

# Management of Alcoholic Fatty Liver Disease Through Ayurvedic Intervention: A Case Report

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**Abstract:** Introduction: Alcoholic Fatty Liver Disease (AFLD) is a progressive liver disorder resulting from excessive alcohol consumption, leading to fat accumulation in hepatocytes, and affects around 4.8% population globally. Ayurveda offers a personalized and holistic approach to liver health, incorporating detoxification (Shodhana), hepatoprotective herbal formulations (Aushadhi), dietary modifications (Pathya), and Panchakarma therapies to rejuvenate liver function. Main Clinical Finding: This is a case report of a 43-year-old male who presented with a history of excessive alcohol intake, along with complaints of loss of appetite, abdominal distension and heaviness, generalized weakness, tremors, anxiety, nausea, and hyperacidity. Diagnosis: The condition was diagnosed as hepatomegaly with fatty infiltration of the liver (Grade II) and elevated liver enzymes. Interventions: The patient was treated with Aarogyavardhini Vati, Eranda Bhrishta Haritaki Churna, Yakrut Shoolvinashini Vati, Avipattikara Churna, Pittantaka Yoga, and Kamdugdha Rasa for 90 days, along with dietary modifications and abstinence from alcohol. Outcome: Significant improvement in clinical symptoms with normal findings on USG and liver function tests (LFT) was observed within 45 days, and complete resolution of clinical features achieved by 90 days. Conclusion: This case demonstrates the potential of Ayurvedic interventions in the effective management of AFLD Grade II.

**Keywords:** Alcohol related Liver Disease, Ayurveda, alcohol addiction, Yakrut Roga, Madatyaya etc.

## 1. Introduction

Alcoholic Fatty Liver Disease (AFLD) is a progressive liver disorder resulting from excessive alcohol consumption, leading to fat accumulation in hepatocytes and a major concern worldwide.

The prevalence of ARLD worldwide was 4.8%. The prevalence in males was 2.9%, which was higher than female (0.5%). Among the ethnic groups, the percentage was highest in Caucasians (68.9%). Alcoholic liver cirrhosis comprised the highest proportion in the disease spectrum of ARLD at 32.9%. The prevalence of ascites in ARLD population was highest (25.1%). The ARLD population who drinking for > 20 years accounted for 54.8%, and the average daily alcohol intake was 146.6 g/d. The incidence was 0.208/1000 person years. The overall mortality was 23.9%, and the liver-related mortality was 21.6%<sup>[1]</sup>

Ethanol, the active ingredient in alcoholic beverages, is a central nervous system depressant that can cause intoxication when consumed. One of the liver's primary functions is to detoxify harmful substances from the bloodstream, including alcohol. When ethanol is ingested, the liver metabolizes it into acetaldehyde, a highly toxic compound. Prolonged and excessive alcohol consumption overwhelms the liver's detoxification capacity, leading to the accumulation of fat in liver cells, inflammation, and eventually, alcoholic liver disease (ALD). If left unchecked, this condition can progress from alcoholic fatty liver disease (AFLD) to alcoholic hepatitis and ultimately to cirrhosis, a severe and irreversible form of liver damage.

Classical Ayurvedic texts, including Charaka Samhita, Sushruta Samhita, and Ashtanga Hridaya, describe Madatyaya as a disorder resulting from the excessive intake of alcohol (madya), leading to vitiation of Pitta and Kapha Doshas, accumulation of Ama (toxins), and impairment of liver function (yakrutdalayodara).<sup>[2, 3, 4]</sup>

A high AST/ALT ratio is thought to be indicator of ALD. If the ratio is more than 3, ALD is highly likely, whereas a ratio greater than 2 is strongly suggestive.<sup>20</sup> On the other hand, an AST/ALT ratio of less than 2 does not necessarily exclude ALD; even a ratio less than 1 may be seen in patients with significant intake of alcohol, which may suggest alcoholic steatosis rather than more serious forms of ALD.<sup>[5]</sup>

Conventional management primarily focuses on alcohol cessation, lifestyle modifications and symptomatic treatment. However, Ayurveda, the traditional Indian system of medicine, offers a personalized and holistic approach to liver health, incorporating detoxification (Shodhana), hepatoprotective herbal formulations (Aushadhi), dietary modifications (Pathya), and Panchakarma therapies to rejuvenate liver function. Modern medicine provides symptomatic management, but Ayurveda addresses the root cause by detoxifying the liver and restoring its function through natural interventions.

This case report explores the successful Ayurvedic management of AFLD through herbal formulations, and dietary modifications.

## 2. Materials and Methods

### Case Report:

A 43 - year - old, married, male patient, belonging to the middle economic class came to *Agadtantra* OPD, national institute of ayurveda hospital, Jaipur with the chief complaints of loss of appetite, distension and heaviness in abdomen, generalised weakness, tremors on fine movements of both hands, anxiety, nausea, hyper acidity. The patient was suffering with these symptoms for the last 3 months.

### History of present illness

- The patient, previously asymptomatic, presented with a range of symptoms including loss of appetite, distension and heaviness of abdomen, right hypochondrial region tenderness, anorexia, insomnia, tremors and weight loss, generalized weakness, for the past 3 month.
- Upon taking a medical history, it was revealed that the patient began consuming alcohol occasionally due to work - related stress 25 years ago. thereafter the frequency kept increased and in the last 3 years he started consuming 150 - 200ml/day, his consumption gradually increased over time up to 400 - 600 ml occasionally.
- Since 2021, he was treated with allopathic medicines from different centres but did not get complete relief. The patient had abstained from alcohol for few months. Again, the patient began consuming alcohol daily along with spicy and oily food. As result, the patient gradually developed loss of appetite, distension and heaviness of abdomen, right hypochondrial region tenderness, anorexia, insomnia, tremors and weight loss. Hence, for better and further management through ayurveda, he visited NIA hospital Jaipur.

### Personal History

- Appetite - Poor (reduced)
- Sleep - Reduced, disturbed
- Bowel - Regular, semi solid, dark brown stool
- Bladder - Normal
- Built - Average
- Habit - vegetarian, intake of spicy food

### Addiction history

- He has been consuming Alcohol since last 25 years

### Assessment

#### a) General physical examination -

- Shareerika Prakruti* – *Kapha Vata*
- Blood Pressure - 144/88 mm of hg
- Pulse rate – 110/min
- Respiration rate - 13 /min
- Temperature – Afebrile

- Icterus - Absent
- Pallor - Present
- Oedema – Absent

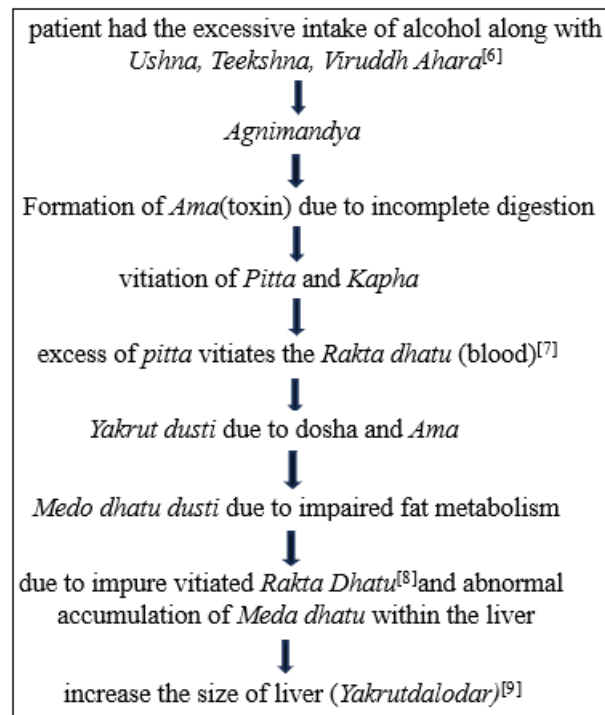
#### b) Systemic Examination –

- CNS* – *Confused and drowsy, under influence of alcohol.*
- CVS* - *S1 S2 Normal*
- RS* - *Air entry bilateral equal, AEBE clear*
- Cerebellar* - *Gait – normal, Dysdiadochokinesia, Tremors in both hands - on fine movements.*
- Abdomen* - *Mild tenderness over the right hypochondriac area and the epigastric area was elicited.*

### Ashtavidha Pariksha: (Table No.1)

Nadi (Pulse)	Vata Pitta dominant
Mutra	Normal,
Mala	Regular, dark brown colour, samanya matra, semi solid
Jivha	Coated
Shabda	Prakruti (clear)
Netra	Pallor Netratha
Aakruti	Madhyama built
Sparsha	Anushnasheeta

### Pathophysiology of disease



### Diagnosis

Based on clinical presentation and examination with radiological and laboratory tests; the patient was diagnosed alcoholic fatty liver disease grade II (*Yakrutdalodar*).

**Table 2:** Showing Criteria for Gradation of symptoms

Symptoms	Grade 0	Grade 1	Grade 2	Grade 3
Loss of appetite	Absent	Slightly reduced; eats less than usual	Eats very little; noticeable weight loss	Refuse to eat; needs nutritional support
Distension and heaviness in abdomen	Absent	Slight bloating; not painful and visible distension	Visible distension Some discomfort and heaviness	Marked distension; Pain and discomfort interfere with daily activity
Generalised weakness	Normal strength	Feels tired after effort	Needs rest often; reduced daily activity	Cannot perform daily tasks; bedbound at times
Tremors on fine movements of both hands	Absent	Slight tremor noticeable on close observation	Obvious tremor while writing or holding small objects	Severe tremor; unable to perform fine tasks
Anxiety	Absent	Occasional worry; no effect on daily routine	Frequent anxiety; affects concentration or sleep	Constant anxiety; disrupts normal functioning
Hyperacidity	Absent	Mild burning sensation occasionally	Regular discomfort after meals; uses antacids	Persistent severe pain needs medical treatment
Nausea	Absent	Occasional; not interfering with eating	Occasional; not interfering with eating	Constant nausea; unable to eat or drink

**Treatment Given****1) Shamana Chikitsa were given as following:****Table 3:** Showing list of interventions (medicines)

S. No.	Name of Medicine	Dose	Time of administration	Route of Administration	Anupana	Duration (days)
1.	<i>Eranda Bhrista Haritaki Churna</i>	5gm	After meal at bedtime	Oral	Lukewarm water	15 days
2.	<i>Yakrut shooolvinashini vati</i>	1 tab	After meal at morning & evening	Oral	Luke warm Water	30 days
3	<i>Avipattikara Churna</i>	3gm	Before meal at morning & evening	Oral	Water	45 days
	<i>Pittantaka Yoga</i>	500mg				
	<i>Kama dudha rasa</i>	125mg				
4.	<i>Arogyavardhini Vati</i>	2tab	After meal at morning & evening	Oral	Lukewarm water	45 days

**Table 4:** Showing list of interventions (medicines) for follow up of 45 days

S. No.	Name of Medicine	Dose	Time of administration	Route of Administration	Anupana
1	<i>M. Liv syrup</i>	15ml	Before meal at morning & evening	Oral	Water
2	<i>Avipattikara Churna</i>	3gm	Before meal at morning & evening	Oral	Water
	<i>Pittantaka Yoga</i>	500mg			
	<i>Kama dugdha rasa</i>	125mg			
3	<i>Ashwagandha Churna</i>	3 gm	After meal at morning & evening	Oral	Milk
	<i>Shatavari Churna</i>	2 gm			
	<i>Vidari kanda Churna</i>	2 gm			

**2) Pathya - Apathya (Dietary Management): advised diet**

- Alcohol completely discontinued
- Light, *Pitta - pacifying* diet prescribed
- Cereals - green mudga, purana yava, purana godhuma, purana shali
- Bitter vegetables like karela (bitter gourd), and bottle gourd, Methika, Patola etc.
- Avoided fried, fermented, and spicy foods.

**Results and:**

Patient was examined every 15 days follow up and the patient showed gradually significant improvement in all symptoms and his liver profile returned within normal limits. and USG revealed normal size, shape and echotexture of liver after 45 days of the treatment. but medicine continued for rest of the months as a precautionary measure and there has been no recurrence of symptoms during follow - up.

**Table 5:** Showing Laboratory examination:

Name of Investigation	Before treatment (30/01/2025)	After treatment (12/03/2025)	Units
<b>Complete Blood Count (CBC)</b>			
Total Red Blood Cell	4.83	4.78	*10 <sup>6</sup> /μl
Hemoglobin	14.8	13.9	g/dL
Hematocrit	45.6	44.2	%
MCV	94.4	92.5	fL
MCH	30.6	29.1	Pg/cell
MCHC	32.5	31.4	g/dL
RDW - CV	14.2	12.6	%
RDW - SD	50.2	43.3	%
WBC	7.53	8.58	*10 <sup>3</sup> /μl
PLT	182	443	*10 <sup>9</sup> /L

ESR	67	26	mm/hr
Liver Function Test (LFT)			
Bilirubin Total	1.163	0.490	mg/dL
Bilirubin Direct	0.464	0.143	mg/dL
Bilirubin Indirect	0.70	0.35	mg/dL
SGOT (AST)	190.8	16.3	U/L
SGPT (ALT)	120.4	20.2	U/L
Total Protein	7.97	7.10	g/dL
S. Albumin	4.58	4.32	g/dL
S. Globulin	3.39	2.78	g/dL
A/G RATIO	1.35	1.55	-
Alkaline Phosphatase	89	57	U/L
GGT	445	56	U/L
Renal Function Test (RFT)			
S. Urea	21.3	20.1	mg/dL
S. Creatinine	0.70	0.72	mg/dL
Lipid Profile			
Triglycerides	117.4	123	mg/dL
Total Cholesterol	239.7	154.5	mg/dL
HDL Cholesterol	86.2	33.3	mg/dL
LDL Cholesterol	130.7	109.0	mg/dL
VLDL Cholesterol	23.48	24.60	mg/dL
Total Cholesterol: HDL Cholesterol Ratio	2.78	4.64	- - - -

### Radiological investigation -

**Table 6:** Showing findings of radiological investigations

USG findings	
Before treatment (13/02/2025)	After treatment (8/03/2025)
Hepatomegaly with Grade II fatty infiltration	Liver normal in size, shape and echotexture

### Subjective outcomes

**Table 7:** Improvement in sign and symptoms

S. no.	Complaints	BT	After 15 days	After 30 days	After 45 days	After 60 days	After 90 days
1	Loss of appetite	3	2	2	1	1	-
2	Distension and heaviness in abdomen	3	3	2	1	1	-
3	Generalised weakness	3	3	2	2	1	-
4	Tremors on fine movements of both hands	2	1	1	-	-	-
5	Anxiety	3	3	2	1	1	-
6	Nausea	3	2	2	1	1	-
7	Hyperacidity	3	2	2	1	1	-

## 3. Discussion

This case study highlights the potential of Ayurvedic interventions in managing Alcoholic Fatty Liver Disease (AFLD), a condition primarily caused by chronic alcohol consumption leading to hepatic steatosis and liver inflammation. The therapeutic approach adopted in this case is based on classical Ayurvedic principles targeting *Pitta* and *Kapha* dosha imbalance, *Ama* (toxins), and impaired liver function (*Yakrut vikruti*).

Acharya Sushruta describe *Pleehodara* in *Udarnidan* and further mention that if all symptoms present in right side of *Udara* it will consider as *Yakrutdalayodar* [6]

The treatment principle of *Udara Roga* is *Nitya Virechana* and *Deepana Chikitsa*. *Nitya Virechana* was planned to eliminate the *Samchita Dosha* (Accumulated Toxins). As the patients is of *Madhyama Bala*, (moderate strength), *Avara Satva* (low mental Strength) and *Kapha - Vata* Prakriti. so *Erand Bhrast Haritaki* Churna was administered along with Luke warm water. *Erand Bhrast Haritaki* churna contains *Haritaki* (*Terminalia chebula*) which have thermogenic,

purgative, antioxidant, adaptogenic, antiprophylactic, antipyretic, hepatic stimulant and hepatoprotective [7] so it was used as a mild purgative to enhance bowel movements and support detoxification.

*Arogyavardhini Vati* (AV) is one multidrug, multifaceted classical formulation [8]. it is *Yakrit Prasadana* and helpful in *Pachanam* (~correcting the metabolism) of *Amavisha* and corrects the formation of vitiated *Dosha*. It contains hepatoprotective, anti - inflammatory, and detoxifying substances such as *Kutki* (*Picrorhiza kurroa*), *Haritaki* (*Terminalia chebula*), *chitrak*, *gugglu*, *shillajit* and *Tamra Bhasma*.

*Arogyavardhini Vati* acts as *hrudya* (cardiotonic) in *pandu* (Anaemia) & hepatomegaly. AV is *medonasaka* (can alleviate the diseases arising from hyperlipidemia) [9]. The oleo - gum - resin *Guggulu* an antioxidant, hypolipidemic and anti - inflammatory helps in getting rid of cholesterol by converting it into bile. It is an effective for removing the unwanted fats and balancing the cholesterol levels. [10] The herb *Chitrak* is an effective agent in relieving digestive disorders like loss of appetite, indigestion, piles, worms, colitis and various liver



diseases. (it is hepatoprotective and antihyperlipidemic).<sup>[11, 12, 13]</sup> It also cures chronic constipation by providing strength to the intestines due to *Shilajit* and other minerals present in it. AV stimulates the secretion of bile from the liver. It also has *Kutki* which again works as mild laxative and helpful for *Madhyam Kostha* person.<sup>[14]</sup>

M - Liv is an ayurvedic polyherbal syrup used to treat hepatobiliary disorders. It includes *Bhumyamalaki* (*Phyllanthus niruri*), *Kalmegh* (*Andrographis paniculata*), *Bhringraj* (*Eclipta alba*), *Kasni* (*Cichorium intybus*), *Raktapunarnava* (*Boerhaavia diffusa*), *Kakmachi* (*Solanum nigrum*) and *Kutki*, all of which have strong hepatoprotective qualities. According to clinical research, it increases bile flow in hepatic diseases, lowers high liver enzymes, and improves liver functioning.<sup>[15]</sup>

*Yakrutshoolvinashak Vati* was used specifically for liver pain and inflammation, aiding symptomatic relief and improving liver metabolism.

*Avipattikar Churna* is a herbo mineral compound formulation having clinical significance in the treatment of *amalpitta*. Majority of drugs in *Avipattikar Churna* are possessing *Kattu*, *Tikta*, *Madhura Rasa*, *Laghu*, *Ruksha*, *Ushna Sheeta Virya*, *Madhura* and *Kattu Vipaka*. The main ingredient of this Churna is *Trivrut*. It has *Bhedana*, *Rechana*, and *Shothahara* properties leading to *Pitta Virechana* and useful in *Yakritdalyodara*<sup>[16, 17]</sup>

To balance aggravated *Pitta* and soothe gastric mucosa, *Pittantak Yog* and *Kamadugha Rasa* were administered. These formulations are effective in cooling the system and reducing liver inflammation.

*Withania somnifera* (WS), widely known as *Ashwagandha*, is an Ayurvedic herb that has recently gained recognition as a treatment for anxiety and stress in the United States. Although used as a broad - spectrum remedy in India for centuries, WS has only recently been under investigation in laboratory settings. WS is categorized as an anti - inflammatory,<sup>[18, 19]</sup> antioxidant herbal supplement.<sup>[20]</sup>

In Ayurveda, tuberous roots of *Vidarikand* are used to treat many diseases such as *Daha*, *Raktapitta*, *Angamarda*, *Daurbalya*, *Sosha* etc and carries many therapeutic potentials like *Brimhan*, *Vrashya*, *Jivniya*, *Rasayan*, *Shukral*, *Balya* etc<sup>[21]</sup>

The combination of these formulations provided a holistic approach, addressing both the root cause and symptoms of AFLD.

#### 4. Conclusion

The sign and symptoms of patient of alcoholic fatty liver disease has been subsided within 3 month and there were no obvious abnormal changes found in USG and laboratory investigations after 45 days. Thus, this case study suggested that the Ayurveda approach efficiently manage the Alcoholic Fatty Liver Disease. Although much more research is needed to confirm the findings and generalization of the result there.

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