



## Case Study

### AYURVEDIC APPROACH TO MANAGING NON-ALCOHOLIC FATTY LIVER DISEASE

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#### Article info

##### Article History:

Received: 16-09-2025

Accepted: 19-10-2025

Published: 30-11-2025

##### KEYWORDS:

Non-Alcoholic Fatty Liver Disease, Santarpanottha Vikara, Ayurveda.

#### ABSTRACT

Fatty liver disease is one of the most prevalent liver disorders globally, characterized by the excessive accumulation of lipids, primarily triglycerides, within hepatocytes. Non-Alcoholic Fatty Liver Disease (NAFLD) refers to the buildup of excess fat within liver cells in individuals who do not consume significant amounts of alcohol. According to the World Health Organization (WHO), the prevalence of chronic liver diseases, including NAFLD, has shown a steady rise in recent years. In Ayurveda, NAFLD is understood as a *Santarpanottha Vikara* caused by *Kapha* and *Medo Dushti*. In this case, report effect of Ayurveda intervention in grade II fatty liver is reported. A 44-year-old male patient visited the National Institute of Ayurveda Hospital in Jaipur, Rajasthan, India, with complaints of abdominal heaviness, loss of appetite, fatigue, and incomplete bowel evacuation persisting for the past four months. On examination, there was no significant clinical abnormality. Haematological examinations revealed moderate enzyme elevation (ALT 89U/L, AST 42U/L). The ultrasound examination revealed a Grade II fatty liver. The patient underwent Ayurvedic treatment for 21 days. After treatment, significant improvement was observed in signs and symptoms and follow-up ultrasonography showed improvement from Grade 2 to Grade 1 fatty liver. The present case demonstrates the effectiveness of Ayurvedic interventions in the management of non-alcoholic fatty liver disease.

#### INTRODUCTION

Non-alcoholic fatty liver disease (NAFLD) is among the most prevalent liver disorders globally, primarily resulting from the buildup of lipids, particularly triglycerides, within hepatocytes. While a small amount of fat is normally present in the liver, when it exceeds 5–10% of the liver's total weight, it leads to fatty liver. NAFLD encompasses two stages simple steatosis and non-alcoholic steatohepatitis (NASH). Steatosis refers to fat accumulation in the liver, whereas steatohepatitis involves fat deposition accompanied by inflammation.<sup>[1]</sup>

According to the World Health Organization, the incidence of chronic liver diseases, including NAFLD, has shown a consistent upward trend in recent years.

NAFLD has emerged as a global health concern associated with rising obesity rates, with its prevalence in the general population reported to range between 11.2% and 37.2%.<sup>[2]</sup> Globally, the number of NAFLD cases rose from 19.34 million in 1990 to 29.49 million in 2017. The highest prevalence is observed in East Asia, followed by South Asia, North Africa, and the Middle East.<sup>[3]</sup>

In Ayurveda, NAFLD is understood as a *Santarpanottha Vikara* caused by *Kapha* and *Medo Dushti*. The vitiated *Doshas* localize in the *Yakrit* (liver), which is considered the *Mula* of *Raktavaha Srotas* and the principal *Sthana* of *Pitta*.

#### Case Report

A 44-year-old non-alcoholic, married male patient from an urban area, relatively overweight with a BMI of 26, visited our Ayurveda hospital seeking treatment. The patient was 5 feet 8 inches tall, weighed 78 kg, and appeared anxious and fatigued.

The chief complaints included persistent fatigue, loss of appetite, a sensation of abdominal

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<https://doi.org/10.47070/ayushdharma.v12i5.2237>

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heaviness, incomplete bowel evacuation, and abdominal distension for the past four months. An ultrasonography (USG) examination conducted prior to presentation revealed Grade II fatty liver.

### Clinical findings

**History:** The patient's mother was diabetic. One month earlier, the patient had consulted an allopathic physician for similar complaints and received conservative management. However, as complete recovery was not achieved and symptoms recurred, the patient sought Ayurvedic management for further treatment. No other significant medical, surgical, or psychological history was reported.

### General Examination

At the time of presentation, the patient's pulse rate was 84/min, blood pressure measured 130/80

mmHg, and respiratory rate was 15/min. The body temperature was within normal limits.

### Systemic Examination

**Respiratory and Cardiovascular Systems:** Clinical examination revealed no abnormalities.

**Abdominal Examination:** The abdomen was noticeably distended due to fat, with a centrally positioned umbilicus and normal respiratory movements. On palpation, mild tenderness was noted in the right lumbar and umbilical regions. Percussion revealed no abnormalities, and bowel sounds were normal on auscultation.

**Intervention:** The patient received Ayurvedic medication for a period of 21 days. The details of the treatment regimen are summarized in Table 1.

**Table 1: Treatment given for 21 days**

S.No	Drug	Dose and frequency
1.	<i>Avipattikara Churna</i> <i>Punarnava Mandoor</i> <i>Sankha Bhasma</i>	3g 250mg 250mg } Twice a day
2.	<i>Erandabhrustaharitaki Churna</i>	3g once a day at bedtime

**Timeline of treatment:** The patient had treatment for 21 days. The timeline of the treatment is presented in Table 2.

**Table 2: Timeline of the treatment**

Health Event	Timeline
Consulted for allopathic treatment	12.07.25
First USG of the abdomen and diagnosis of grade II fatty liver	14.07.25
Approached for Ayurvedic treatment	4.08.25
Assessment and examination were conducted and treatment was initiated.	9.08.25
First follow-up assessment	23.08.25
Second follow-up assessment, USG advised	30.08.25
Third follow-up assessment with USG showing grade I fatty liver	1.09.25

## RESULTS

### Follow-up and outcomes

The patient's improvement in symptoms associated with *Yakritodar Roga* and *Medo Roga* was assessed using a four-point grading scale (none, mild, moderate, and severe). The changes observed in the subjective parameters are presented in Table 3 below.

**Table 3: Changes in Parameters Observed During Follow-up**

Parameter	Baseline 9.08.25	Follow-up 1 <sup>st</sup> 23.08.25	Follow-up 2 <sup>nd</sup> 30.08.25
<b><i>Yakritodar Roga</i> related Sign and Symptoms</b>			
<i>Udarshoola</i> (pain in the abdomen)	Mild	None	None
<i>Sama Purisha</i>	Severe	Mild	None
<i>Jwara</i> (fever)	Mild	None	None
<i>Aruchi</i> (loss of appetite)	Moderate	None	None

Height, Weight and BMI			
Height	173cm	173cm	173cm
Weight	78kg	74kg	72kg
Body Mass Index (BMI)	26	24.7	24
Obesity-related signs and symptoms			
<i>Ayusho Hrasa</i> (deficient in longevity)	Moderate	Mild	None
<i>Javoparadha</i> (slow in movement)	Moderate	Mild	None
<i>Krichchavyavaya</i> (difficult to indulge in sexual intercourse)	Mild	None	None
<i>Daurbalyam</i> (weak)	Severe	Mild	None
<i>Daurgandhya</i> (bad smell)	Mild	None	None
<i>Swedabadha</i> (much sweating)	Mild	Mild	Mild
<i>Ati Kshudha</i> (excessive hunger)	None	None	None
<i>Ati Pipasa</i> (excessive thirst)	Mild	None	None

### Effect on biochemical parameters

Biochemical parameters were assessed before starting the treatment and after one month. Liver enzymes (AST/ALT) were higher in August and show improvement by September. However, ALT remains above normal, consistent with ongoing mild fatty liver-related inflammation. Data is presented in Table 4.

**Table 4: Effect of treatment on biochemical parameters**

Parameter	Baseline 9.08.25	After treatment 1.09.25
Liver Function Tests (LFT)		
Bilirubin (Total)	1.012 mg/dL	0.847 mg/dL
Bilirubin (Direct)	0.382 mg/dL	0.336 mg/dL
SGOT (AST)	42.2 U/L	33.9 U/L
SGPT (ALT)	89.2 U/L	67.8 U/L
Alkaline Phosphatase	82 U/L	82 U/L
Complete Blood Count (CBC)		
Haemoglobin	11.5 g/dl	12.1g/dl
MCV	66.3 fl	66.4 fl
MCH	21.2 pg	21.3 pg
RDW-CV	16.5%	16.0%

### Ultrasonography of the whole abdomen (USG)

Before treatment USG Findings- Fatty liver grade II, Borderline splenomegaly.

After treatment USG Findings- Fatty liver grade I, Mild Splenomegaly.

### DISCUSSION

Healthcare practitioners commonly encounter patients affected by fatty liver disease. Although, most cases are asymptomatic, some can progress to fibrosis, steatosis, or steatohepatitis, and in certain instances, may lead to hepatocellular carcinoma. Fatty liver is a leading cause of liver dysfunction, though non-alcoholic fatty liver disease (NAFLD) tends to progress to chronic liver disease<sup>[4]</sup> less often than alcoholic fatty

liver. In this study, a non-alcoholic, overweight patient diagnosed with Grade II fatty liver was treated. From the perspective of *Nidana* and *Samprapti*, NAFLD, is classified as a *Santarpanajanya Vyadhi* (disease caused by overnutrition). The pathological process begins with *Agni Vikriti* (disturbance of digestive metabolism), leading to the formation of *Apakva Annarasa* (improperly digested nutrients). This subsequently aggravates *Kapha Dosha*, resulting in abnormal accumulation and deposition of *Meda* (fat tissue) in the *Yakrit* (liver). *Avipattikara Churna*, with ingredients exhibiting *Katu*, *Tikta*, and *Madhura Rasa*<sup>[5]</sup> and properties such as *Ama Pachana*, *Mridu Virechaka*,

and *Lekhaniya*, played a key role in detoxification, fat metabolism, and reduction of hepatic fat. The presence of *Trivrut (Nishoth)* enhanced *Pitta Virechana* and contributed to the *Samprapti Vighatana* of *Yakrit Vikara* (fatty liver). *Punarnava Mandura* provided additional hepatoprotective<sup>[6]</sup> and antioxidant support. In this case, noticeable improvement in digestion and metabolism was observed within a few days of starting the treatment. A mild daily laxative in the form of *Eranda bhrishtaharitaki Churna* was given to promote effective elimination of waste from the colon. Routine purgation is regarded as a key therapeutic measure in the management of *Udara Roga* (abdominal ailments). In the management of *Udara Roga*, *Eranda Taila* is recommended to be taken regularly, either with milk or cow's urine, to aid in internal cleansing and purification<sup>[7]</sup>. *Haritaki*, when processed in castor oil, acts as a gentle purgative that helps pacify *Vata* disorders. In the present case, effective bowel evacuation resulted in notable therapeutic improvement.

## CONCLUSION

The present case demonstrates that Ayurvedic management, based on the principles of *Agni Deepana*, *Ama Pachana*, and *Virechana*, can be highly effective in improving clinical and biochemical parameters of Non-Alcoholic Fatty Liver Disease (NAFLD). The use of formulations such as *Avipattikara Churna*, *Punarnava Mandura*, and *Eranda Bhrishta Haritaki Churna* helped restore digestion, metabolism, and liver function, leading to significant reduction in hepatic fat from Grade II to Grade I on ultrasonography. The findings highlight the potential of Ayurveda in addressing metabolic liver disorders holistically by correcting *Agni*, balancing *Doshas*, and promoting *Meda* metabolism. Further long-term clinical studies are required to confirm these findings and to formulate standardized Ayurvedic treatment guidelines for the management of NAFLD.

### Cite this article as:

Tanya Panchpuri, Ajay Kumar Sahu, Rashmi Mutha. Ayurvedic Approach to Managing Non-Alcoholic Fatty Liver Disease. AYUSHDHARA, 2025;12(5): 252-255.

<https://doi.org/10.47070/ayushdhara.v12i5.2237>

**Source of support: Nil, Conflict of interest: None Declared**

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