 1st January, 2016 to 31st December, 2017. The patients hospitalized for jaundice or who developed jaundice during hospitalization were included in the study. Epidemiological and clinical characteristics were evaluated alongside the biological findings. Patients were classified into three categories based on the ratio of direct bilirubin to total bilirubin. The morphological assessment included an abdominal ultrasound, or even a CT scan in some cases. Chi Square analysis was used to test for significance using Smith Statistical Package (SSP) version 2.8. The statistical significance was determined at 5% probability (P≤0.05).

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3. Results

Of the 1,570 patients hospitalized during the study period, we included 250 patients, corresponding to a hospital frequency of 15.92%. The average age of patients was 45.07 +/- 14.29 years [15-95 years]. Patients between 50 and 69 years represented 44.75% of our study population. Male subjects represented 70.8% of the patients, with a male-to-female sex ratio of 2.46. We found no statistical relationship between age and sex of patients (p = 0.28). Patient's past medical history was dominated by jaundice (6.12%), alcohol uses (35.71%) and herbal infusions use (53.57%). Symptoms had evolved on average for 63 +/- 82.41 days [0-540 days] before admission. The accompanying symptoms were abdominal pain (40.07%), pruritus (13.60%), fever (15.20%), and darkened urine (26.40%).The mean temperature was 37.34 +/- 0.81 °C [35 °C-40 °C]. Patients presented with a deterioration of the general state (97.87%), edema in the lower limbs (31.6%), hepatomegaly (68.69%). Hepatomegaly was painful in 71.03% of cases, and associated with portal hypertension in 76% of cases. Two patients (0.8%) had a large gallbladder. The mean of total bilirubinemia was 124.94 +/- 123.6 mg / l [7-512 mg / l]. Direct hyperbilirubinemia was found in 74.74% of the cases. The hepatic assessment noted a cytolysis in 90.9% of the patients, and a cholestasis in 86.06% of the patients. Jaundice mechanism was post hepatic in 41% of patients, and hepatocellular in 56% of cases (Table 1). Imaging revealed obstruction of the bile ducts in 6.01% of patients. This bile duct obstruction was more observed in female patients, with a significant statistical difference (p = 0.005).

Table 1 Mechanisms of jaundice

	No of patients	Percent
Pre-hepatic	2	2,02
Hepatocellular	56	56,57
Post-hepatic	41	41,41

Tables 2 showed the etiologies of jaundice. The causes of hepatocellular jaundice were cirrhosis (51.36%), hepatocellular carcinoma (29.09%), acute hepatonephritis (03.18%), hepatic metastases (02.73%), cholangiocarcinoma (1.82%), HIV infection (1.82%). The causes of post-hepatic jaundice were represented by cholelithiasis (5.45%) and cancer of pancreas head (0.91%).

Table 2 Etiologies of hepatic and post-hepatic jaundice

Etiologies	No of patients	Percent
Cirrhosis	98	52,12
Hepatocellular carcinoma	57	30,32
Gallstones	11	5,85
Hepatonephritis	8	4,25
Liver metastases	7	3,72
Cholangiocarcinoma	4	2,12
HIV infection	4	2,12
Pancreatic cancer	2	1,06

Unconjugated bilirubin jaundice (pre-hepatic mechanism) was associated with hemolytic anemia. The etiology of these jaundices was malaria (03.64%).

4. Discussion

Our study focused exclusively on patients hospitalized in the gastroenterology department; the other departments, in particular those of pediatrics and hematology were not concerned.

We have reported a hospital prevalence of 15.92%. However, this prevalence does not take into account all cases of jaundice because patients hospitalized in other departments were not included.

The average age of the patients was 45.07 +/- 14.29 years, with a male predominance. The 50 to 69 age group was the most represented. These results confirm those found in the literature according to which, jaundice is more frequent in male sex, and elderly patients [7, 8]. This can be explained by the fact that the main causes found (abdominal tumors, chronic hepatopathies) are more encountered in the elderly male subject [8]. However Khurram [9] and Channa[10], reported a predominance of women in their study, due to the high prevalence of gallstones which are more frequent in women. Jaundice had evolved on average 63 days before admission, compared with 16 days in Chalya et al in Tanzania [11]. This delay is related to the mode of installation and the evolution of the symptomatology; patients consult when the jaundice is associated with other signs [12]. In our study, abdominal pain was associated with jaundice in 40.07% of cases. This result is similar to those found in Chinese literature [12] which reports as main accompanying sign pain localized most often in the right hypochondrium, rarely in the epigastrium, reminiscent of acute pancreatitis.

The clinical examination of our patients essentially found an impairment of the general condition (97.87%), a large painful liver (68.69%) and ascites (38%). These clinical signs are explained by the predominance of chronic liver disease and abdominal tumours [11].

The hepatic assessment had found hepatic cytolysis (90.9%) and cholestasis (86.6%). This high frequency of hepatic cytolysis was also found by Chalya in Tanzania [11]. These results are explained by the large proportion of hepatobiliary diseases in our series. Most of the patients (97%) had jaundice related to liver or biliary involvement. These results can be explained by the low proportion of pre-hepatic jaundice in our study, in contrast to studies found in the literature [11, 12, 13 and 14], which included patients hospitalized in different departments.

Malignant abdominal tumors and obstructions of the bile ducts were the leading causes of jaundice in our patients, as was the case in the literature [13, 15]. Gallstones were statistically more common in women (p = 0.005), as in the study by Gameraddin et al in Sudan [12]. The primary cause of jaundice was cirrhosis (51.36%), followed by digestive cancers (liver cancers, cholangiocarcinomas, pancreatic cancer). These data differ from those reported in other studies [9, 13] where digestive cancers were the leading cause of jaundice in adults. However, Whitehead et al [7] found in 20.7% cirrhosis as an etiology; Bekele et al [14] reported primary choleliasis as the primary etiology. We believe that in our study, the majority of jaundice is related to encounter hepatitis (viral or toxic) in cirrhotic patients. The first cancer involved in our study was hepatocellular carcinoma, contrary to the data found in the literature [13, 15] where the most frequent causes were pancreatic head cancer and cholangiocarcinomas. This difference can be explained by the high prevalence of chronic infections due to viral hepatitis B and C in the sub-Saharan region. Malaria was the only etiology of unconjugated bilirubin jaundice found in our study, which is explained by the fact that the other causes of these jaundices (hemoglobinopathy) were directed towards internal medicine or hematology.

5. Conclusion

Jaundice is a sign frequently encountered in hepatology. Adults, men and the elderly patients are the most affected. Abdominal pain is often associated with symptomatology. Cirrhosis, hepatocellular carcinoma, gallstones and malaria are the main etiologies.

Compliance with ethical standards

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