Ayurvedic management of non-alcoholic fatty liver disease - a case study.
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ABSTRACT:

Non-Alcoholic Fatty Liver Disease (NAFLD) is a broad term which describes the buildup of excessive fat in the liver cells in the absence of excessive alcohol intake. According to WHO, in recent years the number of chronic liver disease, including NAFLD has recorded steady growth. NAFLD is an added risk factor for extra hepatic disease such as CVD, CKD, colorectal cancer, endocrine disorders and osteoporosis. Ayurveda also vividly describes liver disease. NAFLD can be interpreted as a *Santarpanotha Vikara* (disease) caused by *Kaphamedo Dushti*, getting *Sthanasamsraya* in *Yakrut* (liver), the *Raktavahasrotomoola* and *Pittasthana*.

A 27 years old male patient with complaints of dull abdominal pain, discomfort and poor appetite for 6 wks came with an USG report which showed elevated liver echogenicity (Grade-I Fatty Liver). He was advised *Chitrakadi Vati* 500 mg twice daily after food with *Anupan Takra* and *Patol Katurohinyadi Kashayam* 10 ml twice a day for 2-months. *Chitrakadi* Vati is a formulation mentioned in *Charak* Samhita, *Grahanirog Chikitsa* having *Kaphmedohara, Deepana, Pachana* properties. *Patol Katurohinyadi Kashayam* mentioned in *Shodhanadi Ganasangrah adhyaya* in *Ashtang Hridayam* has been reported by many practitioners to be effective in treatment of liver disorders as it is *Kaphmedohar Raktaprasadak*, *Yakritagami* and *Deepan*. At the end of the study, the fatty infiltration of liver was reverted to normal. The combination of *Chitrakadi Vati* and *Patol Katurohinyadi Kashayam was* effective in NAFLD.

Keywords:
Non Alcoholic Fatty Liver Disease, *Chitrakadi Vati*, *Patol Katurohinyadi Kashayam*, *Takra, Anupana*.

INTRODUCTION:

Non-Alcoholic Fatty Liver Disease (NAFLD) is a common chronic liver disease.

NAFLD represents a spectrum of disorders that have in common the presence of hepatic steatosis (fatty liver) in individuals who do not consume alcohol or do so in very small quantities (less than 20g of ethanol /week). 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 hepatic fat accumulation such as significant alcohol consumption [1]. In recent years the number of chronic liver diseases, including NAFLD has recorded steady growth, according to the World Health Organization [2]. The prevalence of NAFLD in Indian population ranges from 5 to 28%. About 2-3% of the general population is estimated to have Non-Alcoholic Steato Hepatitis (NASH), which may progress to liver cirrhosis and hepato-cellular carcinoma. In India, it is emerging as an important cause of liver disease. Epidemiological studies suggest the prevalence of NAFLD to be around 9-32% in general Indian population, with a higher incidence amongst overweight or obese and diabetic/ pre-diabetic patients [3-4].

Liver can be compared with *Yakrut* mentioned in Ayurvedic classics as an important *Koshtanga*. It is the *Mulasthana* (root) of *Raktavahasrotas* [5]. NAFLD can be considered as a *Santarpanjanya Vyadhi* with *Kaphpradhan Tridoshdushti* taking *Sthansamsraya* in *Yakrut* [6].

The *Chitrakadi Vati* is mentioned in *Charak Samhita Chikitsasthan Grahanidosha Chikitsa ahyaya*. It is a *Kaphvathar*, *Medohar*, *Deepan* & *Pachan* [7]. *Patol Katurohinyadi Kashayam* is a classical formation from *Ashtang Hridayam* [8]. It is also *Kaphmedohar*, *Raktaprasadak*, *Yakritgami* and *Deepan*. It has been reported by many practitioners to be effective in the treatment of liver disorders.

Non-alcoholic fatty liver disease (NAFLD) is a leading cause of chronic liver disease and is strongly associated with the metabolic syndrome. NAFLD is an added risk factor for extra hepatic conditions such as cardio-vascular disease, chronic kidney disease (CKD), colorectal cancer, endocrine disorders including type-2 Diabetes Mellitus, Thyroid dysfunction and osteoporosis. Hence it is necessary to find a feasible solution to this problem [9].

AIM & OBJECTIVE:

- To evaluate the efficacy of *Chitrakadi Vati* and *Patol Katurohinyadi Kashayam* in Non-alcoholic fatty liver disease.

CASE-HISTORY:

A 27 years old Hindu male patient, software engineer by occupation, reported to my OPD with complaints of dull abdominal pain, discomfort and poor appetite since 6-wks. He came with an USG report which showed elevated liver echogenicity (Grade-I NAFLD).

History of Presenting Complaint:

The patient was asymptomatic before one and half months. Later gradually he suffered with loss of appetite and dull pain in

abdomen. As a part of investigation, USG abdomen was suggested and was found to suffer from fatty liver Grade-I.

Family History: Mother was diabetic and father was suffering with hypertension.

Systemic Examination:

- Pulse –   82/min
- BP -   140/100 mm Hg.
- Weight –   70 kg
- Height –   165 Cm
- Appetite –   poor
- Allergy –   Nil
- Addiction –   Nil
- Bowl –   constipation
- Bladder –   normal
- Diet –   mixed diet, more non-veg, excessive intake of junk food
- Exercise –   very less
- Sleep –   sound

Local Examination: P/A

- Palpation – liver and spleen- non palpable, non-tender
- Percussion – tympanic note heard
- Auscultation – normal bowel sound

Investigations:

- ✓ USG – Grade-I NAFLD
- ✓ LFT - WNL
- ✓ Lipid profile – WNL

METHODOLOGY/ TREATMENT GIVEN:

Patient was advised to take Chitrakadi Vati 500 mg twice with *Takra* as *Anupana* and *Patolkaturohinyadi Kashayam* 10 ml twice/day for two months. Patient was advised to report once in 15 days for follow-up. After two months the USG abdomen was repeated.
Assessment of subject was done by using USG grading as per American Gastroenterology Association.

Table 1: USG Grading:

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

OBSERVATION:
Observed changes are mentioned in the table given below.

Table-2: Observations

SN	Parameters	Before Treatment	After Treatment
1.	USG liver	Grade 1 fatty liver	Normal
2.	Weight, kg	70	68
3.	BMI, kg/m^2	25.71	24.98
4.	B.P.	140/90	130/80
5.	Anorexia	Moderate	Absent
6.	Dull pain in Rt. Hypochondrium region	Present	Absent

RESULT:

The given medicines were found to be effective in reducing the echogenicity of liver and physical complaints.

DISCUSSION:

NAFLD is the most common liver disorder worldwide and is present in approximately 25% of the world population [10]. It is the leading cause of chronic liver disease. But inspite of consistent human effort and drug discovery, modern medicine has very little to offer.

While understanding such disease through Ayurveda, we must consider the *Nidana* (etiology), *Dosha* and *Dooshya* involved in the progression of disease. Due to the *Aharaja* (food) and *Viharaja* (regimen) *Nidanasevana* (etiology) *Kaphadoshakopa* occurs in the body. This leads to the *Jatharagnimandya* and formation of *Ama*, which is the improperly formed *Rasadhatu*. This *Samarasa* circulates through the body and reaches *Yakrut* the *Raktavaha Srotomoola*. The *Samarasa* which reaches liver results in formation of vitiated *Rakta Dhatu* (blood) and also affects *Mamasa Bhaga* (fleshy part) of liver. As the *Mamasadhatu* get vitiated, Vasa (fatty substance) the *Updhatu* of *Mamasa* also get vitiated (*Vasa* is the *Sudhamamsasya Sneha*). In Ayurveda, breaking of pathogenesis is the treatment of disease. Hence for treating NAFLD, *Deepan, Pachan, Kaphaghna* and *Medohara Dravyas* are essential. *Chitrakadi Vati* and *Patol Katurohinyadi Kashayam* have these properties. Also *Takra* is used as an *Anupan*, mainly because of its *Deepan* property.

The *Deepan, Pachan* drugs improve *Jatharagni* and this also corrects *Dhatwagnimandya*. *Medohar* property of the drugs reduces the accumulated fatty substances and it was assessed by USG abdomen.

CONCLUSION:

1. The patient was under treatment for two months and improved symptomatically along with reversal of fatty liver to normal (USG finding).

2. Combination of *Chitrakadi Vati* with *Takra* and *Patol Katurohinyadi Kashayam* was useful in the management of NAFLD.
3. The study can be carried out in larger samples for substantiating the results.

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