



ORIGINAL RESEARCH PAPER

Ayurveda

MANAGEMENT OF NON-ALCOHOLIC FATTY LIVER DISEASE (NAFLD) THROUGH AYURVEDA: A CASE REPORT

KEY WORDS: Hepatic Steatosis, Ayurveda, Poly herbo-mineral compound, YashtimadhuChurna.

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ABSTRACT

Non alcoholic Fatty Liver Disease (NAFLD) is a common chronic liver disease. It encompasses the entire spectrum of fatty liver disease in individuals who do not consume alcohol or consumes in very small quantities, ranging from hepatic steatosis (fatty liver) to steatohepatitis and cirrhosis. Depending upon the cause and amount of accumulation, fatty change may be mild and reversible, or severe producing irreversible cell injury and cell death. Disturbances of lipid metabolism in liver due to various etiological factors lead to Fatty Liver. In Ayurveda, scattered references of Fatty liver is found and it can be considered under *Yakrit roga* and *Medoroga*, as a *Santarpanjanya Vyadhi*. A 30 year old female patient with complaints of fatigue, anorexia, bloating and pain in the upper right quadrant of the abdomen from last 3 months came to the Department of Kayachikitsa, Govt. Ayurvedic College and Hospital, Guwahati. The patient was treated with *Triphalyadi yoga* and *Yashtimadhu churna* along with honey as *anupana* for a period of 1 month. After 1 month of treatment a significant improvement in both subjective and objective parameters was observed.

INTRODUCTION

The definition of NAFLD requires that (a) there is evidence of hepatic steatosis, either by imaging or by histology and (b) there is no cause for secondary fat accumulation such as significant alcohol consumption^[1]. Fatty liver is characterised histologically by triglyceride accumulation in the liver exceeding 5-10% by weight. In the majority of patients, NAFLD is associated with metabolic risk factors such as obesity, diabetes mellitus and dyslipidemia. NAFLD is histologically further categorized into non alcoholic fatty liver (NAFL) and non alcoholic steatohepatitis (NASH). NAFL is defined as the presence of hepatic steatosis with no evidence of hepatocellular injury in the form of ballooning of the hepatocytes. NASH is defined as the presence of hepatic steatosis and inflammation with hepatocyte injury (ballooning) with or without fibrosis. According to World Health Organisation, the number of chronic liver diseases, including NAFLD has recorded daysteady growth in the recent years^[2]. It not only occurs in obese people but 7% of lean population is affected too. The prevalence of NAFLD in India ranges from 16 to 32% of urban population and 9% of rural population. The prevalence increased significantly 80-90% in obese adult, 60% in patients with hyperlipidemia and 30-50% in diabetic patients. The overall prevalence of it in western countries varies from 15-40% and in Asian countries from 9-40% in India^[3,4].

Triphalyadi Yoga^[5] mentioned in *Charaka Samhita* in *Panduroga Chikitsa Adhyaya* along with *Yashtimadhu*^[6] (*Glycyrrhiza glabra* Linn) *churna* is taken for the study.

It consists of *Amalaki* (*Emblica officinalis* Gaertn), *Haritaki* (*Terminalia chebula* Retz), *Vibhitaki* (*Terminalia bellerica* Roxb), *Haridra* (*Curcuma longa* Linn), *Daruharidra* (*Berberis aristata* Dc), *Kutki* (*Picrorrhiza kurroa* Royle Ex. Benth) and *Lauhabhasma* (Iron Oxide).

CASE PRESENTATION:

A 30-year old female patient, reported to Kayachikitsa OPD, Govt. Ayurvedic College and Hospital, Jalukbari, Guwahati with complaints of fatigue, anorexia, bloating and pain in the upper right quadrant of the abdomen from last 3 months. She came with an USG report which showed bright echotexture of the liver. No focal or diffuse lesion is seen. Intrahepatic biliary radicles and vascular structures are normally visualised. (Grade 2 fatty liver/Moderate hepatic steatosis). The patient was a known case of Hypothyroidism and was on medication (Thyronorm 25mcg) from the past 2 years. The patient was non vegetarian, with decreased appetite and sleep. She had irregular bowel habits. The patient had no history of addiction. On systemic examination, mild distension of abdomen was found with mild tenderness over the right

hypochondrium. On abdominal percussion, tympanic sound was heard. No other abnormality was detected during systemic examination.

MATERIALS AND METHODS:

The poly herbo-mineral research drug (500 mg) was given in *churna* form along with *Yashtimadhu Churna* (2g) after food with honey twice daily were advised for 1 month. A follow up on 15th and 30th day was planned.

The trial research drug contained:

- Amlaki = 1 part
- Haritaki = 1 part
- Vibhitaki = 1 part
- Haridra = 1 part
- Daruharidra = 1 part
- Kutki = 1 part
- Lauha Bhasma = 1 part

Along with oral medications *Pathya ahara* and regular brisk walking for at least 30 minutes a day was also advised.

ASSESSMENT CRITERIA

The subjective grading criteria has been summed up in Table No. 1

Table No. 1

Bloating of Abdomen	No bloating	0
	Mild	1
	Moderate	2
	Severe	3
Pain Abdomen	No Pain	0
	Mild	1
	Moderate	2
	Severe	3
Loss of appetite	No loss of appetite	0
	Mild anorexia	1
	Moderate anorexia	2
	Severe anorexia	3
Fatigue	No fatigue	0
	Patient likes to stand in comparison to walk	1
	Patient likes to sit in comparison to stand	2
	Patient likes to lie down in comparison to sit	3

OBSERVATION AND RESULT

After 15 days and 30 days of follow up the following were observed

Table 2: Observations on Subjective Criteria:

Subjective Parameters	Before treatment	After treatment	
		On 15 th day	On 30 th day

Fatigue	2	1	0
Anorexia	2	1	0
Bloating	1	0	0
Pain abdomen	1	0	0

Table 3: Observations on Objective Criteria:

Objective Criteria	Before treatment	After treatment	
		On 15 th day	On 30 th day
SGOT/AST	32	28	26
SGOT/ALT	46	36	26
GCP	28	29	26
ALT	111	103	103

The mode of action of the individual drugs of the trial compound are-

- *Triphala*^[7] has *Deepaniya* action which improves metabolism, *Sleshma-Pittaghna* which reduces the aggravated *Kapha* and *Meda*, *Rasayni*(Rejuvenation), *Ruchikara* properties which improves anorexia.
- *Haridra*^[8] due to its *Tikta- Katu rasa, Ushna Virya, Katu Vipaka* and *Laghu, Ruksha Guna* makes it to be *Deepaniya* and *Pachaniya*. *Deepaniya* helps in improving metabolism, *Pachaniya* property helps in *Ama pachan*, *Lekhaniya* helps in removing the excess fat and clearing out channels and improving the function of Liver.
- *Daruharidra*^[9] has *Tikta-kasaya rasa, Laghu-Ruksha Gunba, Katu Vipaka* and *Ushna Virya*. Due to its *Lekhaniya* property it does *Lekhana* of the excess deposited *Meda* in the liver.
- *Kutki*^[10] has *Tikta Rasa, Ruksha-Laghu Guna, Katu Vipaka* and *Shita Virya*. It has *Deepaniya* action which improves metabolism, *Ruchikara* which improves anorexia, does *Ama pachana, Bhedaniya* which excretes out the *baddhamala*.
- *Lauha Bhasma*^[11] is *Ruksha, Tikta, Kasaya, Madhura*. It is *Tridoshanashaka*. It has *Deepaniya* action which improves metabolism, *Lekhaniya* action which scrapes out the excess fat, *Yogavahi* action which helps in easy penetration of the drug in the system, *Rasayani* (Rejuvenation), *Medonirvahanam* which helps in reducing the excess *Meda*.
- *Yashtimadhu*^[6] has *Deepaniya* properties helps in improving metabolism, *Pachaniya* property helps in *Ama pachan, Rochana* which stimulates appetite, *Rasayani* (Rejuvenation), *Yakrituttejaka*.

Hypothesis on the probable mode of action of the trial compound (Triphalyadi Yoga + Yashtimadhu churna) are-

- It acts as *Deepaniya* and *Pachaniya*, so it helps in *Ama Pachana*.
- The drug has the action of *mridu virechan* which helps in elimination of aggravated *Pittadosha*.
- It is *Kapha-Medohara* due to which it is useful in pacification of aggravated *Kapha Dosha* and vitiated *Meda Dhatu* found in Fatty liver.
- The drug has *tridoshaghna* effect for which it helps in normalisation of activities of *Vata dosha* also.
- As *Yashtimadhu* is *Guru, Snigdha, Madhura* and *Shita Virya*, so it helps in balancing the *Pitta dosha* in the system and helps in enhancement of the action of *Triphalyadi Yoga*.
- Therefore, the trial compound acts by following *Prakriti sama samaveta siddhanta*.

Hypothesis on the mode of action of the trial compound (Triphalyadi Yoga + Yashtimadhu churna) on the symptoms are-

- As *Triphalyadi Yoga* having *Deepana- Pachana* effect, so it helps in correction of *Anorexia* and *Bloating* by correcting the *Samapitta* and normalising the *Pittadosha* activities.
- It helps in correcting fatigue as the trial compound contains *Lauha Bhasma* and *Yashtimadhu Churna* which are *Rasayan* in nature.
- As pain occurs due to *Ama* and *Vata* activity, the *Deepana- Pachana* effect along with the *tridoshaghna* effect will be helpful in subsiding the pain.

CONCLUSION

Hepatic Steatosis is a common predicament in society due to change of lifestyle and food practices. Hepatic steatosis or Fatty liver is increasing day by day and modern science has no established pharmacological treatment. Use of Metformin, Thiazolidinediones, Anti-oxidants, Statins and Ursodeoxycholic acid are mentioned but none are FDA approved. Ayurveda has immense potential in the management of Non-Communicable Diseases, and Fatty liver is one among them.

This was a single case study on Grade 2 Fatty Liver. *Triphalyadi Yoga* was given for oral administration 500 mg twice daily with *aanupan* of honey for 30 days along with it *Yashtimadhu churna* 2gm twice daily was given. The patient was also advised to walk daily for at least 30 minutes. Most of the contents in *Triphaladi Yoga* are *Kapha-pitta hara* and have *lekhana* property along with *Deepana-Pachana* activity which can scrape out the excess fats in the hepatocytes. *Yashtimadhu* is *tridoshahara* and have anti-inflammatory property.

The outcome of this case reveals that the symptoms of fatty liver were effectively managed through proper Ayurvedic treatment.

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