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Assessment of health-related quality of life and related factors in patients with chronic liver disease

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ABSTRACT

Background and objectives: Assessing health-related quality of life is an important aspect of clinical practice. Thus, the present study attempts to assess the health-related quality of life of patients with chronic liver disease.
Methods: A cross-sectional survey was conducted on 133 chronic liver disease patients, using three instruments: a demographic questionnaire, the Chronic Liver Disease Questionnaire, and Model for End-Stage Liver Disease index. Variables were expressed as frequencies, percentages, means, and standard deviations. The statistical analysis included Pearson's correlation, Student's *t*-test, and analysis of variance ($p < 0.05$ was considered significant).
Results: The mean age of included subjects was 50.5 ± 13.3 years. The majority were male (66.2%), Caucasian (70.7%), and had a family income of US$329–US$658.2. Over half of the patients (56.4%) were infected by hepatitis C virus and 93.2% had low Model for End-Stage Liver Disease scores. Model for End-Stage Liver Disease score was related to age ($r = 0.185$; $p = 0.033$). Higher mean Chronic Liver Disease Questionnaire scores were obtained for emotional function (39.70/SD ± 12.98) and while lower scores were obtained for abdominal symptoms (16.00/SD ± 6.25). Fifty-two patients (39.1%) presented overall low (<5) Chronic Liver Disease Questionnaire scores. Furthermore, Chronic Liver Disease Questionnaire score was related to family income ($r = 0.187$, $p = 0.031$).
Conclusion: Most individuals presented high mean Chronic Liver Disease Questionnaire scores, indicating low health-related quality of life, especially individuals with low family income.

Introduction

Chronic diseases in general are increasingly widespread,[1] and diseases of the liver in particular are considered a global public health problem.[2] Chronic liver disease (CLD) substantially contributes to mortality and morbidity rates.[3,4] Worldwide, about 500 million individuals have CLD with a viral etiology.[5] However, CLD also has non-viral etiology including alcoholic hepatitis, fatty liver, autoimmune

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hepatitis, cryptogenic hepatitis, and other unidentified causes.

Over the last few decades, assessing quality of life (QoL) of individuals with diseases has become common clinical practice,[6,7] as a consequence of increased survival of patients with chronic diseases.[8] The term health-related quality of life (HRQoL) reflects the impact of the disease upon a person's quality of life. It is a subjective, multidimensional concept addressing various aspects of the individuals' life such as age, gender, socioeconomic status, and type of illness, and treatment,[9] that should be considered during patient evaluation.[10]

CLD has a negative impact on HRQoL since patients often present asthenia, indisposition, abdominal, muscle, and/or joint pain or discomfort, lack of appetite, insomnia, and complications related to liver cirrhosis, such as ascites, variceal bleeding in the stomach and esophagus, and hepatic encephalopathy. Moreover, CLD is linked to job loss, impaired functioning, mood swings, anxiety, low self-esteem, depression, and other emotional problems that severely affect QoL and well-being.[11–15]

Globally, studies on HRQoL of patients with CLD have used generic and specific instruments.[16,17] Recently, a Japanese version of the Chronic Liver Disease Questionnaire (CLDQ) to assess HRQoL was validated in patients with chronic viral hepatitis.[18] To the best of our knowledge, this is the first study that assesses the HRQoL of Brazilian patients with CLD using a specific instrument that has been recently translated and validated for this population.[19]

Methods

Patients

Patients with CLD referred to the Outpatient Clinic of CLD at Hospital das Clinicas of the Federal University of Uberlândia, Minas Gerais State, Brazil in the period of 2011–2012 were recruited for the study. Patients of either gender had be 18 years or more and have a diagnosis of CLD by a hepatologist.

The diagnosis of chronic hepatitis B virus (HBV) infection was based on the presence of hepatitis B surface antigen for more than six months and elevated serum alanine aminotransferase levels with or without HBV DNA, detected by real-time polymerase chain reactions (PCR).[20]

Chronic hepatitis C virus (HCV) infection was diagnosed based on the presence of hepatitis C antibodies for more than six months assessed by ELISA III and HCV RNA by qualitative polymerase chain reaction and elevated serum alanine aminotransferase levels.[21]

Primary biliary cirrhosis was diagnosed based on positive anti-mitochondrial antibodies (AMA) and elevated liver enzymes with or without liver biopsy.[22] Alcohol was deemed the cause of chronic liver disease if daily alcohol consumption was greater than 40 g for at least 10 years with elevated γ-glutamyl transferase when controlling for other liver diseases.[23]

Autoimmune hepatitis diagnosis was based on simplified diagnostic criteria for routine clinical practice including age, sex, autoantibodies [smooth muscle actin (SMA), anti-nuclear antibody (ANA), AMA, liver-kidney microsomal antibodies (LKM), soluble liver/liver-pancreas antibodies (SLA/LP)], γ-globulins, immunoglobulin A, immunoglobulin G (IgG), immunoglobulin M (IgM), absence of viral hepatitis, and liver histology.[24]

Diagnosis of nonalcoholic fatty liver disease (NAFLD) was based in the evidence of hepatic steatosis, either by imaging or histology, controlling for other causes of secondary hepatic fat accumulation such as significant alcohol consumption, steatogenic medication, or hereditary disorders.[25] Cryptogenic chronic hepatitis was diagnosed if the patient presented with persistent inflammation of the liver, unexplained by conventional clinical, laboratory, and histological methods.[26]

Liver cirrhosis diagnosis was based on clinical, biochemical, serologic, and radiographic parameters and ultrasonography.[27] Cirrhosis without a diagnosis of the etiology was termed "other forms of cirrhosis or unspecified cirrhosis".

Exclusion criteria were presence of malignancy, liver transplantation, co-infection with human immunodeficiency virus (HIV), psychiatric or emotional problems, cognitive or language difficulties that prevented the reliable application of the questionnaire, and a diagnosis of hepatic encephalopathy.[6] The study was conducted in accordance with the Helsinki Declaration and study protocols were approved by local ethics committees. All patients provided informed consent before enrollment.

A pilot study to verify the applicability of these instruments was first conducted on 23 individuals with the same population characteristics. These patients were not included in the final sample.

Data collection

The investigators informed patients about the study aims. After obtaining informed consent, participants completed a socio-demographic questionnaire and the CLDQ.

The CLDQ has recently been translated and validated for the Brazilian population.[18] This instrument was developed by Yonossi et al. in 1999 to assess QoL of patients with liver diseases.[6] The CLDQ is the only validated instrument for the different etiologies and degrees of severity of liver disease. It yields both domains and total scores, demonstrating both multidimensional and overall perception of QoL, emphasizing the effects of liver disease symptoms. The Brazilian version comprises 29 questions encompassing six domains: Abdominal Symptoms (AS), Fatigue (FA), Systemic Symptoms (SS), Activity (AT), Emotional Function (EM), and Worry (WR). AS and AT domains have 3 items each; FA, SS, and WR have 5 items each; whereas EM comprises 8 items. Each item is rated on a 7-point Likert scale.[28] Higher score on the questionnaire is indicative of minimum symptoms and lower score indicates more pronounced symptoms. A CLDQ cut-off score was determined to evaluate HRQoL based on prior literature; mean CLDQ scores $\geq$5 was considered to represent high HRQoL and mean CLDQ scores <5 implied low HRQoL.[29]

The Model for End-Stage Liver Disease (MELD) index—a mathematical model that uses three laboratory tests (values of serum creatinine, serum total bilirubin, and international