



## Research Article

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### THE EFFECT OF PARIKARA GUTIKA IN 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. In recent years the number of chronic liver diseases, including Non-Alcoholic Fatty Liver Disease (NAFLD) has recorded steady growth, according to the World Health Organization. NAFLD is an added risk factor for extra hepatic diseases such as CVD, Chronic kidney disease, Colorectal Cancer, Endocrine disorders (including Type 2 DM and Thyroid dysfunction) and Osteoporosis. Ayurveda also vividly describes Liver Diseases in the context of Kamala (Jaundice) and Yakrut Roga (Liver diseases) in different classical texts. It can be interpreted as a Santharpanotha Vikara (disease which caused by taking excessive nourishing diet) with Kaphamedo Dushti, getting Sthanamsraya in Yakrut (Liver) which is Raktavahasrothomoola and Pittasthana (location of body humour Pitta). A 45-year-old male patient, with complaints of fatigue for 2 months came with an USG report which showed elevated liver echogenicity (Grade 2 fatty liver). On investigation, slight increase of SGPT was noted. Patient was advised to take 4 tablets (500mg each) Parikara Gutika thrice daily after food with hot water as Anupana for a period of 2 months. Parikara Gutika is a formulation mentioned in Chakradattam, Yakrut Pliha Adhikara, having Kapha Medohara, Rakta Prasadana, Deepana (appetizer) and Pachana (digestive) properties. At the end of study, the echogenicity of liver was reduced to Grade 1. The drug Parikara Gutika was effective in reducing the echogenicity and size of liver.

**Key words:** Non-Alcoholic Fatty Liver Disease, NAFLD, Parikara Gutika

#### 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<sup>1</sup>. In recent years the number of chronic liver diseases, including NAFLD has recorded steady growth, according to the World Health Organization<sup>2</sup>. 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. As a rule, the prevalence of this disease is higher in males and increases with increasing age, and it is influenced by the diagnostic method and the characteristics of the population, especially lifestyle habits. The prevalence increased significantly 80 – 90% in obese adult, 60% in patients with hyperlipidemia and 30 -50% in diabetic patients. Approximately 4 -22% hepato-cellular carcinoma in west attributed to NAFLD<sup>3</sup>. The overall prevalence of it in western countries varies from 15-40% and in Asian countries from 9-40%<sup>4-5</sup>. 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<sup>6-7</sup>.

The ancient medical wisdom – Ayurveda also vividly describes Liver Diseases in the context of Kamala and Yakrut Roga in different classical texts. These concepts can be applied to understand Fatty Liver also. It can be interpreted as a Santharpanotha Vikara with Kaphamedodushti, and Ama formation leading to the formation of Samadhatus. Yakrut is described as Kalamamsa Vishesha (black muscle tissue) in our classics. The condition fatty liver can be considered as the deposition of abnormal Vasa (Fat) which is the Malabhaga (Waste part) of vitiated Mamsa dhatu.

Parikara Gutika<sup>8</sup> is mentioned in Chakradattam in Yakritplihaadhikaram. It consists of Manakanda (*Alocasia indica*), Apamarga (*Achyranthus aspera*), Amritha (*Tinospora cordifolia*), Vasa (*Adhatoda vasica*), Chitraka (*Plumbago zeylanica*), Saindhava (Rock salt), Sthira (*Desmodium gangeticum*), Nagara (*Zingiber officinale*), Talaranda (*Borassus flabellifer*), Vida, Souvachala, Yavakshara, Pippali (*Piper longum*), Gomutra (cow's urine) and Madhu (Honey). Most of the medicines in Parikara Gutika are Kaphamedohara, Deepana and Pachana.

## MATERIALS AND METHOD

**Place of Study** - Pankajakasthuri Ayurveda Medical College and Post Graduate Centre Hospital, Killi, Kattakkada, Thiruvananthapuram, India.

**Ethical clearance** - The study has been cleared by IEC vide approval reference number PKAMC/PG002/EC/2015-2016. The study is carried out as per International Conference of Harmonization – Good Clinical Practices Guidelines. (ICH – GCP).

## CASE PRESENTATION

A 45-year-old Hindu male patient, mason by occupation, reported to Kayachikitsa OPD, Pankajakasthuri Ayurveda Medical College and PG Center Kattakkada on 18/9/2017 with OP No. B44161 with complaints of fatigue since 2 months. He came with an USG report which showed elevated liver echogenicity (Grade 2 fatty liver) and liver size 15.3 cm.

## HISTORY OF PRESENTING COMPLAINT

The patient was asymptomatic before 2 months. Later he was affected by fever and severe vomiting which was diagnosed as appendicitis. As the part of investigation, USG abdomen suggested, and the report confirmed appendicitis and the liver showed increased echogenicity (Grade 2 fatty infiltration of liver). He underwent appendectomy as part of treatment. The

patient got relieved but started feeling of weakness again. Hence, he came to Pankajakasthuri Ayurveda Medical College and Post Graduate Center, Killi, Kattakkada, India.

## HISTORY OF PAST ILLNESS

Not a known case of Diabetes, Hypertension and Dyslipidemia.

## SURGICAL HISTORY

H/O Appendectomy – 2 months back

## PERSONAL HISTORY

Table 1: Personal History

Appetite: Good	Bladder: Normal
Allergy: Not Detected	Diet: taking mixed diet and took fish fry daily and chicken fry once in a week
Addiction: Nil	Sleep: Sound
Bowel: Regular	Exercise: Normal

## INVESTIGATIONS

SGOT - 31IU/L, SGPT -51IU/L, Albumin – 4.7g/dl, ALP – 76IU/L, USG – GRADE 2.

## ASSESSMENT CRITERIA AND GRADING

Assessment of subject is done by using USG Grading as per American Gastroenterology Association

Table 2: 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.

## COURSE OF TREATMENT

Patient was advised to take 4 tablets (500mg each) Parikara Gutika thrice daily after food with hot water as Anupana (adjuvant) for a period of 2 months. Patient was advised to report once in 15 days for uninterrupted feedback.

## OBSERVATION AND RESULT

Observed changes are mentioned in the table 3.

Table 3: Observations

Parameters	Before Treatment	After Treatment
Liver Sonography	Grade 2 fatty liver	Grade 1 fatty liver
Liver Size (cm)	15.3	13.7
SGOT (IU/L)	31	28
SGPT (IU/L)	51	35
Weight (Kg)	78	77.2
BMI (Kg/m <sup>2</sup> )	25.46	25.20
Fatigue	Moderate	Absent

Thus Parikara Gutika was found to be effective in reducing the echogenicity of liver and also in reducing the liver size. The medicine also showed reduction in the elevated liver enzymes.

## DISCUSSION AND RECOMMENDATIONS

NAFLD is rapidly becoming the most common liver disease worldwide. A disease practically unheard of three decades ago, is now considered as one of the most common causes of chronic liver disease in industrialized world. Recent studies have shown

that many patients can have advanced fibrosis with NASH and even cirrhosis due to NASH with normal liver enzymes, indicating that the prevalence of the disease is likely to be even greater than was previously suspected<sup>9</sup>. Due to the Aharaja (food) and Viharaja (regimen) Nidanasevana (etiology), Kaphadoshakopa (aggregation of phlem) occurs in the body.

This leads to Jataragnimandya (reduced digestive fire) and formation of Ama, which is the improperly formed Rasadhatu. This Samarasa circulates through the body, reaches Yakrut,

which is the Raktavaha Srothomoola and also described as Kalamamsa Visessa in Sabdakalpadruma. The Samarasa which reaches Yakrut(liver) results in formation of vitiated Rakta Dhatu(blood) and also affects the Mamsa Bhaga (fleshy part) of Yakrut. The Mamsadhatu which gets vitiated due to the vitiated Rasa and Raktadhatu, and Upadhatu of Mamsa i.e, Vasa (fatty Substance) formed is also vitiated (Vasa is the Sudhamamsasya Sneha). In Ayurveda, Samprapti Vighatanameva Chikitsa (Breaking of pathogenesis is the treatment of disease). For the breaking of Samprapti (pathogenesis) of NAFLD Deepana, Pachana, Kaphahara and Medoharadravyas (fat reducing) are essential. Parikara gutika consists of 15 drugs. Most of them are Kaphavatahara, Medohara, Deepana and Pachana. The Deepana Pachana drugs improve Jataragni and this also corrects Dhatwagnimandya. Medohara property of the drugs reduces the accumulated fatty substances.

The primary outcome of this case study was reduction of fat in liver assessed by 3D ultrasound whereas abdominal CT value ratio of liver to spleen (L/S Ratio) should be taken as assessment criteria in further study.

### CONCLUSION

Hence Parikara Gutika has a significant role in the management of NAFLD.

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