



# Ayurvedic Intervention in the management of Non-Alcoholic Steato Hepatitis – A case report

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## ABSTRACT

Non-alcoholic fatty liver disease (NAFLD) is a broad term for a range of liver conditions affecting people who drink little to no alcohol. The main characteristic feature of NAFLD is too much fat being stored in liver cells. Considering the report showing elevated liver enzymes and bilirubin, the case was diagnosed as inflammatory stage of NAFLD that is Non-Alcoholic Steato Hepatitis (NASH). So, *kapha vridhhi* in *pitta sthana* can be considered as fatty liver. *Virechana* is good for both *pitta* and *kapha* thus, it was chosen.

A remarkable change in levels of liver enzymes and bilirubin was observed with *pachana-deepana*, *nitya virechanam*, *shamanoushadhi* and diet restriction of 30 days. According to Ayurveda, the *yakrit* is a *pitta sthana*. Due to the improper metabolism of consumed lipids and carbohydrates, there will be *agnimandya* leading to *sama kapha*. The *sama rasa dhatu* entering *yakrit* transforms into *sama rakta dhatu* with *ranjaka pitta*. *Yakrit* is considered as the *raktavaha srotomula* and due to the *asrayasrayi bhava* of *rakta* and *pitta*, *pitta* is also gets vitiated. As it is a *santarpanotha vyadhi*, *apatarpanam* is the line of management. Thus for *rukshana*, *virechana* is an ideal intervention in this case. As the patient showed good response in short period of time, the scope of Ayurveda approach to treat liver diseases quickly, successfully and cost effectively is discussed in the paper.

**Keywords:** Nitya virechana, NAFLD, Ayurveda, Steatohepatitis, Case report

## 1.INTRODUCTION

Non-alcoholic fatty liver disease (NAFLD) is a broad term for a range of liver conditions affecting people who drink little to no alcohol. Main characteristics of NAFLD is too much fat stored in liver cells. Among the stages for NAFLD, Non- Alcoholic Steatohepatitis (NASH) is an aggressive form of fatty liver disease, which is marked by liver inflammation which may progress to advanced scarring (cirrhosis) and liver failure.<sup>1</sup> This damage is very similar to the damage caused by heavy alcohol use. Most patients remain asymptomatic until they develop cirrhosis of the liver.

In Ayurveda, the *yakrit* is the *sthana* of *pitta*. Due to improper disintegration of lipids and carbohydrates, there will be *agnimandya* leading to *sama kapha*. This *kapha vridhhi* in *pitta sthana* must be considered as fatty liver. The use of modern pharmacological therapies like insulin sensitizers, metformin, TZD class of drugs shows reversion of improvement after discontinuation of drug making it likely that long term therapy with these agents is necessary. The use of TZD is commonly associated with side effects of lower extremity edema and weight gain.<sup>2</sup> All these complications could be corrected by using this cost-effective herbal formulation of *avipatti churna* for *nitya virechana*. Here is a case report of NASH treated completely and successfully based on Ayurveda principles within a short duration of time.

## 2.CASE PRESENTATION

The patient was a 22-years-old male having a blood report of increased SGOT, SGPT, bilirubin and was asymptomatic. It was an incidental finding as a part of medical clearance to go abroad.

**PERSONAL HISTORY-** The personal history of the patient reveals a sedentary lifestyle with regular intake of meat, fast food, untimely diet, and excessive intake of oily, fried and spicy food which might have been attributed to the condition. The patient was also leading a sedentary lifestyle. No other specific causative factor was found relevant in the condition.

**FAMILY HISTORY-** Unaware of any relevant family history.

## 3.CLINICAL FINDINGS

*Darshana-* He had moderate built (BMI-25 kg/m<sup>2</sup>)

*Sparsana-* Abdominal palpation: Liver non-palpable

*Prashna-* Slight fatigue and anorexia for the past 3 months

#### 4. TIMELINE

Figure 1: Timeline

	MEDICINES	DOSE	DURATION	OBSERVATION
0 <sup>th</sup> VISIT 6/6/23	Guluchyadi kashayam Avipathi churna Arogyavardhini vati + Diet restriction (avoid fried food, red meat, salty food, aerated drinks)	30 ml twice daily before food 5gm churna at night 1 tab twice daily with kashaya	15 days	Slight fatigue Anorexia
1 <sup>st</sup> VISIT 22/6/23	Guluchyadi kashayam Avipathi churna Arogyavardhini vati + Diet restriction	30 ml twice daily before food 5gm churna at night 1 tab twice daily with kashaya	15 days	Fatigue and anorexia reduced
2 <sup>nd</sup> VISIT 4/7/23	Diet restriction only		3 months	Assymptamatic

#### 5. DIAGNOSTIC ASSESSMENT

##### Investigations

Blood routine was found to be within the normal limits. Liver function test showed elevated SGOT, SGPT and bilirubin.

GASTRO & VASCULAR CENTRE				
Name	[REDACTED]		Date	: 6-Jun-2022 8:04 am
Age/Sex	[REDACTED]		Rec. No	[REDACTED]
Patient Id	[REDACTED]		Indoor No.	[REDACTED]
Ref. By Dr.	[REDACTED]			
BIOCHEMISTRY				
TEST	RESULTS	Unit	REFERENCE RANGE	
SGOT	: 396.9	U/L	0 - 40 U/L	
SGPT	: 155.5	U/L	0 - 40 U/L	
Total Bilirubin	: 6.8	mg/dl	0.2 - 1.2 mg/dl	
Direct Bilirubin	: 3.8	mg/dl	0.1 - 0.4 mg/dl	
Indirect Billrubin	: 3	mg/dl	0.1 - 0.8 mg/dl	

Figure 2 before treatment

**Diagnosis:** NASH

The patient was asymptomatic. The LFT showed elevated bilirubin and liver enzymes indicating damage of hepatocytes. The SGOT-SGPT ratio is more than 2 which suggests hepatitis. The patient was tested negative for viral hepatitis and was non- alcoholic. Thus, suspects non- alcoholic fatty liver disease. Among the 4 stages of NAFLD, bilirubin increase occurs after the onset of inflammation. In this case, as bilirubin was increased so it might be a stage of steatohepatitis. In Ayurveda, it can be compared to *yakritodara*.

**6.THERAPEUTIC INTERVENTION**

In the *samprapti* of *yakritodara*, it is said that due to consumption of *vidahi* and *abhishyandi ahara*<sup>3</sup>, *kapha dushti* occurs in *pitta sthana* that leads to *udara*. As it is a *santarpanotha vyadhi*<sup>4</sup>, *apatarpanam* is the line of management. Here the treatment was focused in 3 dimensions -*pachana deepana chikitsa* for removing the *agnimandya*, *nityavirechana* for *shodhana* of *sama pitta*, and *kapha* with *arogyavardhini vati* as *shamanoushadhi*.

**Pachana- deepana**

*Guluchyadi kashayam* is indicated for *pitta* and *kapha* aggravated conditions which has a *pachana- deepana* effect<sup>5</sup>. *Guluchyadi kashayam* 30 ml was given twice daily before food for 30 days.<sup>6</sup>

Table 1: Ingredients of *kashayam*<sup>7</sup>

Ingredients	Quantity
Guduchi – <i>Tinospora cordifolia</i>	1 Part
Dhaniaka – <i>Coriandrum sativum</i>	1 Part
Rakta Chandana – <i>Pterocarpus santalinus</i>	1 Part
Nimba- <i>Azadirachta indica</i>	1 Part
Padmaka – <i>Prunus cerasoides</i>	1 Part

**Nitya virechana**

For correcting vitiated *pitta* or *pittanubandha* condition *virechana* is considered ideal. As *rukshana* is necessary<sup>8</sup> and *yakrit* is the *pitta sthana*, *virechana* was chosen. In the *samprapthi* of *udara*, it is said that *prana* and *apana vata gati*<sup>9</sup> are getting obstructed To

prevent *vata vridhi* with *dosha nirharana nitya virechana* is ideal<sup>10</sup> because *nithya virechana* is *dosha nirharana* done in *stoka matra* ( little amount ) for *bahun varan* (for many times)<sup>11</sup>. Among the types of *virechana* as per Sarangadhara Samhitha , *rechana* is the type in which the fluid from interstitial space is drained from all over the body. So in-order to drain the *kleda* from *yakrit* for an *udara rogi*, *rechana* has to be done. For *rechana*, *trivrit* may be the ideal drug of choice and as *avipathi churna* contains *trivrit*, it is the best.<sup>12</sup>

Ingredients	Quantity
Trikatu (pepper,long pepper, ginger)	1 part
Musta (Cyperus rotundus)	1 part
Vidanga (Embelia ribes)	1 part
Patra (Cinnamom tamala)	1 part
Trivrut (Operculina turpethum)	9 parts
Ela (Eletteria cardamomum)	1 part
Amalaki (Embelica officinalis)	1 part
Twak (Eletteria cardamomum)	1 part
Sita	18 parts

Table 2:Ingredients of churna

5gms *avipatti churna* was given with luke warm water at night after food aimed at producing 3 to 4 vegas in patient for 30 days.

### **Shamanoushadhi**

*Arogyavardhini vati* is *sarvarogopashamani* and it is *tridoshahara* .

It is indicated for *yakrit vikara*.<sup>13</sup>

Ingredients	Quantity
Haritaki(Terminalia chebula)	2 parts
Bibhitaki (Terminalia bellerica)	2 parts
Amalaki (Embelica officinalis)	2 parts
Shilajatu(Asphaltum)	3 parts
Guggulu(Commiphora mukul)	4 parts
Chitakamoola (Plumbago zeylanica)	4 parts
Katuki (Picorrhiza kurroa)	22 parts
Shuddha parada (Herbal purified mercury)	1 part
Loha bhasma (ash obtained from iron)	1 part
Shuddha gandhaka (Herbal purified sulphur)	1 part
Abhraka bhasma (ash obtained from mica)	1 part
Tamra bhasma (ash obtained from copper)	1 part
Nimba (Azadirachta indica)	As required

Table 3:Ingredients of vati<sup>14</sup>

*Arogyavardhini vati* is given in dose of 1 tablet twice daily before food for 30 days.

## 7.RESULTS-OUTCOME OF INTERVENTION

TEST DESCRIPTION	RESULT	REFERENCE RANGE
<b>BIOCHEMISTRY</b>		
<b>Liver Function Test</b>		
Bilirubin (Total)	2.4 mg/dl	0.3 - 1.2 mg/dL
SGOT (AST)	136.4 IU/L	10- 46 IU/L
SGPT (ALT)	270.4 IU/L	10 - 49 IU/L
Alkaline Phosphatase	174 IU/L	Children : 180- 1200 IU/L Male : 80 - 306 IU/L Female : 64 - 306 IU/L
Total protein	7.4 gm/dl	6.2 - 8.0 gm/dl
Albumin	4.8 gm/dl	3.5 - 5.5 gm/dl
Globulin	2.6 gm/dl	2.4 - 3.7 gm/dl
A/G Ratio Method: Calculated	1.84	

Figure 3:After 15 days of treatment

Test Description	Observed Value	Reference Range & Units
<b>BIOCHEMISTRY</b>		
<b>LIVER FUNCTION TEST - SERUM</b>		
Bilirubin Total,(Diazo/Cobas C 311)	1.5 mg/dl	0.2 - 1.2 mg/dl
Bilirubin Direct(Diazo/Cobas C 311)	0.4 mg/dl	0.2 - 0.4 mg/dl
Bilirubin Indirect	1.10 mg/dl	0.2 - 0.8 mg /dl mg/dl
SGOT(AST),(IFCC Kinetic/Cobas C 311)	60 U/l	Up to 41 U/L U/l
SGPT(ALT),(IFCC Kinetic/Cobas C 311)	131 U/l	Up to 41 U/L U/l
Alkaline Phosphatase(IFCC/Cobas C 311)	112 U/l	40 - 129 U/l
Protein(Total),(Blurel/Cobas C 311)	7.9 gm/dl	6.6 - 8.7 gm/dL gm/dl
Albumin,(BCG /Cobas C 311)	4.1 gm/dl	3.5 - 5.0 gm/dl
Globulin	3.80 gm /dl	2.5 - 3.5 gm/dl gm /dl
A/G Ratio	1.08	1.2 - 2.5

Figure 4:After 30 days of treatment

DATE	REPORT	TREATMENT
6/6/2022	SGOT-369U/L SGPT-155.5U/L SGOT/SGPT>2 TOTAL BILIRUBIN-6.8mg/dl DIRECT-3.8mg/dl INDIRECT-3mg/dl	
7/6/2022		GULUCHYADI KASHAYA 15 DAYS AROGYAVARDHINI VATI 15 DAYS NITYA VIRECHANA with AVIPATHI CHURNA 15DAYS
22/6/2022	SGOT-136.4U/L SGPT-270.4U/L SGOT/SGPT<1 TOTAL BILIRUBIN-2.4mg/dl	Same medicines for 15 days
4/7/2022	SGOT-60U/L SGPT-131U/L TOTAL BILIRUBIN-1.5mg/dl DIRECT-0.4mg/dl INDIRECT-1.1mg/dl	

The reports taken before treatment showed SGOT:SGPT RATIO > 2, Total Bilirubin almost 7 mg/dl as in *figure 1*. 15 days of treatment brought SGOT:SGPT ratio to less than 2 and Total Bilirubin down to almost 2 mg/dl as shown in *figure 2*. After 30 days of treatment a remarkable change in liver enzymes and total bilirubin was produced as shown in *figure 3*.

## 8. DISCUSSION

Patient was leading a sedentary lifestyle with unhealthy dietary patterns. Diets that are *guru*, *vidahi* and *abhishyandi*<sup>15</sup> were mostly consumed by the patient. The *vishamashana* and *adhyashana* led to increase of *kapha dosha* in *pitta sthana* like *yakrit* causing *jadaragni mandya*<sup>16</sup>. Thus, *sama rasa dhatu* formation happens which further produces *sama rakta dhatu* with *ranjaka pitta*. As *yakrit* is the *raktavaha srotomula*, due to *asraya- asrayibhava* of *rakta* and *pitta*, *pitta* also gets vitiated.

The treatment was aimed at *pachana deepana*, *nityavirechana* and *shamana*. *Pachana* and *deepana* was achieved with *guluchyadi kashayam*<sup>17</sup> which is *pitta* and *kapha doshahara*. It has effects on *rasa*, *rakta* and *meda dhatu*. *Virechana* is effective in *pitta* and *pittanubandha* conditions. *Nitya virechana* is *virechana* done on a daily basis<sup>18</sup>. This flushes out the toxins, excess mucous from GI tract, clears congestion from the liver and thus improves metabolism and fat digestion. For removing *sama pitta*, *avipatti choorna* is good. *Triphala* is a best antioxidant combination of 3 drugs, *vidanga* is antimicrobial, *musta* removes indigestion, *ela* and *patra* relieves pain and inflammation, and *lavanga* is an antioxidant. As *avipatti churna* is mild it is easy to consume without causing complications also. *Arogyavardhini vati* is proved to have hepatoprotective activity, it balances fats in the body (hypo lipidemic effect)<sup>19</sup> and removes toxins. The outcome was the combined effect of *pachana deepana*, *nitya virechana* and *shamana chikitsa* along with *pathya sevana*. The patient was advised to avoid fried and oily diets.

## 9. CONCLUSION

“*Roga sarve api mandagnou sudaram udaraani cha*” According to Ayurvedic concept, the diminished *agni* is responsible for all diseases. *Agnivardhana*, *Srotoshodhan*, and *nidana parivarjana* are essential for the *samprapti vighatana* of *udara roga*.

In this case of NASH, *sama kaphahara* and *pittahara* line of treatment was adopted to manage the condition. *Nitya virechana* helps to remove the *srotorodha* while *deepana pachana* creates *agnideepti* and *samanoushadhis* removes *malasachaya* while *pathya* prevents further *dosha dushti*. *Nitya virechana* along with *samanoushadhi* and *pathya* were found effective in reducing bilirubin, SGOT and SGPT. Also, no signs of relapse were seen for the next 3 months. Eventhough *udara* is considered



as a *krichra sadhya vyadhi*<sup>20</sup> that is difficult to get cured as per Ayurveda, as the patient showed good response in a short span of time, the scope of the Ayurvedic approach to treat NASH quickly, successfully and cost effectively is discussed in this paper.

## 10. PATIENT PERSPECTIVE

I feel delighted that I recovered within a short period of time. Also I could produce a normal LFT report for medical clearance within 1 month. Moreover it was OP based treatment taking minimum medications.

## 11. INFORMED CONSENT

Informed consent was taken from the patient for this study.

## 12. SOURCE OF FUNDING

No funding agencies involved in the study.

## 13. CONFLICT OF INTEREST

None

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