



## Case Report- Ayurvedic Management in Alcoholic Fatty Liver Disease

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### KEYWORDS

Alcoholic Fatty Liver Disease, Virechana, Trayantyadi Kashaya, Case report

### ABSTRACT:

**Introduction:** Alcoholic Liver Disease (ALD) covers a spectrum of disorders beginning from the fatty liver, progressing at times to alcoholic hepatitis and culminating in alcoholic cirrhosis.

**Chief Complaints:** A case report of a 37 years old male diagnosed with Alcoholic Fatty Liver Disease with complains of loss of appetite and nausea since two months.

**Diagnosis:** His ultrasound was suggestive of Hepatomegaly and fatty liver changes (Grade 2).

**Treatment:** He was advised with Panchakarma followed by Trayantyadi Kashaya as Shamanaushadhi.

**Results:** The radiological and haematological investigation changes after the given treatment revealed structural and functional improvement of the liver along with clinically significant improvement of the symptoms.

**Conclusion:** The use of Trayantyadi Kashaya and strict abstinence from alcohol consumption gave promising results and good prognosis with Ayurvedic treatment.

### Introduction:

Alcohol is one of the most common causes of chronic liver disease worldwide. Almost all heavy drinkers have alcoholic fatty liver, but only a minority develop clinically significant liver disease (ALD).[1] Alcoholic Liver disease comprises three major lesions, with the injury rarely existing in a pure form: (1) fatty liver, (2) alcoholic hepatitis, and (3) cirrhosis. Fatty liver is present in >90% of binge and chronic drinkers.[2,3,4,5,6] Quantity and duration of alcohol intake are the most important risk factors involved in development of alcoholic liver disease. Fatty liver or Steatosis, often presents as asymptomatic hepatomegaly and mild elevations in biochemical liver tests which reverses on withdrawal of ethanol & does not cause cirrhosis.

*Yakrit* is one among the *Matruja Avayava* originating from *Rakta Dhatu*[8] & is responsible for *Ranjana* of *Rasa Dhatu* & *Mala*. [9,10,11] By virtue of *Gunas* of *Madya*, it causes *Rakta Dushti*. [12] As *Yakrit* is *Moola* of *Raktavaha Srotas*, *Dushti* of *Rakta* causes *Yakrit Vikara* especially in *Madatyaya*.

### Case Report:

A 37 years old male, lower middle-class farmer from a rural area, presented to JSS Ayurveda Hospital, Mysuru with complains of loss of appetite and nausea since two months. He has a history of alcohol consumption on alternate days since ten years. The patient had consulted an allopathic physician for the above complaints and was advised oral medication (Tab. Pantoprazol 40mg SOS) which gave temporary relief. The condition aggravated with consumption of fried food, but the complaints recurred and the antacids did not provide any relief. Hence, he approached our hospital for better management.

### Clinical Findings:

Patient is not a known case of Type 2 Diabetes Mellitus, Hypertension or any other endocrine disorder. His family history was not found to be significant. The following history was noted; *Ahara- Madhura and Amla Rasa Pradhana*, mixed diet (non-vegetarian food once or twice a week) at irregular timings thrice a day in moderate quantities; *Vihara-* six hours of laborious work in the field (three hours in the morning and evening);



*Nidra*- five hours of sound sleep at night, 30 minutes to one hour of *Divaswapna* in the afternoon, after lunch; *Mala*- incomplete evacuation of hard stools once in two days; *Mootra*- three to four times a day, one time at night, not associated with any complaints; *Vyasana*- consumption of alcohol since the last ten years. He takes 100ml of Beer and Rum together during the late evening hours, after food on alternate days. He also consumes coffee, thrice every day with a teaspoon of sugar.

On *Ashtasthana Pareeksha*, *Nadi*- *Pitta Vata*; *Mala*- *Vikruta*; *Mootra*- *Prakruta*; *Jihwa*- *Alipta*; *Shabda*, *Sparsha*, *Druk*- *Prakruta*; *Akruti*- *Sthoola*.

All the vitals were stable. No abnormalities were detected on the examination of central nervous system, cardiovascular system, respiratory system and musculo-skeletal system.

On examination of gastro-intestinal system, generalised distension of abdomen and inverted umbilicus were noted. Abdominal movements of respiration were normal. There was no mass, scar, pulsations, peristalsis or enlarged veins. Skin over the abdomen was normal with absence of discolouration, stretched shiny skin, spider naevi, palmar erythema and striae. On palpation, the abdomen was soft and non-tender. On percussion, hepatic dullness and splenic dullness were noted. On auscultation, normal bowel sounds were heard.

#### Diagnostic Assessment:

His ultrasound was suggestive of Hepatomegaly and fatty liver changes (Grade 2) (Figure 1). His Liver Function Test (LFT) showed high values of total bilirubin, direct bilirubin, AST and ALT (Figure 2).

COLLECTION DATE : 15-07-2023 12:40 PM

ACCESSION NO : 5027WG011299

PATIENT NAME : [REDACTED]

REFERRED BY : [REDACTED]

CLIENTPATIENT ID :

REPORTING DATE : 15-07-2023 05:01 PM

PERM ID : MOHAM1507865027A

AGE / SEX : 37Yrs / Male

CENTRE : CS00001620

WALK IN - KCDC

#### USG - ABDOMEN & PELVIS

##### REPORT

**LIVER:** is enlarged in size and diffuse increase in echotexture noted. Surface appears smooth. No Intrahepatic focal lesions seen. No Intrahepatic biliary radical dilatation seen. **Liver size: 17.4 cm.**

**PORTAL VEIN:** is normal in caliber. Common Bile Duct: is normal in caliber, measures 4.1 mm.

**GALL BLADDER:** is adequately distended. Wall thickness is normal. Contents clear. No calculi seen within the lumen.

**PANCREAS:** is normal in size & echotexture. No focal lesions seen. Pancreatic duct is normal.

**SPLEEN:** is normal in size and normal in echotexture. No focal lesions seen. **Measures:** 12.2 cm.

##### KIDNEYS:

**Right kidney:** is normal in size and echotexture. Pelvicalyceal system is normal. Corticomedullary differentiation is maintained. No obvious calculus seen.

**Left kidney:** is normal in size and echotexture. Pelvicalyceal system is normal. Corticomedullary differentiation is maintained. No obvious calculus seen.

**U. BLADDER:** is adequately distended. No evidence of calculus or mass lesions. Wall thickness is normal with smooth contour.

**PROSTATE:** is normal in echotexture and size. No free fluid in the peritoneal cavity.

##### IMPRESSION:

- **HEPATOMEGALY WITH FATTY CHANGES. (GRADE II)**

**Suggested:** Clinical / lab correlation and further evaluation as indicated.

Note: All conditions/lesions cannot be ruled out on ultrasound. If clinically suspected, CT/MRI scan/clinical correlation with other pathology investigation is suggested. Sonography has limitation and is not for medico-legal purpose.

Figure 1: Ultrasound- Abdomen and Pelvis (Before Treatment)



Request No : 128165      Reg No : 170777 / IP 47567  
 Name : ██████████      Req.Date : 15-07-2023 06:54  
 Age / Gender : 37 Years / Male      Received Date/Time : 15-07-2023 08:18  
 Ward / Bed No : GENERAL MALE 01 GROUND FLOOR / GH-GF-01-03      Dept Receive : 15-07-2023 08:19  
 Ref. By Dr : Dr ██████████      Reporting Date : 15-07-2023 15:19

Specimen : Blood

	Results	Normal Range	Units	SI Units
<b>BIOCHEMISTRY</b>				
<b>LFT</b>				
TOTAL BILIRUBIN	1.9 (High)	0.1 - 1	mg/dl	
Direct bilirubin	0.8 (High)	Upto 0.2	mg/dl	
PROTEIN	6.8	6 - 8	gm/dl	
SERUM ALBUMIN	3.8	3.5 - 5.5	gm/dl	
GLOBULIN	3.0	2.5 - 3.5	gm/dl	
AST	196 (High)	Upto 40	U/L	
ALT	100 (High)	Upto 40	U/L	
ALP	130	37 - 147	U/L	
A/G RATIO	1.2:1			

End Of Report

*[Signature]*  
SIGNATURE OF TECHNICIAN

*[Signature]*  
SIGNATURE OF INCHARGE/HOD

\*This report is based on the specimen/s received and must be interpreted by qualified medical personnel only. The report needs to be correlated clinically and with results of other investigations as laboratory investigations are dependent on multiple variables. Please contact the lab for any clarifications. These results should not be reproduced in part.

Figure 2: Liver Function Test (Before Treatment)

The Nidana Panchaka and Samprapti Ghataka are enlisted in Table 1 and Table 2 respectively.

Nidana	Consumption of alcohol since ten years
Poorvaroop	Insignificant
Roopa	Loss of appetite and occasional nausea
Upashaya	Not taking alcohol
Anupashaya	Taking alcohol

Table 1: Nidana Panchaka

Dosha	Vata Kapha Pradhana Tridoshaja
Dooshya	Twak, Rakta, Mamsa, Ambu
Agni	Jatharagni, Dhatvagni

Ama	Jatharagni and Dhatvagni Mandya Janya Ama
Srotas	Rasavaha, Raktavaha, Mamsavaha, Medovaha Srotas
Srotodushti	Sanga
Udbhava Sthana	Amashaya
Sanchara Sthana	Sarva Shareera
Vyakta Sthana	Twak
Adhishtana	Twak
Rogamarga	Bahya

Table 2: Samprapti Ghataka



The case was diagnosed as Alcoholic Fatty Liver Disease on the basis of USG and LFT reports. *Nidanas* such as, *Madhura-Amla Rasa Pradhana Ahara Sevana*, *Madyapana* and *Ati-adhva* are the causes for *Pitta* and *Rakta Dushti* in this case, which has affected *Rasa*, *Rakta*, *Mamsa*, *Medo Dhatu*, as well as, *Yakrit* associated with *Kapha-Medo Dushti*, thereby causing *Yakrit Vruddhi*.

#### Therapeutic Intervention:

The principles of management of Alcoholic Liver Disease differ in Ayurveda, from other systems of medicine. *Yakrit* (liver) is said to be the seat of *Raktavaha Srotas* and *Pitta* is considered to be the *Mala* of *Rakta*. Hence the line of treatment adopted for *Yakrit Vikara* is *Pitta Shamana Chikitsa*. As *Virechana* is *Pittaharanam Shreshtam*, [13] *Virechana* followed by *Shamana Chikitsa* i.e., administration of *Trayantyadi Kashaya*, which is *Tikta Katu Rasa Pradhana*, is adopted.

The treatment given has been detailed in Table 3.

Chikitsa Krama	Aushadhi and Dosage	Date and Duration
Deepana-Pachana	T. Sootashekhara Rasa(125mg) 1-1-1 15 minutes before food	3 days (2-8-2023 to 4-8-2023)
Snehapana	Tiktaka Ghrita (30ml, 60ml, 90ml)	3 days 5-8-2023, Kshut Pradurbhava in 4 hrs 6-8-2023, Kshut Pradurbhava in 5.5 hrs 7-8-23, Kshut Pradurbhava in 6.5 hrs
Sarvanga Abhyanga followed by Bhashpa Sweda	Abhyanga with Murchita Tila Taila	3 days (8-8-2023 to 10-8-2023)
Virechana	Trivrut Lehya (40g)	1 day - 9 vegas (10-8-2023)
Samsarjana Krama	Ganji, Khichdi, Rice Rasam	3 days (11-8-2023 to 13-8-2023)
Shamanaushadhi	Trayantyadi Kashaya 15ml-15ml-15ml With 15ml Sukhoshna Jala, after food	30 days (14-8-2023 to 12-9-2023)

Table 3: Treatment Timeline

#### Follow-up & Outcome:

Patient was followed up one week after the completion of the *Shamanaushadhi* course, strict diet plan along with abstinence from alcohol. Ultrasound of abdomen and liver function test (LFT) were repeated. The ultrasound showed reduction in liver size and LFT showed significant reduction in total bilirubin, direct bilirubin, AST and ALT values. (Figures 3 & 4)

There was also significant reduction in his complaints of loss of appetite and occasional nausea, as assessed with

scales provided by NCBI (Tables 4 & 5). The outcomes are outlined in Table 6 with changes between the reports before and after treatment. The patient was comfortable and stable during the course of treatment and there were no adverse reactions or unanticipated events.

The patient visited our hospital every month for five consecutive months and was advised to continue with the same medication. Overall improvement was noticed. Later, he was advised to follow strict dietary precautions and complete abstinence from alcohol.



COLLECTION DATE : 20-09-2023 09:47 PM      REPORTING DATE : 20-09-2023 09:47 PM  
 ACCESSION NO : 5027WQ013839      PERM ID : MOHAM150785027A  
 PATIENT NAME : ██████████      AGE / SEX : 37Yrs / Male  
 REFERRED BY : ██████████      CENTRE : CSO001620  
 CLIENT/PATIENT ID : ██████████      WALK IN - KCDC

**USG - ABDOMEN & PELVIS**

**REPORT**  
**LIVER:** is normal in size and diffuse increase in echotexture noted. Surface appears smooth. No Intrahepatic focal lesions seen. No Intrahepatic biliary radial dilatation seen. Liver size: 14.2cm.  
**PORTAL VEIN:** is normal in caliber. Common Bile Duct: is normal in caliber, measures 4.1 mm.  
**GALL BLADDER:** is adequately distended. Wall thickness is normal. Contents clear. No calculi seen within the lumen.  
**PANCREAS:** is normal in size & echotexture. No focal lesions seen. Pancreatic duct is normal.  
**SPLEEN:** is normal in size and normal in echotexture. No focal lesions seen. Measures: 12.3 cm.  
**KIDNEYS:**  
**Right Kidney:** is normal in size and echotexture. Pelvicocalyceal system is normal. Corticomedullary differentiation is maintained. No obvious calculus seen.  
**Left Kidney:** is normal in size and echotexture. Pelvicocalyceal system is normal. Corticomedullary differentiation is maintained. No obvious calculus seen.  
**U. BLADDER:** is adequately distended. No evidence of calculus or mass lesions. Wall thickness is normal with smooth contour.  
**PROSTATE:** is normal in echotexture and size. No free fluid in the peritoneal cavity.

**IMPRESSION:**  
**FATTY LIVER**

Suggested: Clinical / lab correlation and further evaluation as indicated.  
 Note: All conditions/lesions cannot be ruled out on ultrasound. If clinically suspected, CT/MRI scan/clinical correlation with other pathology investigation is suggested. Sonography has limitation and is not for medico-legal purpose.

Figure 3: Ultrasound- Abdomen and Pelvis (After Treatment)

Request No : 1128720      Reg No : 1170777 / IP 47567  
 Name : ██████████      Req.Date : 20-09-2023/06:28  
 Age / Gender : 37 Years / Male      Received Date/Time : 20-09-2023/08:21  
 Ward / Bed No : GENERAL HALL 01 GROUND FLOOR / GH-GF-01-03      Dept Receive : 20-09-2023/08:22  
 Ref. By Dr : ██████████      Reporting Date : 20-09-2023/12:44  
 Cl. Diagnosis :

Specimen : Blood

	Results	Normal Range	Units	SI Units
<b>BIOCHEMISTRY</b>				
FBS	80	70 - 100	mg/dl	
PPBS	92 (Low)	110 - 150	mg/dl	
<b>LFT</b>				
TOTAL BILIRUBIN	1.0	0.1 - 1	mg/dl	
Direct bilirubin	0.3 (High)	Upto 0.2	mg/dl	
PROTEIN	7.0	6 - 8	gm/dl	
SERUM ALBUMIN	3.8	3.5 - 5.5	gm/dl	
GLOBULIN	3.2	2.5 - 3.5	gm/dl	
AST	56 (High)	Upto 40	U/L	
ALT	38	Upto 40	U/L	
ALP	121	37 - 147	U/L	
A/G RATIO	1.1:1			

Signature of Technician: ██████████      Signature of Incharge/MO: ██████████

\*This report is based on the specimen/s received and must be interpreted by qualified medical personnel only. The report needs to be correlated clinically and with results of other investigations as laboratory investigations are dependent on multiple variables. Please contact the lab for any clarifications. These results should not be reproduced in part.

Figure 4 : Liver Function Test (After Treatment)

Oral intake altered without significant weight loss or malnutrition; oral nutritional supplements indicated	2
Associated with significant weight loss or malnutrition; tube feedings indicated	3
Life threatening consequences, urgent interventions required	4

Table 4 : Grading for Anorexia

Nausea Scale by NCI	GRADE
Loss of appetite without alteration in eating habits	1
Oral intake decreased without significant weight loss, dehydration or malnutrition	2
Inadequate oral caloric or fluid intake; tube feedings or hospitalization indicated	3
Life threatening	4

Table 5: Grading for Nausea

1	INVESTIGATION	BEFORE TREATMENT	AFTER TREATMENT
	LIVER FUNCTION TEST	15-7-2023	20-9-2023
	S.G.O.T.(AST)	196 U/L (High)	56 U/L (High)
	S.G.P.T (ALT)	100 U/L (High)	38 U/L
	SERUM ALKALINE PHOSPHATE (ALP)	130 U/L	121 U/L
	SERUM DIRECT BILIRUBIN	0.8 mg/dL (High)	0.3 mg/dL (High)
	SERUM TOTAL BILIRUBIN	1.9 mg/dL (High)	1.0 mg/dL (High)
	A/G RATIO	1:2:1	1:1:1
2	USG of Abdomen & Pelvis	15-7-2023	20-9-2023

Anorexia Scale by NCBI	GRADE
Loss of appetite without alteration in eating habits	1



	<b>Impression:</b>	Hepatomegaly with fatty changes. (Grade 2) Liver size: 17.2 cm	Fatty Liver. Liver size: 14.2 cm
<b>3</b>	<b>INVESTIGATION</b>	<b>BEFORE TREATMENT</b>	<b>AFTER TREATMENT</b>
	<b>Anorexia Scale by NCBI</b>	<b>15-7-2023</b>	<b>20-9-2023</b>
	<b>Grade:</b>	Grade 2	Grade 1
<b>4</b>	<b>Nausea Scale by NCI</b>	<b>15-7-2023</b>	<b>20-9-2023</b>
	<b>Grade:</b>	Grade 2	Grade 1

Table 6 : Treatment Outcome

**Discussion:**

*Madya* possesses *Teekshna*, *Ushna* and *Vidahi Guna*. If consumed in excessive quantity, it causes *Pitta Prakopa* (*Dravataha Vriddhi* of *Pitta*) and leads to both *Bhootagni* & *Dhatvagni Mandya*, resulting in *Amadosha Utpatti*, thereby causing *Aruchi* and *Hrullasa*.

Alcoholic Fatty Liver Disease is not compared exactly to any one of the disorders mentioned in Ayurveda like *Pandu*, *Kamala*, *Yakrutodara*, *Jalodara*, *Raktapitta* or *Madatyaya*. Acharya Bhavaprakasha and Madhavakara have mentioned *Yakrit Vikara* as a separate chapter in which *Madya* is one of the main etiologies. Considering the similarities between these diseases and Alcoholic Fatty Liver Disease, *Pitta Shamana Chikitsa* was adopted in the form of *Virechana*- for *Shodhana* and *Trayantyadi Kashaya*- for *Shamana*.

**Snehapana:**

*Snehapana* is the *Purvakarma* of *Virechana*. Acharya Vagbhata has restricted the usage of *Snehapana* to little quantities, mentioning that *Virechana* should be performed only in *Alpa Snigdha Avastha*, [14] so *Tiktaka*

*Ghrita* is administered in the form of *Sadhyosneha* in this study.

**Virechana:**

*Trivrit Lehya* used in the *Virechana Karma*, is a *Sukha Virechaka* with *Laghu*, *Rooksha* and *Teekshna Guna* and *Ushna Virya*. It contains A & B Turpethum which gets hydrolysed in small intestine by lipase enzyme to give Turpethenic acid which is an irritant and requires bile for hydrolysis. It is anti-inflammatory and hepatoprotective in nature and it is also responsible for purgative action. [15]

**Trayantyadi Kashaya:** [16,17,18,19,20,21,22,23]

*Trayantyadi Kashaya* is a formulation which is explained in Ashtanga Hridaya, *Vidradhi Chikitsa Adhyaya*. Its constituents are *Tikta* and *Katu Rasa Pradhanya Dravyas* which are useful in loss of appetite or anorexia. *Amapachana* effect of *Patola* and *Haritaki* present in the *Kashaya* might have helped in the reduction of the nausea. *Ruchya Karma* of *Vibhitaki*, *Amalaki*, *Nimba*, *Yashtimadhu* and *Katuki* might have reduced anorexia. *Deepana Karma* of *Haritaki*, *Katuki*, *Patola* and *Pachana Karma* present in *Patola* might have corrected *Dooshita Pachaka Pitta* and *Bodhaka Kapha* to reduce anorexia. *Agni Vriddhi* caused by *Deepaniya* drugs like *Haritaki*, *Katuki*, *Patola* present in *Kashaya* leading to proper digestion and assimilation of the consumed food further facilitates proper *Dhatu Poshana* leading to increase in the *Bala* of the patient.

The phytoconstituents present in *Trayantyadi Kashaya* have helped in arresting the production of inflammatory cytokine and regenerating hepatocytes and might have also helped in the reduction in Total Bilirubin, Direct Bilirubin, AST and ALT values.

**Limitations:**

Abstinence from alcohol and adherence of diet was difficult to monitor during *Shamanaushadhi* course and follow-up period.

**Strengths:**

It was noticed that the patient condition improved considerably. So, it can be understood that the given Ayurvedic medicines are effective in the management of Alcoholic Fatty Liver Disease.



The improved was found with only one course of *Shodhana-Shamana Chikitsa* along with strict diet and abstinence from alcohol. Repeated course of *Shodhana* along with continuation of the diet and abstinence from alcohol can provide long-term results.

### Conclusion:

There was a clinically significant improvement in anorexia and nausea along with significant changes in abdominal ultrasound and reductions in key liver function markers, strongly supporting the combined effect of *Virechana* followed by *Trayantyadi Kashaya* in the management of Alcoholic Fatty Liver Disease. Abstinence is the key intervention in management of fatty liver and leads to normalisation of LFT and imaging/ histology.

### Informed Consent:

Written and informed consent was obtained from the patient before the initiation of treatment. Written and informed consent for the publication of clinical details was obtained from the patient. A copy of the consent form is available for review by the Editor of this journal.

### Sources of Funding:

Nil.

### Conflicts of Interest:

Nil.

### Acknowledgement:

I thank my HOD, Guide, fellow authors/Contributors for their support and guidance in the preparation of this case report .

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