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Case Report

Comprehensive Ayurvedic Management of Hepatic Fibrosis (Grade III): A Case Report

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ABSTRACT:

Background: The prevalence of hepatic fibrosis is increasing worldwide, with significant geographic variation. It is necessary to better understand the risk factors and how to prevent and mitigate the disease worldwide to combat the advanced stage of fibrosis and its complications. In conventional treatment, targeting the underlying cause is often insufficient, and there is non-specific drug delivery, resulting in failure of antifibrotic drugs. **Clinical findings:** A 33-year-old male patient complained of general weakness, indigestion, loss of appetite, and distension of the abdomen. Radiological findings revealed Grade III hepatic fibrosis, and biochemical investigations showed abnormalities in lipid profile and altered liver enzyme levels. **Intervention**: He was treated with *Sarphonka Swaras Ghan, Bhoomi Amla Swaras Ghan,* Liv52 HB, Hridton, Triglize, and *Haritaki Churna* for five months, along with Diet and lifestyle modifications. **Outcome:** After five months of treatment, marked improvement was seen in appetite, fatigue level, digestion, and bowel habits. Liver was normal in size, contour, and echotexture (Grade III fatty infiltration before treatment) in Ultrasonography of the whole abdomen, and reduced from moderate (Grade III [F3]) to mild hepatic fibrosis(Grade I [F1]) in liver elastography (Metavir value-10.90 Kpa to 5.0 Kpa). **Conclusion:** A case of Hepatic fibrosis was effectively treated, associated with improvement through *Ayurveda*. The findings suggest the effectiveness and good safety tolerance of Ayurvedic interventions in managing hepatic fibrosis. This case report highlights the potential of using Ayurvedic treatment in larger-scale clinical studies for hepatic fibrosis.

KEYWORDS: Ayurvedic management, Case report, Hepatic Fibrosis, Hepatoprotective drugs, *Yakrit Vikara*

1. INTRODUCTION

Hepatic fibrosis is a pathological condition that occurs due to the abundance of collagen and other extracellular matrix proteins in the liver. [1] It was previously considered a passive and irreversible process formed by the collapse of the hepatic parenchyma and its replacement with collagen-rich tissue. [2] Nowadays, it is viewed as the model of the wound-healing response to chronic liver injury. [3] Recent clinical reports suggested that advanced liver fibrosis could be reversible. [4] Cirrhosis of liver, hepatic failure or hepatocellular cancer is complications of hepatic fibrosis, which has emerged as a global public health concern in the recent era. [5] There is no definitive curative therapy currently available for reversing fibrosis or restoring the normal functions of the liver. In advanced cases, liver transplantation is the only definitive treatment. In *Ayurveda*, hepatic fibrosis is categorized under *Yakrit Vikara* (liver disorders). It is caused by *Pitta-Kapha* imbalance, *Raktavaha Srotodushti* (vitiation of channels carrying blood), and *Mandagni* (weak digestive fire). In the classics of *Ayurveda*, several holistic approaches are mentioned to improve liver function. Ayurvedic management showed promising results in managing cirrhosis of liver and portal hypertension. [6] This case report showed the effectiveness of *Ayurveda* in the regression of hepatic fibrosis (F3 to F1) and improving overall quality of life.

2. CASE REPORT

Patient information

A 33-year-old male government employee from West Bengal visited the outpatient department of *Kayachikitsa* at the Institute of Post Graduate Ayurvedic Education and Research at SVSP, Kolkata, with chief complaints of abdominal distension after eating, decreased appetite, occasional pain in the right side of the abdomen, generalized weakness, and indigestion for over 6 months with known history of hypothyroidism and was on Levothyroxine (25 mcg). His health condition did not improve after receiving treatment from a general physician and a folklore practitioner. After that, he visited the hospital for better management**.**

Clinical findings

The patient was oriented and conscious, and no evidence of pallor, icterus, cyanosis, clubbing, or edema.

- **Personal history**
  - Appetite- Diminished
  - Bowel- Unsatisfactory
  - Bladder- 7-8 times/day
  - Sleep- Disturbed
  - Addiction- Smoking (3 years), Alcohol (7 years, 2-3 days/week)
  - Blood Pressure- 130/80 mm Hg
  - Pulse rate- 82 beats/min
  - Respiration rate- 18/min, regular
- **Systemic examinations**

➢ **Gastrointestinal-**

- **Inspection**- Abdomen soft, symmetric, no visible scars or distension, no visible peristalsis or pulsations.
- **Palpation-** Tenderness- absent, no palpable mass or organomegaly
- **Percussion-** Tympanic note over abdomen with no shifting dullness.

- ❖ **Auscultation-** Bowel sounds were normal.

➢ **Cardiovascular-** Normal findings

➢ **Respiratory-** Normal findings

- ***Ashtavidha pariksha*** (eight-fold examination of the patient)
  - ❖ *Nadi -Vata-kapha*
  - ❖ *Mutra- Prakrita* (normal),
  - ❖ *Mala- Sama* (faces mixed with Ama)
  - ❖ *Jihwa- Sama* (coated)
  - ❖ *Shabda- Prakrita* (normal)
  - ❖ *Sparsha- Prakrita* (normal)
  - ❖ *Drik-Prakrita* (normal)
  - ❖ *Akriti -Madhyama (medium)*

Diagnostic assessments

Ultrasound guided Shear wave elastography on the right lobe of the liver to estimate liver stiffness and fibrosis, and Ultrasonography (USG) of the whole abdomen was done. Blood samples were collected after an overnight fast (8 hours) for Liver function tests, including all enzymes, Lipid profile, and Complete Blood Count, at baseline and repeated after treatment.

Diagnosis

The patient was diagnosed with Hepatic Fibrosis (ICD-11-DB93.0) based on biochemical parameters and radiological findings. The clinical signs and symptoms (*Laxana*) of the patient correlated with *Yakrita Vikara* mentioned in classical *Ayurveda* texts. Chronic alcoholism led to damage of the liver tissue and scar formation, and fibrosis is the consequence of this damage. Non-invasive markers such as Fibrosis 4 (FIB-4=Age [yr] x AST [U/L]) / (Platelet Count [10^9/L] x √ALT [U/L]) and Aspartate Aminotransferase to Platelet Ratio Index ((APRI= [(AST Level / Upper Limit of Normal AST) / Platelet Count] x 100) were calculated to determine the stage of fibrosis.

Differential diagnosis

- Autoimmune liver disease- Immune-mediated inflammation of hepatocytes or bile ducts
- NAFLD (Non-Alcoholic Fatty Liver Disease)- Steatosis without alcohol or other secondary causes
- Drug-induced liver injury- Occurs due to medications such as Methotrexate, methyldopa
- Viral hepatitis- Occurs due to viral infection (Hepatitis B, C, etc.)
- Thyroid dyslipidemia- Metabolic steatosis with mild hepatic dysfunction

Timeline

The timeline of the events is given in Figure 1.

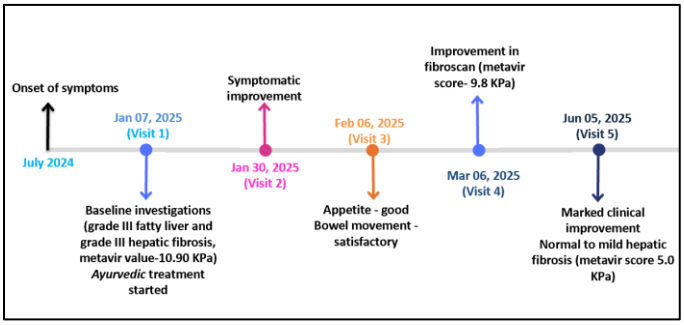

Figure 1: Timeline of the events

Therapeutic Intervention:

Therapeutic intervention was given based on symptoms and to prevent disease progression. No adverse events were reported at each follow-up. The dosage of each formulation was selected considering the *Agni* (Digestive fire), *Rogavastha* (stages or phases of a disease), and *Bala* (strength) of the patient. Therapeutic doses within standard pharmacopeial ranges were used. The specific medications prescribed are listed in Table 1.

The dietary and lifestyle modifications given to the patient are presented in Table 2.

Table no. 1: Therapeutic intervention

Sr. No.	Formulation	Dose, adjuvant, frequency	Duration
01	*Sarphonka Swaras Ghan* (Punarnavaayurvedic, India)	10 ml twice daily before food with ½ cup of Water	January 07, 2025- June 05, 2025
02	*Bhoomi Amla Swaras Ghan* (Punarnava ayurvedic, India)	10 ml twice daily before food with ½ cup of Water	January 07, 2025- June 05, 2025
03	Liv52 HB (Himalaya Wellness Company, India)	2 capsules (each 250 mg) twice daily after food with normal Water	January 07, 2025- June 05, 2025
04	Hridton (Vital Care Private Limited, India)	1 capsule (each 500 mg)twice daily after food with normal Water	January 07, 2025- February 06, 2025
05	Triglize (Apex Laboratories Private Limited, India)	2 tabs (each 250 mg) twice daily after food with normal Water	January 07, 2025- June 05, 2025
06	*Haritaki Churna* (Institutional pharmacy)	5 g once daily after dinner with lukewarm Water	January 07, 2025- March 06, 2025

Table no. 2: Diet and lifestyle

Diet	Lifestyle
Intake of Rice, wheat, millet, Oats, Barley Green gram, Red gram, Lentil, Papaya, *Draksha*, apple, *Potala*, snake guard, beans, Moringa Avoid rice flour, curd, sugar, mixed milk products, oily and spicy foods, cold beverages, red meat, and irregular meal timing.	Avoidance of alcohol and smoking (Only counseling was done in every visit) Moderate exercise such as brisk walking, *yoga* (*Gomukhasana, Dhanurasana)* Avoid daytime sleep and go to bed about one hour after dinner Avoid stress Maintain sleep cycle

Follow-up and Outcomes

Patient was followed up for duration of five months after initiation of treatment, and outcomes were assessed based on clinical, biochemical, and radiological findings. Improvement was observed in appetite and digestion. *Agnibala* (digestive Strength) was assessed by the *Agnibala* Assessment Tool [7] and was in *Mandagni* state with 72.73%, which reduced to 18.19% after treatment, showed marked improvement in the status of *Agni.* The FIB-4 index showed a notable reduction from 0.83 before treatment to 0.61 after treatment (high risk (FIB4 ≥ 3.25) and low risk (FIB4 < 1.3), indicating regression in liver fibrosis. The APRI score decreased significantly from 0.59 to 0.33 (<0.5 less significant fibrosis and >1.5 more advanced fibrosis and cirrhosis), indicating improvement in hepatic function.

FAS (Fatigue Assessment Scale) Score reduced from 35 to 12, indicating decreased levels of fatigue. This reflects an overall improvement in patient well-being and functional status.

The outcomes of the biochemical parameters before and after treatment are presented in Table No. 3.

Radiological findings, such as transient elastography and Ultrasonography (USG) of the whole abdomen, are presented in Table 4.

Table no. 3: Improvement in Biochemical Parameters

Parameters	Unit	Before Treatment	After Treatment	Reference Range	Changes
Haemoglobin	g/dL	14.50	14.8	13-17	Normal
Bilirubin- Total	mg/dL	0.68	0.40	0.1-1.2	Normal
Bilirubin- Direct	mg/dL	0.19	0.10	0.1-0.3	Normal
Bilirubin-Indirect	mg/dL	0.49	0.30	0.1-0.7	Normal
AST	IU/L	51.2	30	4-41	High To Normal
ALT	IU/L	87.2	49	4-40	High To Normal
Total Protein	g/dL	7.53	8.00	6.40-8.30	Normal
Albumin	g/dL	4.72	4.90	3.50-5.20	Normal
Globulin	g/dL	2.81	3.10	2.0-3.5	Normal
albumin/globulin ratio		1.68	1.58	0.90-2.00	Normal
Alkaline phosphatase	IU/L	143	113	30-120	High To Normal
Serum Total Cholesterol	mg/dL	111	109	<200.0	Normal
Serum HDL Cholesterol	mg/dL	28	32	>42.00	Low
Serum LDL Cholesterol	mg/dL	49	51	<100.00	Normal
Serum VLDL Cholesterol	mg/dL	34	26	<30.00	High To Normal
Serum Triglycerides	mg/dL	318	170	<150.00	High To Normal
AST-Aspartate Aminotransferase, ALT- Alanine Aminotransferase, HDL-High-Density Lipoprotein, LDL-Low-Density Lipoprotein, VLDL-Very Low-Density Lipoprotein					

Table no. 4: Radiological findings before and after treatment

Investigation	Before treatment (Visit 1)	Intermediate	After treatment (Visit 5)
USG	Liver- normal in size, parenchymal echotexture diffusely increased, suggestive Grade III fatty liver.	Not done	Liver- normal in size, contour, and echotexture
Transient Elastography (FibroScan)	Metavir Value = 10.90 KPa - Grade III hepatic fibrosis (F3) Moderate liver fibrosis	On March 03, 2025, the Metavir value was 9.8(F3) KPa	Metavir Value = 5.0 KPa - Grade I fibrosis (F1) normal to mild liver fibrosis

Transient Elastography (FibroScan) images are presented in Figure 2.

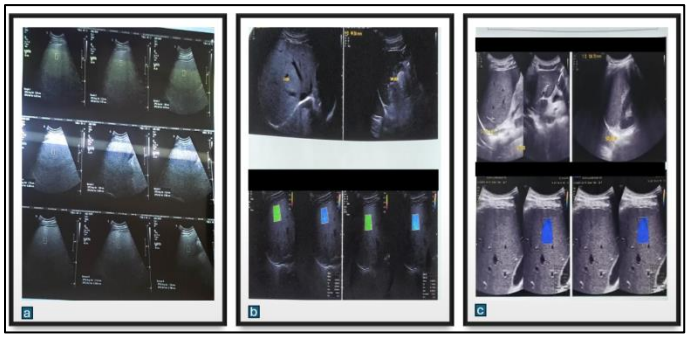

Figure 2: Transient Elastography images of the liver, demonstrating sampling areas in the right hepatic lobe and Region of Interest (ROI) boxes denote the regions used for liver stiffness measurement and fibrosis assessment: a) Before treatment, b) Intermediate follow-up, c) After treatment

Quality of life was measured using the Chronic Liver Disease Questionnaire (CLDQ) in every visit. CLDQ domains consist of fatigue, emotional functions, abdominal symptoms, systemic symptoms, activity, and worry, and are scored from 1 to 7 (1 indicates poor quality of life and 7 indicates better quality of life). Marked improvement was noted in the overall quality of life (Figure 3).

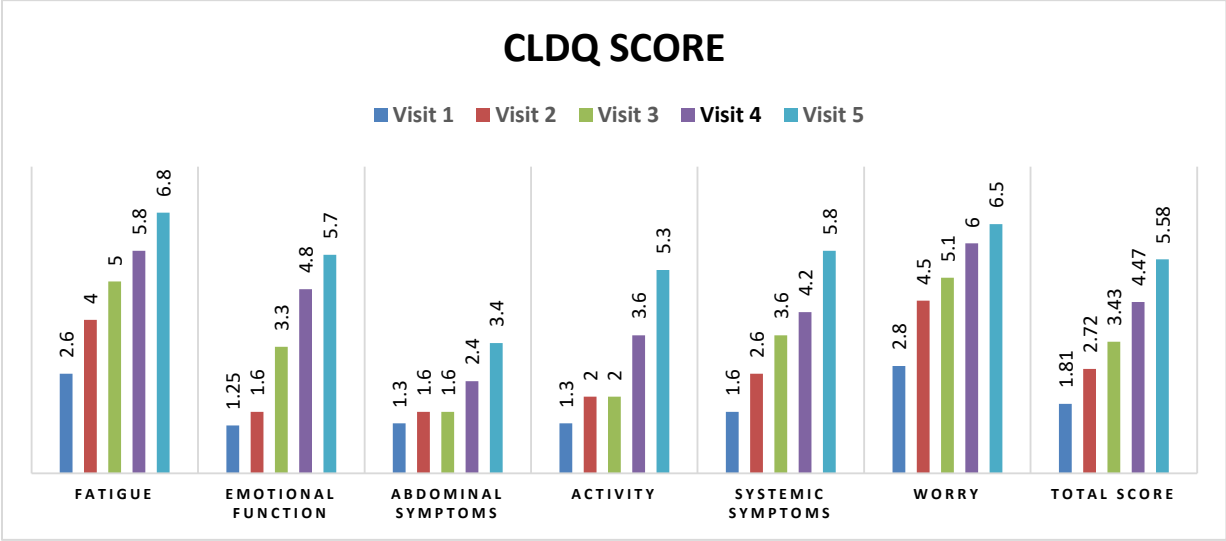

Figure 3: Changes in the CLDQ domain and total score

3. DISCUSSION

Hepatic fibrosis can be reversed if treated early. Conventional management focuses on treating the underlying cause and preventing disease progression. However, there is no single definitive treatment to reverse fibrosis completely. In *Ayurveda*, it is considered *Santarpanaja Vyadhi* (disease due to over-nourishment), which vitiates *Meda* (fat) and *Kaphadosha* (Figure 4).

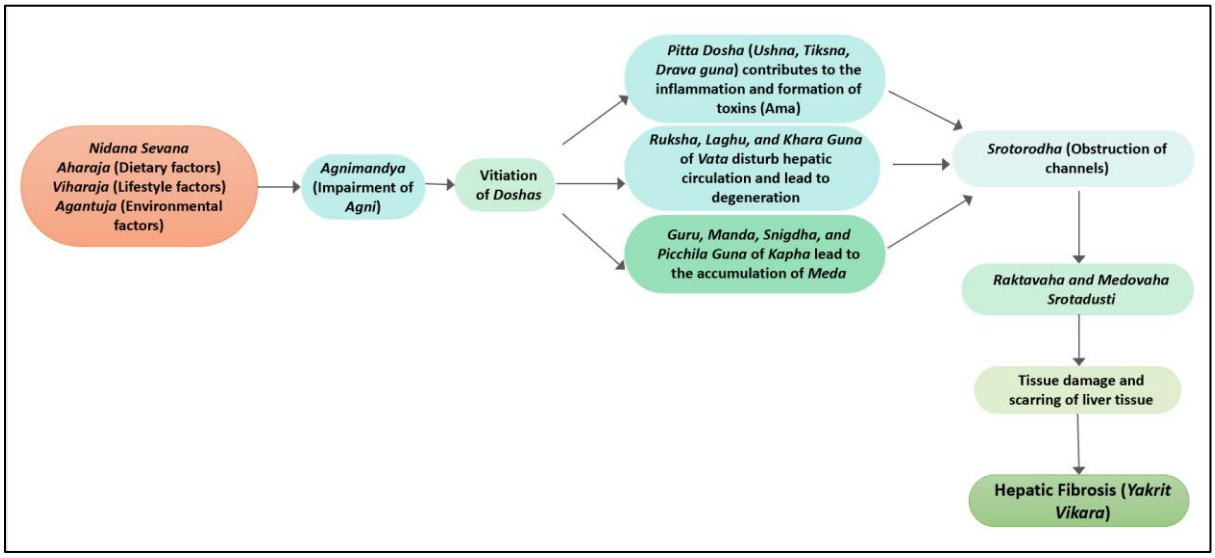

Figure 4: *Samprapti* of Hepatic Fibrosis

Agni-deepana (enhancement of digestive fire), *Ama pacana* (digestion of metabolic toxins), and *Nitya Virechana* (daily purgation) treatment principles were followed to breakdown the pathogenesis of disease progression. *Sharpunkha (Tephrosia purpurea* (L.) Pers.*)* and *Bhumiamalaki* (*Phyllanthus niruri* L.) are *Tikta(bitter)* and *Kasaya (astringent) Rasapradhana Dravya (dominance of taste).* *Tikta Rasa* possesses *Deepana and Pachana* (stimulating digestive fire and digestive action), *Lekhana* (fat lysing therapy), and *Medashoshana* (reduction of lipid tissue) properties. So, it is helpful in digestion and *Dhatu* formation. Flavonoids and polyphenolic compounds of *T. purpurea* act as potent antioxidants, anti-inflammatories, and free radical scavengers, preventing cellular damage and loss of functional integrity of the liver cell membrane. It regulates the activity of liver enzymes and reduces elevated serum biomarker levels in the body. Preclinical studies in acute and chronic hepatotoxic models support it. [8] Hepatoprotective and antioxidant activity of *P. niruri* has been attributed to two novel lignin phytochemicals named *phyllanthin* and *hypophyllanthin*. [9] Water, ethanol, and hexane extract of *P. niruri* contains anti-inflammatory properties due to the presence of lignan-rich fraction, or lignans phyltetralin, nirtetralin, and niranthin.[10] *Haritaki* (*Terminalia chebula* Retz.) has *Vataanulomana*(~pacifying *Vata*) and *Lekhana* properties. It provides relief from symptoms by opening the obstructed channel and aiding in the excretion of fat from the body. Chebulagic acid and chebulanin neutralize the free radicals, which lead to tissue damage and are linked to many other diseases. [11] Earlier studies have identified the pathways that regulate the levels of inflammatory cytokines and oxidative stress. [12] Liv 52 HB is a proprietary medicine of Himalaya Wellness Company. It contains *Mustaka* (*Cyperus rotundus* L.) and *Nagaramustaka (Cyperus scariosus* R.Br.), possessing anti-inflammatory and hepatoprotective properties. It is helpful in inhibiting

liver damage. C. rotundus is beneficial in liver problems due to its anti-hepatotoxic properties. [13] Triglize is a polyherbal compound that prevents liver damage due to its antioxidant properties. [14] Hridton is a proprietary Ayurvedic formulation mainly used to treat cardiovascular disorders. Anti-inflammatory and anti-hyperlipidemic effects of Ingredients of Hridton (*Arjuna, Puskarmoola, Sunthi, Rasona, Guggulu, Ashwagandha, Tulsi, Tvak, Citraka, Akik Pishti* (Agate), and *Praval Pishti*) improve liver function. Adherence to a healthy dietary pattern, such as high intake of low-fat dairy products, vegetables, and fruits, and lifestyle modifications, is helpful against hepatic fibrosis. [15]

Limitations

This case study presents only a single case, which limits the generalizability of the findings. Additionally, due to financial constraints, advanced imaging, histology could not be performed. CAP score for steatosis quantification was not done. The assessment of therapeutic efficacy was therefore based on clinical outcomes and radiological findings.

4. CONCLUSION

Treatment of hepatic fibrosis is crucial to prevent complications such as cirrhosis of the liver, hepatic failure, hepatic encephalopathy, etc. Patient counseling is a cornerstone of effective treatment for chronic addiction. In this case, the patient experienced improvement in clinical symptoms, biochemical parameters, radiological findings (F3→F1), and non-invasive fibrosis indices such as FIB-4 and APRI. Five months of follow-up evaluations after initiation of treatment indicated promising results in the control of recurrence of symptoms. These findings suggest that Ayurvedic treatment with *Shamana*(~ palliative therapy), *Nitya Virechana*, and diet and lifestyle modifications provided beneficial effects in hepatic fibrosis, and no adverse effects occurred throughout the treatment. It is safe, effective, and economical. As this is a single case report, it may open a new path for multicentric randomized controlled trials with an adequate sample size and advanced imaging follow-up to validate the effectiveness and reproducibility of Ayurvedic management in hepatic fibrosis.

Declaration of Patient Consent – The authors confirm that they have acquired a patient consent form, in which the patient or caregiver has granted permission for the publication of the case, including accompanying images and other clinical details, in the journal. The patient or caregiver acknowledges that their name and initials will not be disclosed, and sincere attempts will be undertaken to safeguard their identity. However, complete anonymity cannot be assured.

Patient perspective - The patient shared his experience in his native language. After beginning treatment, he started to feel better without any noticeable adverse effects. Overall, he was happy and satisfied with the treatment.

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Approval of Final Manuscript: All the Authors.

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Declaration of Generative AI

The authors declare this manuscript was written without the use of generative artificial intelligence tools. All the content, including text generation, data analysis and references was developed and reviewed by the author without assistance from AI technologies.

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