



Contents lists available at UGC-CARE

International Journal of Pharmaceutical Sciences and Drug Research

[ISSN: 0975-248X; CODEN (USA): IJPSPP]

Available online at www.ijpsdronline.com

Case Study

Never Before Exposed: *Borassus flabellifer's* Shadow on Liver Health

Harshil Gadhiya*, Riddhi Shingala, Dhirangi Gajipara, Yash Radhanpura, Pravin Tirgar

Department of Pharmacology, School of Pharmacy, RK University, Rajkot, Gujarat, India.

ARTICLE INFO

Article history:

Received: 23 February, 2024

Revised: 12 March, 2024

Accepted: 15 March, 2024

Published: 30 March, 2024

Keywords:

Liver cirrhosis, Liver encephalopathy, *Borassus flabellifer*, Palm tree.

DOI:

10.25004/IJPSDR.2024.160223

ABSTRACT

The last stage of many hepatic diseases, including hepatitis, is cirrhosis. The liver's vital function in detoxifying xenobiotics such as medications and toxic composites is the subject of much research. Liver cirrhosis is the cause of alterations in the liver's architecture that mostly affect protein binding, blood circulation, and the enzymes that break down medicinal substances. The main reason therapeutic metabolizing enzymes disappear is liver towel loss. However, not all enzyme activity is decreased in tandem; some are only changed in one specific case. This case report focuses on the clinical features, diagnostic evaluation, and therapeutic concerns of a patient having liver cirrhosis. Further research and advancements in our comprehension of the pathogenesis and treatment of cirrhosis are necessary in order to enhance outcomes and minimize the burden of this illness on those who are impacted.

INTRODUCTION

For several centuries, the word "cirrhosis" has been used to describe the last phase of a chronic liver disease with various etiologies. Excessive portal venous pressure is linked to analytical manifestations of cirrhosis, and liver insufficiency progresses towards progressive liver failure and evaluates into cancerous hepatoma in conditions with an unfavorable prognosis.^[1] However, recent advancements in the diagnosis and treatment of liver diseases associated with addiction have significantly reduced the underlying incidence of cirrhosis. End-stage liver failure is conceptualized as a multifaceted, diverse illness with no clear prognosis. Based on several case studies that propose the eradication of current fibrosis and cirrhosis after the end of unrelenting damage, cirrhosis is portrayed as a significant, two-phase process.^[2]

The pattern of irregular nodules in the hepatic parenchyma, surrounded by a stringy partition that is thought to be the result of chronic liver damage, is indicative of liver cirrhosis. Hepatic cell death brought on by cirrhosis also

causes fibrosis and the formation of clots. The liver's atypically flatter form causes hepatic blood circulation to be hampered, which in turn causes hepatopulmonary syndrome and weak liver cell activity. Histological studies, transient elastography, radiological methods such as computerized tomography (CT), MR, and ultrasound, and serological testing are all used in the identification of cirrhosis. Ursodeoxycholic acid is a drug used to treat primary cirrhosis of the liver.^[3] Prednisone with azathioprine is used in the treatment of autoimmune hepatitis. Treatment for hepatitis B and C involves the use of interferon and antiviral medications. Phlebotomy is used as a treatment for hemochromatosis patients. Zinc and trientine are used in the treatment of Wilson's illness. The most effective treatment for liver cirrhosis is liver transplantation, although this is a last resort.^[4]

Case Report

A 60-year-old male named Mr. GR manifested complaints of yellowish discoloration of the sclera, often low blood pressure, distention for 15 days, bilateral pedal edema,

*Corresponding Author: Mr. Harshil Gadhiya

Address: Department of Pharmacology, School of Pharmacy, RK University, Rajkot, Gujarat, India.

Email ✉: harshilgadhiya2812@gmail.com

Tel.: +91-9429888050

Relevant conflicts of interest/financial disclosures: The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

© The Author(s) 2024. **Open Access.** This article is licensed under a Creative Commons Attribution 4.0 International License, which permits use, sharing, adaptation, distribution and reproduction in any medium or format, as long as you give appropriate credit to the original author(s) and the source, provide a link to the Creative Commons licence, and indicate if changes were made. The images or other third party material in this article are included in the article's Creative Commons licence, unless indicated otherwise in a credit line to the material. If material is not included in the article's Creative Commons licence and your intended use is not permitted by statutory regulation or exceeds the permitted use, you will need to obtain permission directly from the copyright holder. To view a copy of this licence, visit <https://creativecommons.org/licenses/by/4.0/>

dropped urine output, altered sensorium, and P/A distension.

With a history of diabetes dating back 25 years and a social history of consuming alcohol dating back 10 years, the patient has had a severe addiction to the roots of a palm tree (tad plant) for one year.

Diagnosis

On examination, the patient was conscious and oriented, with severe pain due to ascites, an increased BSL (189 mg/dl), and an increased abdominal girth of 104 cm. As per the biochemical investigation, the report was marked with increased S. urea (103 mg/dL), increased S. creatinine (11.38 mg/dL), dropped S. sodium (132 mmol/L), dropped S. potassium (2.95 mmol/L), dropped noradrenaline (2.5 pg/mL), increased serum glutamic pyruvic transaminase (SGPT) (88.0 µL), and increased serum glutamic oxaloacetic transaminase (SGOT) (187.0 µL).

USG abdomen and pelvis

Findings show cirrhosis of the liver with moderate ascites.

ECG

Prolonged QT interval and ST-T abnormality

Treatment

During hospitalizations, the patient was treated with the tablet midodrine (Alpha Adrenergic Agonist): 2.5 mg TDS for boosting blood pressure; tablet rifaximin: 550 mg BD; Injection vit. K: 1-mg OD; Injection norepinephrine: 4 mg; Injection enoxaparin: 40 mg BD SC; and injection Edito: 1 ML TDS.

DISCUSSION

Despite the fact that certain medicinal plants had scientific backing, the application of these plants for traditional medicine remained poorly understood. Examining the roots of *Borassus flabellifer* & its numerous parts that were used for food and therapeutic purposes, the current study did so from this perspective. However, not much scientific investigation has been done on *B. flabellifer*'s ancestry. The phytochemical examination of numerous compounds from *B. flabellifer* indicated the existence of several botanical compound elements, including steroids, phenols as well as alkaloid compounds and carbohydrates et., in other sections, as described in the phytochemical studies of fruits with roots' ethanolic solution.^[5] Most new therapeutic compounds still come from medical herbs; they include compounds with fewer side effects, reduced prices, acceptance by patients, and plants that can be farmed without damaging the environment. Our previous research demonstrates that the roots of *B. flabellifer* contain a variety of bioactive chemicals with a range of biological activities, including hepatoprotective, antibacterial, and antioxidant properties. Antioxidant and

hepatoprotective qualities, despite drug-induced liver damage, were plausible theories. Additionally, *B. flabellifer* root extracts exhibited anti-tuberculosis capabilities. However, the results of this study suggest that more research be done on additional medicinal plants that are used in conventional healthcare and nutrition.^[6]

Cirrhosis arises from chronic liver diseases and is a multifactorial and complex sickness. Its characteristic features include the occurrence of fibrosis or regenerative nodules, which result in impaired function of the liver, hypertension of the portal vein, and other clinical signs. Changes in blood flow, binding of proteins, and drug-metabolizing enzymes brought on by cirrhosis significantly affect how medications are metabolized and eliminated from the body. As such, the dosage needs to be carefully modified, particularly in cases of severe liver disease.^[7]

A combination of histology, imaging, and serological tests are performed to diagnose cirrhosis.^[8]

Treatment options include various medications, lifestyle modifications, and, in extreme cases, liver transplants based on the underlying reason. Recent advancements in the knowledge and treatment of cirrhosis have improved patient outcomes, underscoring the significance of early identification and efficient management. In this case, viral hepatitis was ruled out as the primary cause of cirrhosis by serological tests. Ultrasound imaging confirmed the presence of liver cirrhosis and moderate ascites, two conditions that are commonly observed in the late stages of the illness. The extended QT interval and aberrant ST-T readings on the ECG might indicate heart issues related to cirrhosis.^[9]

CONCLUSION

The case report highlights the liver cirrhosis of the patient, along with additional clinical signs and test data. The individual has a past medical history of diabetes, drinking, smoking, and utilizing the roots of the palm tree (*B. flabellifer*). The start and progression of liver cirrhosis were probably affected by these factors. The case study highlights the importance of a comprehensive approach to liver cirrhosis diagnosis and therapy. Treatment therapy should concentrate on controlling complications such as ascites, imbalances in electrolytes, or liver encephalopathy, in addition to addressing the original cause.

REFERENCES

1. Elbekai RH, Korashy HM, El-Kadi AO. The effect of liver cirrhosis on the regulation and expression of drug metabolizing enzymes. *Current drug metabolism*. 2004 Apr 1;5(2):157-67. Available from: doi.org/10.2174/1389200043489054
2. Tsochatzis EA, Bosch J, Burroughs AK. Liver cirrhosis. *The Lancet*. 2014 May 17;383(9930):1749-61. Available from: doi.org/10.1016/S0140-6736(14)60121-5
3. Ginès P, Krag A, Abraldes JG, Solà E, Fabrellas N, Kamath PS. Liver cirrhosis. *The Lancet*. 2021 Oct 9;398(10308):1359-76. Available from: doi.org/10.1016/S0140-6736(21)01374-X



4. Ardizzone G, Arrigo A, Schellino MM, Stratta C, Valzan S, Skurzak S, Andruetto P, Panio A, Ballaris MA, Lavezzo B, Salizzoni M. Neurological complications of liver cirrhosis and orthotopic liver transplant. In Transplantation proceedings 2006 Apr 1 (Vol. 38, No. 3, pp. 789-792). Elsevier. Available from: doi.org/10.1016/j.transproceed.2006.01.039
5. Jerry A. A comprehensive review on the medicinal properties of *Borassus flabellifer*. Journal of Academia and Industrial Research. 2018 Dec;7(7):93-7.
6. Krishnaveni TR, Arunachalam R, Chandrakumar M, Parthasarathi G, Nisha R. Potential review on palmyra (*Borassus flabellifer* L.). Advances in Research. 2020 Aug 4;21(9):29-40. Available from: doi.org/10.9734/air/2020/v21i930229
7. Poordad FF. Presentation and complications associated with cirrhosis of the liver. Current medical research and opinion. 2015 May 4;31(5):925-37. Available from: doi.org/10.1185/03007995.2015.1021905
8. Prieto O JE, Sánchez P S, Prieto O RG, Rojas D EL, González L, Mendivelso F. Clinical Characteristics and Decompensation in Patients with Liver Cirrhosis Treated at Two Hepatology Centers in Bogota DC from 2010 To 2014. Revista colombiana de Gastroenterología. 2016 Jan;31(1):1-8. Available from: doi.org/10.22516/25007440.66
9. Ge PS, Runyon BA. Treatment of patients with cirrhosis. New England Journal of Medicine. 2016 Aug 25;375(8):767-77 Available from: doi.org/10.1056/nejmra1504367

HOW TO CITE THIS ARTICLE: Gadhiya H, Shingala R, Gajipara D, Radhanpura Y, Tirgar P. Never Before Exposed: *Borassus flabellifer*'s Shadow on Liver Health. Int. J. Pharm. Sci. Drug Res. 2024;16(2):299-301. **DOI:** 10.25004/IJPSDR.2024.160223