

CASE STUDY

A Case Study on *Yakrita Vikara* w.s.r to Non-Alcoholic Fatty Liver Disease

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ABSTRACT

Non-alcoholic fatty liver disease (NAFLD) is the most prevalent chronic liver disease, present in 20 to 40 percent of the general population. In the US, NAFLD is 3-5 times more prevalent in men than in women. The prevalence of NAFLD in india is 9-32%¹⁵. In this case, grade 1 fatty liver is reported. A male patient came with a complaint of *aruchi*, *avipaka*, *udara shoola*, *anaha* and incomplete evacuation to the Rishikul ayurvedic medical college, Haridwar. Haematological examinations altered in SGOT, SGPT, alkaline phosphatase, bilirubin and USG abdomen. Ayurvedic treatment was given to patient for 2 months. After two months, haemotological tests and USG results return to normal. The objective of the current case study is to assess changes in a patient's subjective and objective metrics that showed signs of NAFLD. *Rohitakadi vati* is a formulation mentioned in *Bhaishajya ratnavali*. Thus, the drug *Rohitakadi vati* is an effective *vati* to treat NAFLD.

Key Words *Fatty liver*, NAFLD, *Rohitakadi vati*

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INTRODUCTION

NAFLD is the most common of all liver disorders. It is the most frequent cause of chronic liver disease. The overall prevalence of NAFLD worldwide was estimated to be 32.4%. In Ayurveda, *Yakrita* (liver) is *Koshthanga* which is mentioned in *charaka sharira*. *Yakrita* is the *moola* of *raktavaha srotas*, mentioned in *Charaka vimana* and *Sushruta sharira*. It performs over 500 different functions¹. Function

of Liver are secretory, Excretory, Metabolic, Synthetic, Detoxification, Storage etc. *Yakrita vikara* is not specifically mentioned in *samhitas* but in different contest of *nidana* and *chikitsa* following type of *vikaras* are mentioned related to *Yakrid-dalyudara* mentioned in *Sushruta nidana*. *Kamala*, *Kumbh kamala* mentioned in *Charaka chikitsa*. *Hallimaka*, *Laghraka* mentioned in *Sushruta uttar tantra*². *Panaki* mentioned in *Vangasen*. Liver have wide ranging

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functions include synthesis of clotting factors and metabolism of drugs and bilirubin etc. Ayurveda treat yakrita roga in the principle of udara roga³. A vast spectrum of disease comes under *Yakrita roga* (Liver disease) ranging from simple steatosis to hepatomegaly to liver cirrhosis. Fault diet and faulty Lifestyles are the Vitiating of *three doshas* formed *apakva anna rasa* due to *Jatharagni*. Now Vitiating of *Kapha doshas*, deposit of *meda* in *Yakrita* that lead to *srotorodha*. Hence NAFLD is considered as *Yakrit Vikaras*. The drug chosen for study is *Rohitakadi Vati* described in *Bhaishajya ratnavali*⁴. *Rohitakadi vati* contain *rohitaka*, *chitraka*, *ajjwain*, *ikshuraka-beeja*, *karanja*, *karvellaka*, *nausadara*, *saindhava lavana* having *Rechana* (purgative), *Mutrala* (diuretics), *Vata-shamaka*, *lekhana*, *Agnivardhaka*, *Ama*, *Medha*, *Kapha nasak qualities* i.e preferable for hepatobiliary disorders. The assesment of effect of *Rohitakadi vati* in the patient of non-alcoholic fatty liver disease is very effective with minimal side effects.

MATERIALS AND METHODS

Place of Study- Rishikul ayurvedic medical college, UAU University Dehradun.

Ethical clearance- The study has been cleared by IEC approval.

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A 60- year-old male patient came to Rishikul Campus Haridwar with major complaints of Loss of appetite, heaviness, pain in right side of abdomen from past 20 days. Another complaint

is a sensation of nausea. He consumed the allopathic drug pantoprazole SOS. The results of USG study revealed Grade 1 fatty liver. He now desires an ayurvedic remedy to solve this issue entirely.

Table 1 Clinical history and examination²

General Information	General Examination	Personal History
Name: Mr-X	B.P- 130/90 mmHg	Appetite: Decreased
Age: 60 years	Pulse- 74/min RR- 16/ min	Bowel- Constipated
Sex: Male	Pallor- absent Icterus- absent	Micturition: Normal
OPD No. K4247/ 25736		Thirst: 1lt./day
Marital status: Married	Oedema- absent	Sleep: Normal
Occupation: Shopkeeper	Clubbing – absent	Weight: 64 kg Height: 149 cm

Table 2 Dashvidha-Aatur Pariksha³

Prakriti	Pitta pradhana, kaphaj vata anubhanda
Vikriti	Pitta dosha
Sara	Madhyam
Samhanan	Madhyam
Pramana	Madhyam
Satmaya	Madhyam
Satva	Madhyam
Aharashakti	Avara
Vyayamashakti	Avara
Vaya	Madhyamavastha

Table 3 Nidana- Panchaka⁴

Nidana	Excess intake of curd, spicy, junk food, no exercise	
Purvaroop	<i>Udara bharipan, bhukh na lagna</i>	
Roop	<i>Anaha, aruchi, avipaka, udara shoola</i>	
Upashaya	Timely intake of food, Regular exercise, <i>Moong dal</i>	
Sampraptighatak	Dosha	Pitta pradhana tridosha
	Dushya	Rasa, Rakta
	Srotasa	Annvaha srotas, Rasavaha srotas

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<i>Srotodushti</i>	<i>Sanga</i>	<i>Vyadhi</i>	<i>Chirkari</i>
<i>Udavasthana</i>	<i>Yakrita</i>	<i>swabhav</i>	
<i>Rogmarga</i>	<i>Abhyantra</i>		

Table 4 Biochemistry

Biochemical		Before treatment	After treatment
Hb%		12.5	12
T.L.C.		5600	5100
DLC	N	52	51
	L	42	40
	E	02	01
	M	04	08
	B	00	00
ESR		22	20
Urine test (routine & microscopic)		Normal	Normal
L.F.T	Sr. Bilirubin (T)	0.87	0.37
	Alkaline phosphatase	98	79.8
	SGOT	46.93	27.1
	SGPT	78.77	21.1
	Albumin	3.49	3.90
	Globulin	2.38	2.88
	A/G ratio	1.47	1.35
Serum creatinine		0.28	1.20
Serum cholesterol		184.5	171
Serum Triglyceride		79.02	70.7

Table 5 USG Grading⁶

Features	Grade No.	B.T	A.T
Slight diffuse increase in the fine echoes. Liver appears bright as compared to the cortex of kidney. Normal visualization of diaphragm and intra-hepatic vessel disorders	Grade 1 fatty liver	+	Absent
Moderate diffuse increase in fine echoes. Slightly impaired visualization of the intra hepatic vessels and diaphragm	Grade 2 fatty liver		
Marked increase in the fine echoes. Poor or no visualization.	Grade 3 fatty liver		

OBSERVATIONS AND RESULT

Rohitakadi vati : 500mg -2B.D/ after meal with hot water as *anupana* for a period of 2 months.

Patient was advised to report within 20 days in the period of 60 days.

Table 6 *Lakshana of Yakrita vikara*⁷

Symptoms	Before Treatment	After Treatment
1. <i>Aruchi</i>	+	-
2. <i>Avipaka</i>	+	-
3. <i>Hrillasa</i>	-	-
4. <i>Daurbalya</i>	-	-
5. <i>Udara shola</i>	+	-
6. <i>Asya-vairasya</i>	-	-
7. <i>Anaha</i>	+	-

Table 7 Objective criteria

Objective	Before Treatment	After Treatment
1. SGOT	46.93	27.1
2. SGPT	78.77	21.1
3. Alkaline phosphatase	98	79.8
4. Serum	0.87	0.37

bilirubin		
5. USG Abdomen	Grade 1 fatty liver	No fatty liver

DISCUSSION

Rohitaka contains betulinic acid that act as carminative and laxative¹³. it is used to treat liver and splenomegaly diseases, obesity. *Chitraka*

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contain plumbagin which enhance liver metabolism, lowering cholesterol level, indigestion, nausea¹⁴. *Karanja* contain Quercetin, Palmitic acid, Stearic acid, Oleic acid, Karanjin, Pongampin. These act as anti-microbial, anti-oxidant, inhibited massive hepatic macrophage and recruitment to the injured Liver¹³. *Ikshuraka-beeja* contain phytosterol work in lower low density lipoprotein cholesterol, aspartate amino transferase, alanine amino transferase¹⁷. *Nausadara* and *Saindhava lavana* act as Acid-base balance in body, Anti-inflammatory. *Karanja* contain Quercetin, Palmitic acid, Stearic acid, Oleic acid, Karanjin, Pongampin. These act as anti-microbial, anti-oxidant, inhibited massive hepatic macrophage and recruitment to the injured Liver. *Karvellaka* contain saponin, tannins, momodicine, charantin that work in reducing insulin resistance and fat accumulation, hepatoprotective action, anti-obesity, anti-diabetic¹⁶⁻¹⁸. Thymol found in *yavanika* has carminative, antispasmodic, antioxidant, and antihypertensive properties¹⁹. It is amply demonstrated how effective *Rohitakadi vati* is. After 60 days of treatment, the patient had alleviation from his or her complaints of *Aruchi*, *Avipaka*, *Udara shoola* and *Anaha*. Additionally, no fatty liver was discovered by USG. We should make use of the medicinal effects of numerous ayurvedic drugs. After the course was finished, there was a noticeable sense of relief.

Rohitakadi vati has significant role in the management of NAFLD.

CONCLUSION

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