



**INTERNATIONAL JOURNAL OF  
PHARMACEUTICAL SCIENCES**  
[ISSN: 0975-4725; CODEN(USA):IJPS00]  
Journal Homepage: <https://www.ijpsjournal.com>



## Case Study

# Ayurvedic Herbal Product Induced Liver Injury: A Case Report

Sreelekshmy B. S.<sup>1</sup>, Ranjana S. R.<sup>2</sup>, Shaiju S. Dharan<sup>4</sup>, Dhanya Dharman\*<sup>3</sup>

<sup>1,2</sup> Pharm D Intern (Department of Pharmacy Practice, Ezhuthachan College of Pharmaceutical Sciences, Marayamuttom, Neyyattinkara, Thiruvananthapuram, Kerala, India)

<sup>3</sup> Associate Professor, (Department of Pharmacy Practice, Ezhuthachan College of Pharmaceutical Sciences, Marayamuttom, Neyyattinkara, Thiruvananthapuram, Kerala, India)

<sup>4</sup> Principal/ HOD (Department of Pharmacy Practice, Ezhuthachan College of Pharmaceutical Sciences, Marayamuttom, Neyyattinkara, Thiruvananthapuram, Kerala, India)

## ARTICLE INFO

Received: 06 March 2024

Accepted: 10 March 2024

Published: 14 March 2024

### Keywords:

Drug induced liver injury,  
Ayurveda medicine,  
hepatotoxicity, hepatitis,  
MRCP

### DOI:

10.5281/zenodo.10815176

## ABSTRACT

### Background:

Ayurveda is one of the traditional medicinal systems. Ayurveda formulations are based on plants, animal extract and minerals. There are 21 varieties of Ayurveda formulations. Ayurvedic compound formulations are mainly divided into two groups; Kasthausadhi (predominantly plant drugs) and Rasausadhi (predominantly metals and minerals). These are manufactured by using classical texts of Ayurveda; Charak Samhita or Susrut Samhita. Drug induced liver injury (DILI) that may occur due to consuming certain medicines. It is an acute or chronic response to a natural or manufactured compound. Most cases of DILI are benign and improve after drug withdrawal. In worldwide, the estimated annual incidence rate of drug induced liver injury is 13.9-24.0 per 100,000 population. DILI is one of the leading cause of acute liver failure. Now a days Ayurveda medicines have been linked to liver injury. Certain Ayurveda medications are commonly used without full knowledge of their side effects. The primary management of DILI is avoid the offending agent and started the hepatoprotective agents.

### Case Presentation:

In this case study, A 72 year old male patient was presented with complaints of generalized pruritus for 3 days, decreased appetite and high colored urine for 1 day. Medical history of arthritis on Ayurveda medication (appropriate 1 month). His LFT showed hyperbilirubinemia. USG abdomen showed mild central IHBRD and contracted GB. In view of history of Ayurveda medicine intake, drug induced liver injury was suspected and he had started liver supportive medications. MRI abdomen only showed features of acute hepatitis. Offending agent was stopped and started hepatoprotective

\*Corresponding Author: Dhanya Dharman

Address: Associate Professor, (Department of Pharmacy Practice, Ezhuthachan College of Pharmaceutical Sciences, Marayamuttom, Neyyattinkara, Thiruvananthapuram, Kerala, India)

Email ✉: [dhanyadharman07@gmail.com](mailto:dhanyadharman07@gmail.com)

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.



He had severe pruritus and there was no reduction in bilirubin on serial monitoring, hence he was started with steroid.

### **Conclusion:**

This case points out the drug induced liver injury with details of symptoms. Clinical presentation, management and patient outcome. Most of the Ayurveda medicines cause liver disorders. Knowledge and type of liver injury is also important for the treatment decisions and follow-up.

### **INTRODUCTION**

Ayurveda is traditionally skillful and treating liver diseases since centuries and the drug toxicity appears to be less as compared to modern medicine. Currently available ayurvedic medicines for liver disorders have more systemic toxicity (1). Ayurveda medicines have been linked to liver injury. Some of the ayurvedic medicines are commonly used without full knowledge of their side effects (2). Ayurveda has been using to treat several liver ailments, but its efficiency is poorly documented by means of scientific studies. High number of ayurvedic liver tonics has been prescribing for chronic liver diseases (1). There are many plants and their extracts that have been shown to possess hepato-protective activities (3). Drug induced liver injury (DILI) is an adverse reaction to drugs or other xenobiotics that occurs either predictable or unpredictable event (4). Most cases of DILI are benign, and improve after drug withdrawal. It is important to recognize and remove the offending agent as quickly as possible to prevent the progression to chronic liver disease and/or acute liver failure (5). It is a frequent cause of hepatic dysfunction (6). Drug induced liver injury may be difficult to diagnosis. The liver biopsy is frequently used as an adjunct diagnostic test in the evaluation of drug-induced liver injury (DILI). A biopsy may be performed to confirm the diagnosis (7). There are more than three hundred herbo-mineral preparations in Indian system of

medicine for the treatment of jaundice and chronic liver diseases. More than 50% people of our country rely on Ayurveda and herbal medicine for liver diseases. Undoubtedly Ayurveda herbs and products having denied biochemical active component can protect liver from oxidative stress, promote virus elimination, block fibrogenesis, anti-inflammatory, immune-modulating, liver regenerating and inhibit tumor growth in vitro and in vivo studies (8).

### **CASE REPORT:**

A 72 year old male patient presented to the ED for 3 days of generalized pruritus, high colored urine associated with poor appetite and altered bowel habits He had a history of arthritis and he began to use Ayurveda medications, but reportedly stopped taking them after he noticed the pruritus. Patient had complaints of severe itching and no history of any other comorbidities. General examination revealed conscious, oriented andafebrile. His initial routine labs revealed normal blood counts and normal renal function. Liver function showed hyperbilirubinemia and raised ALP (540U/L), AST (203U/L), ALT (226 U/L). Other investigations like serum amylase (275 U/L), lipase (2221IU/L), ferritin (>1000 ng/ml). His USG abdomen showed mild central IHBRD and contracted GB. In view of history of Ayurveda medicine intake, drug induced liver injury was suspected and he had started liver supportive medications. Repeated LFT showed marginal improvement in liver enzymes. An USG abdomen was repeated after 3 days to assess the previous reports of IHBRD and the sonology finding were similar to the past. An MRI abdomen with 3T MR – Cholangiopancreatogram (MRCP) was done to rule out biliary pathology but it showed only features of acute hepatitis. HAV and HCV were negative. Ortho opinion was sought for arthralgia, but patient was not willing for further evaluation. The patient was diagnosed as Ayurveda medication induced liver injury. Initially the



patient was started with Hepatoprotective agents (T. URSODEOXYCHOLIC ACID 150mg P/O BD), T. HEPTAGON (Nutritional supplement P/O OD), Antihistamins(T. CETIRIZINE 10 mg P/O HS), Proton Pump Inhibitors (T.RABEPRAZOLE 20mg IV 1-0-1) and multivitamin drug (C. BECOSULE Z P/O OD).Patient had severe pruritus and there was no reduction in bilirubin on serial monitoring, hence he was started with steroid (T. PREDNISOLONE 30mg P/O OD). Patient requested for discharge; hence he was discharged with advice. Patient had hospitalized for 10 days and finally the patient got symptomatically improved and discharged. Patient was reviewed after 5 days; he was symptomatically better but his bilirubin level was not reduced on serial monitoring.

#### **DISCUSSION:**

Drug induced liver injury (DILI) can be predictable or unpredictable caused by OTC, prescribed medication, dietary supplement or herbs. The liver biopsy is considered as the standard diagnostic test. In this case, 3T MR-Cholangiopancreatogram showed no abnormalities. LFT showed hyperbilirubinemia and raised ALP levels.USG abdomen showed mild central IHBRD and contracted GB.MRI abdomen only showed features of acute hepatitis. Initially to stop the offending agent and started with Hepatoprotective agents. Patient had severe pruritus and started with steroid. He had hospitalized for 11 days and Patient requested for discharge, hence he was discharged. Some of the studies declared that the use of Ayurveda medicines may cause liver problems. So, we can't thoroughly state that Ayurveda medicine can induce liver disorder. Because it is unique to each individual. The main objective is to avoid the causative agent and start with hepatoprotective agents.

#### **CONCLUSION:**

Finally, he was diagnosed as Drug induced liver injury. Patient was reviewed after 5 days and symptomatically better but his bilirubin level was not reduced on serial monitoring. This type of liver injury may due to herb-herb interaction, herb-drug interaction, direct effects or indirect effects or may be due to adulteration of Ayurveda medications. Knowledge and type of liver injury is also important for the treatment decisions and follow-up.

#### **REFERENCES**

1. Andrade RJ, et al. Drug-induced liver injury. *Nature Reviews Disease Primers*. 2019; 5(1):58.
2. David S, Hamilton JP. Drug-induced liver injury. *US gastroenterology & hepatology review*. 2010; 6:73.
3. Abboud G, Kaplowitz N. Drug-induced liver injury. *Drug safety*. 2007:277-94.
4. Kleiner DE. The pathology of drug-induced liver injury. In *Seminars in liver disease*. 2009 Nov (Vol. 29, No. 04, 364-372).
5. Panda AK, Bhuyan GC, Rao MM. Ayurvedic intervention for hepatobiliary disorders: Current scenario and future prospect. *J Tradit Med Clin Natur*. 2017; 6(210):2.
6. Dalal KK, Holdbrook T, Peikin SR. Ayurvedic drug induced liver injury. *World Journal of Hepatology*. 2017; 9(31):1205.
7. Scott Luper ND. A review of plants used in the treatment of liver disease: part 1. *Alternative medicine review*. 1998; 3(6):410-21.
8. Thyagarajan SP, et al. Herbal medicines for liver diseases in India. *Journal of Gastroenterology and Hepatology*. 2002; 17:S370-6.

**HOW TO CITE:** Sreelekshmy B. S., Ranjana S. R., Shaiju S. Dharan, Dhanya Dharman, Ayurvedic Herbal Product Induced Liver Injury: A Case Report, *Int. J. of Pharm. Sci.*, 2024, Vol 2, Issue 3, 423-425. <https://doi.org/10.5281/zenodo.10815176>

