Journal Homepage: -www.journalijar.com

INTERNATIONAL JOURNAL OF ADVANCED RESEARCH (IJAR)

Article DOI:10.21474/IJAR01/23736
DOI URL: http://dx.doi.org/10.21474/IJAR01/23736

RESEARCH ARTICLE

AYURVEDIC MANAGEMENT OF YAKRIDDALYUDARA (GRADE I-IINON-ALCOHOLIC FATTY LIVER DISEASE): A CASE REPORT

Monika Giri, Mamta, Girish KJ and Jyoti Arya

Manuscript Info

Manuscript History
Received: 16 April 2026
Final Accepted: 18 May 2026
Published: June 2026

Key words: -
Arogyavardhini Vati,Case report, Hepatic Steatosis,Kumaryasava,NAFLD, Pathya-Apathya, Yakriddalyudara,

Abstract

Background: Hepatic steatosis, widely known as Fatty Liver, is a major liver disease and global healthcare challenge driven primarily by the buildup of lipids, mainly triglycerides, in liver cells. Non-alcoholic Fatty Liver Disease (NAFLD), increasingly referred to as Metabolic Dysfunction-Associated Steatotic Liver Disease (MASLD) is a condition where excess fat builds up in the liver without heavy alcohol use. It is highly linked to obesity, type 2 diabetes, high blood pressure, and high cholesterol.According to Ayurveda, NAFLD can be correlated to ~Yakriddalyudara (chronic metabolic liver disease).

Clinical Findings: In this case report, a 41-year -old male patient prese Nted to Patanjali Ayurvedic Hospital, Haridwar, with the presenting complaints of mild abdominal pain, loss of appetite, fatigue, and incom plete bowel evacuation persisting for three months. During the patient's OPD examination, no clinical abnormality was seen. Laboratory investi gations (LFT) and Ultrasonography scan confirmed Grade I-II fatty liver alongside deranged liver enzymes.

Intervention: Two Ayurvedic oral medications, Arogyavardhini vati 500 mg (1 tablet twice daily after meals) and Kumaryasava 30ml (twice daily with an equal amount of water), were used to manage the patient for 60 days along with Pathya-Apathya and therapeutic yoga practices (dietary and lifestyle regulation).

Outcome: After two-month Ayurvedic regimen, marked improvements were seen in biochemical parameters, signs and symptoms, and the patient's quality of life. Follow up liver function test (LFT) revealed that previously deranged parameters had returned to normal physiologi cal ranges. Specially, Liver enzymes including SGOT decreased from 58 U/L to 35 U/L, SGPT from 105 U/L to 48 U/L. Furthermore, ALP from 155 U/L to 78 U/L, GGT from 176 U/L to 58 U/L, Albumin from 5.04 g/dl to 3.98 g/dl. The follow-up abdominal sonogram confirmed a completely normal liver appearance with total reversal of hepatic steatosis.

Conclusion: This individual case report demonstrates that Ayurvedic interventions are highly effective, safe, and viable for achieving rapid clinical and radiological reversal of early-stage metabolic liver disorders like NAFLD.

Corresponding Author: -Monika Giri
Address: - Department of Kayachikitsa, Patanjali Bhartiya Ayurvigyan Evam Anusandhan Sansthan, Haridwar 249405, Uttarakhand, India
Email: monikagiri59@gmail.com

Introduction: -

Non-alcoholic fatty liver disease (~Yakriddalyudara) is a progressive metabolic disorder, representing a broad spectrum of liver conditions, caused by excessive accumulation of fat within hepatocytes[1]. This hepatic condition represents a range of histological changes that can progress from simple fat accumulation in the liver cells (steatosis) to more severe conditions such as non-alcoholic steatohepatitis (NASH), fibrosis, cirrhosis, and ultimately hepatocellular carcinoma[2]. Currently, this condition affects approximately 32% of the global adult population, higher prevalence in men than women. NAFLD also promotes metabolic disorders such as hyperglycaemia, hyperuricaemia, hyperlipidemia, and hypertension. The abnormal excessive buildup of triglycerides in liver cells, where the stored triglycerides exceed 5 percent of the liver's total weight, is the hallmark of this clinical condition and occurs in the absence of alcohol consumption. NAFLD can also be referred to as obesity and the liver disorder ~Yakrita roga or ~ Yakriddalyudara.

While Grade I NAFLD typically requires prolonged, long-term lifestyle changes and extensive standard pharmacological support to achieve noticeable improvements, this case is unique because complete clinical, biochemical, and radiological reversal was achieved within a remarkably short 60-day period. This rapid recovery was realized non-invasively using a standardized combination of Shaman Chikitsa (Arogyavardhini Vati and Kumaryasava) paired strictly with regulated dietary changes (Pathya-Apathya) and therapeutic yoga, without any adverse drug reactions or side effects.

Case Report: -

Patient Demographics: -

- **Age:** 41-years
- **Gender:** Male
- **Date:** November 11, 2025
- **Department:**Kayachikitsa Outpatient Department (OPD)

In this presented case, a 41-year-old male with no significant history of alcohol consumption presented at the Kayachikitsa Outpatient Department (OPD) on Nov 11, 2025. He complained of constant moderate abdominal pain localized in the right hypochondrium, generalized fatigue, chronic indigestion, loss of appetite, and irregular bowel evacuation persisting over the last few months

Presenting Complaints: -

The patient presented the following complaints persisting over the last several months:

Table 1. Presenting Complaints and Severity

Presenting Complaints	Severity	Duration
Abdominal pain localized to the righthypochondrium	Grade-2 (Moderate)	3 months
GeneralizedFatigue	Grade-2 (Moderate)	2 months
Indigestion	Grade-2 (Moderate)	2 months
Loss of appetite	Grade-2 (Moderate)	2 months
Irregular bowel evacuation	Grade-1 (Mild)	2 months

History: No such relevant history found
Previous Surgical History: No such relevant past surgical history found
Family History: No family history
Personal History: Mixed diet, reduced physical activity
Alcohol history: No history of alcohol addiction

Table 2: Personal history

Dietary Habits - Mixed diet, excess intake of spicy, oily, and fatty food	
Appetite - Reduced	**Sleep** - Disturbed
Bowel- Incomplete evacuation	**Micturition** - Normal
Addiction - Coffee, Cold drinks	**Physical Activity-** Sedentary lifestyle (Reduced physical activity)

Table 3: Clinical Examination

General Examination	Findings	GI Examination	Findings	Ayurvedic Exam (Ashtavidha&Dashavidha)	Findings
Built	Moderate	**Abdominal Inspection**	Slightly distended, inverted umbilicus	**Nadi (Pulse)**	Vata-Kaphaj
				Prakriti	Vata-Kaphaj
BMI	26 kg/m^2	**Abdominal Palpation**	Soft abdomen, tenderness in right hypochondrium	**Vikriti (Imbalance)**	Pittaj
				Jihva (Tongue)	Saam (Coated)
Blood Pressure	120/82 mmHg	**Percussion**	Hepatic dullness present,	**Mala (Stool)**	Vikrita (Irregular)
				Ahara Shakti	Madhyam (Moderate)
Pulse	83 bpm	**Auscultation**	Normal bowel sounds	**Vyayama Shakti**	Madhyam (Moderate)

Table 4: Differential Diagnosis

Differential Diagnosis	Distinguishing Feature	Reason for Exclusion inThis case
Alcoholic Fatty Liver Disease	Requires definitive history of chronic alcohol consumption.	Patient strictly denied alcohol intake
Chronic Cholecystitis / Cholelithiasis	Severe colicky pain radiating to back, positive Murphy's sign, and gallstones on USG.	USG showed clear gallbladder wall without calculi
Grade I-II NAFLD (Yakriddalyudara)	Diffuse increased hepatic echogenicity on USG, elevated transaminases, and metabolic lifestyle history.	**Confirmed**-elevated LFT and abdominal USG.

Diagnostic Assessment:
Laboratory Results:

- **Liver Function Test (LFT):** Serum hepatic markers were notably elevated
- SGOT-58 U/L (↑), SGPT-105 U/L (↑), ALP-155 U/L (↑), GGTP - 176 (↑), ALBUMIN - 5.04 (↑)

Imaging Results: suggested thefindings indicate Grade I-II fatty liver disease on USG.

Timeline: -

Table 5: Timeline

Timeline	*Events*
History	Prior to the onset of symptoms, the patient reported asymptomatic and in good baseline health. He strictly denies any history of alcohol consumption, and his BMI remain within normal ranges.
Oct 2025	Suddenly, the patient started complaining of abdominal pain, loss of appetite (anorexia), irregular bowel movements, and increased fatigue.
Nov 2025	The patient underwent routine investigations. The LFT report showed elevated liver enzymes, and the Ultrasonography (USG) revealed Grade I-II fatty liver.
11-11-2025	The patient visited Patanjali Ayurvedic Hospital for further management. An Ayurvedic treatment regimen was prescribed, which included medications, a specific diet plan, and an exercise routine. 1-month medication course was started.
11-12-2025	1st Follow-up (after 1 month): Significant symptomatic relief was observed. Medication for the second month was prescribed and continued.
11-1-2026	2nd Follow-up (after 2 months): Great improvement was noted. Repeat investigations showed a normal USG report, and liver enzymes returned to their normal baseline.
Current Clinical Status	Current clinical status stable; patient advised maintaining healthy dietary and lifestyle habits with long-term follow-up.

Definitive Diagnosis: Final Diagnosis: Grade I-II Non-alcoholic Fatty Liver Disease (Yakriddalyudara).

Therapeutic Intervention: -
Patients were managed during this therapeutic interval for a total of 60 days.

Table 6: Shaman Chikitsa (From 11-11-2025 to 11-01-26)

Medication	Dose	Anupana	Duration	Company name & Batch No.
Arogyavardhini Vati	1-tab twice daily after meals	Kumaryasava	60 days	Divya Pharmacy, Haridwar (Batch: BAVV250029)
Kumaryasava	30ml twice daily, after meals	Equal amount of water	60 days	Divya Pharmacy,Haridwar (Batch: KMY250013)

Pathya-Apathya[3: -]

Table 7: PathyaAhara & Apathya Ahara (Dietary Regulations)

Category	Pathya Ahara (Wholesome)	ApathyaAhara (Unwholesome)
Water	10-12 glasses of lukewarm water, Madhuudaka (honey + lukewarm water)	Cold water
Pulses	Mung dal (Green gram)	Urad dal, Arhar dal, Kulath dal, Masoor dal, Chole, Rajma, Soyabean

Vegetables	Pumpkin, Lauki, Karela, Turai, Shigru, Parval, Garlic, Turmeric, Amla	Peas, Spinach, Radish, Mushroom, Arbi, Potato, Paneer, Cabbage, Cauliflower, Brinjal
Fruits	Draksha, Dadim, Coconut, Amla, Papaya, Beetroot, Khajoor, Kiwi, Apple	Guava, Mango, Muskmelon, Raw mango, Anjeer
Grains	Daliya (Broken wheat), Barley, Ragi, Purana Shali	New rice, Maida, Pancakes
Beverages/Spices	Buttermilk, Herbal tea, Ginger, Black pepper, Cumin seeds, Coriander	Curd, Soft drinks, Alcohol, Tea, Coffee, Full-fat milk, Preserved/packaged food
Others	Cow's ghee, Filtered oil	Refined oil, Vanaspati ghee, Pickles, Meat, Fish, Junk food

Pathya &Apathya Vihara (Lifestyle &Behavioral Modifications): -

- **Vyayama (Physical activity):** Engage in moderate daily exercise for 20-30 minutes such as a routine brisk walk covering (3-4 km/day).
- **Yoga Asanas**: Postures like Suryanamaskara, Balasana, Ardha Matsyendrasana, Padahastasana, Matsyasana, Setubandhasana, Adho Mukha Svanasana, Bhujangasana, Dhanurasana, and Trikonasana.
- **Pranayama** for stress management: Bhastrika, Kapalabhati, Anulom Vilom, and Bhramari to reduce stress.
- **General Habits**: Strictly avoid suppression of naturalbodily urges.

Apathya Vihara (Factors to Strictly Avoid): Avoidance of excessive daytime sleeping (Diwaswapna), Less physical work, overeating or untimely eating (Atibhojan/Vishamashan), Overstress, anger, hunger, depression.

Treatment Adherence & Tolerance Assessment:
Patient adherence was verified at each follow-up by evaluating the patient's logbook and counting the remaining medical tablets. The patient demonstrated 100% compliance with the prescribed drug dosages and dietary regulations. Drug tolerance was exceptional; the patient noted no digestive discomfort, nausea, or hyperacidity upon taking the formulations.
Formulation Tolerance: The formulation tolerance was exceptional. The patient reported no gastric irritation, nausea, burning sensations, hyperacidity, or gastrointestinal distress during the entire 60-day treatment span.

Adverse & Side Effects:
No adverse drug reactions or unexpected side effects were reported by the patient or noted during clinical examinations throughout the 60-day treatment and follow-up phase.

Results: -

Follow-Up and Outcomes: -
During the patient's first visit on11 Nov 2025, a one-month course of medication was prescribed. After one month, the patient reported symptomatic relief. Again, the same treatment was followed for the next month. During the 2nd visit on 11January 2026, significant improvement was seen in the reports. The results were clearly visible in the ultrasound; the previously diagnosed Grade I-II fatty liver has now completely resolved, and the current ultrasound report is normal. Changeswere assessed at 30-day intervals. Objective markers, including transaminase levels and ultrasound imaging, were analysed before and after the 60-day intervention.

Table 8: Objective and Imaging Outcomes

Parameter	Before treatment (11/11/2025)	After treatment (11/1/2026)	Reference Range
USG	Grade I-II fatty liver	Normal USG	Normal liver echo
SGOT (AST)	58 U/L	35 U/L	15-40 U/L
SGPT (ALT)	105 U/L	48 U/L	10-49 U/L

Alkaline Phosphatase	155 U/L	78 U/L	30-120 U/L
GGT	176 U/L	58 U/L	0-73 U/L
Albumin	5.04 g/dl	3.98 g/dl	3.5 - 5.0 g/dl

Table 9: Subjective Symptoms Grading

Complaints	**Baseline (11-11-2025)**	**1st Follow-up (11-12-2025)**	**2nd Follow-up (11-1-2026)**
Abdominal pain	Grade-2	Grade-2	Grade-0
Fatigue	Grade-2	Grade-1	Grade-0
Indigestion	Grade-2	Grade-1	Grade-0
Loss of appetite	Grade-2	Grade-1	Grade-0
Irregular bowel evacuation	Grade-1	Grade-0	Grade-0

INVESTIGATION REPORTS


[redacted]

Name Age/Sex UID No Referred By	[redacted]	Date Reg No Reported On	18/Nov/2025 08:45AM 012504150030 18/Nov/2025 11:43AM	ULTRASOUND WHOLE ABDOMEN (Done on Voluson S-10 Machine)

ULTRASOUND

CLINICAL PROFILE: Routine

FINDINGS:

The liver is normal in size, outline and echotexture shows fatty infiltration Grade I to II. No focal lesion is seen. The portal vein is normal in calibre and course.

The gall bladder shows adequate distension with smooth wall and normal contents. The intra hepatic biliary radicals and CBD are normal.

The pancreas and spleen are normal.

Both the kidneys are normal in size and outline. The cortico-medullary ratio is preserved. No calculus, hydronephrosis or any other abnormality is seen on either side.

The right kidney measures 103x46mm with a parenchymal thickness of 8.5mm. The left kidney measures 108x52mm with a parenchymal thickness of 10.7mm.

No free fluid is seen in the peritoneal cavity. No lymph node enlargement is seen in the para-aortic region.

The urinary bladder is moderately distended with smooth outline. No obvious mass, clot or debris is seen. Both the ureteric jets are well seen on color doppler.

The prostate is not enlarged. It measures 36x34x26mm and weighs 16gms. The seminal vesicles are symmetrical.

IMPRESSION- Liver echotexture shows fatty infiltration Grade I to II.

To be correlated clinically.


[redacted]

Name Age/Sex UID No Referred By	[redacted]	Date Reg No Reported On	10/Jan/2026 10:45AM 012150415045 10/Jan/2026 11:43AM

ULTRASOUND

ULTRASOUND WHOLE ABDOMEN (Done on Voluson S-10 Machine)

CLINICAL PROFILE: Routine

FINDINGS:

IMPRESSION: NO OBVIOUS PATHOLOGY IS SEEN IN THIS STUDY.

To be correlated clinically.

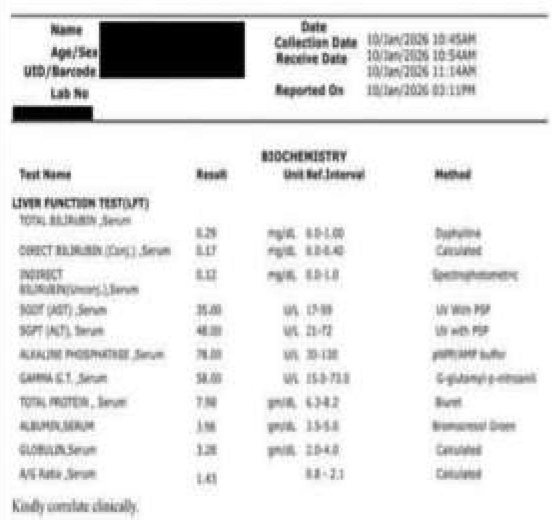
BEFORE TREATMENT	AFTER TREATMENT

Scanned: Ultrasonography Reports

Name Lab No. Ref By Collected Arc Status Collected at	[redacted]	Age Gender Reported Report Status Processed at	[redacted] Male 11/11/2025 12:23:40PM Final [redacted]

Test Report

Test Name	Results	Units	Bio. Ref. Interval
LIVER FUNCTION TEST (LFT)			
AST (SGOT) (IFCC without P5P)	88.0	U/L	15.00 - 40.00
ALT (SGPT) (IFCC without P5P)	105.0	U/L	10.00 - 49.00
AST:ALT Ratio (Calculated)	0.84		<1.00
GGTP (IFCC-L-γ-glutamyl-3-carboxy-4-nitroanilide)	170.0	U/L	0 - 73
Alkaline Phosphatase (ALP) (IFCC-AMP)	105.00	U/L	30.00 - 120.00
Bilirubin Total (Oxidation)	0.28	mg/dL	0.30 - 1.20
Bilirubin Direct (Oxidation)	0.11	mg/dL	<0.2
Bilirubin Indirect (Calculated)	0.18	mg/dL	<1.10
Total Protein (Biuret)	7.84	g/dL	5.70 - 8.20
Albumin (BCG)	3.84	g/dL	3.20 - 4.80
Globulin(Calculated)	3.90	gm/dL	2.0 - 3.5
A : G Ratio (Calculated)	1.00		0.90 - 2.00



Name Age/Sex UID/Barcode Lab No	[redacted]	Date Collection Date Receive Date Reported On	 10/Jan/2026 10:45AM 10/Jan/2026 10:54AM 10/Jan/2026 11:14AM 10/Jan/2026 03:11PM

BIOCHEMISTRY

Test Name	Result	Unit	Ref.Interval	Method
LIVER FUNCTION TEST(LFT)				
TOTAL BILIRUBIN ,Serum	0.29	mg/dL	0.0-1.00	Diphylline
DIRECT BILIRUBIN (Conj.) ,Serum	0.17	mg/dL	0.0-0.40	Calculated
INDIRECT BILIRUBIN(Uncon).),Serum	0.12	mg/dL	0.0-1.0	Spectrophotometric
SGOT (AST) ,Serum	35.00	U/L	17-59	UV With P5P
SGPT (ALT), Serum	48.00	U/L	21-72	UV with P5P
ALKALINE PHOSPHATASE ,Serum	78.00	U/L	38-126	pNPP/AMP buffer
GAMMA G.T. ,Serum	58.00	U/L	15.0-73.0	G-glutamyl-p-nitroanil
TOTAL PROTEIN , Serum	7.98	gm/dL	6.3-8.2	Biuret
ALBUMIN,SERUM	3.56	gm/dL	3.5-5.0	Bromocresol Green
GLOBULIN,Serum	3.28	gm/dL	2.0-4.0	Calculated
A/G Ratio ,Serum	1.43		0.8 - 2.1	Calculated

Kindly correlate clinically.

BEFORE TREATMENT	AFTER TREATMENT

Scanned: Liver Function Test Reports

Discussion: -

In this study, we used Arogyavardhini Vati and Kumaryasava to treat a non-alcoholic patient with grade I fatty liver. Their probable mechanism of action is outlined below. Arogyavardhini Vati has consistently shown its ability to significantly decrease hepatic fat accumulation and bring down elevated liver transaminases in NAFLD patients due to its lipolytic and hepatoprotective properties [4,5]. Similarly, published studies on Kumaryasava and integrated yogic interventions have demonstrated rapid metabolic regulation, which strongly supports the accelerated 60-day recovery seen in this patient [3,6].

Arogyavardhini vati is a kharaliya rasakalpa, a popular formulation with a wide range of therapeutic indications, that contains rasavarga dravya (metallomineral compounds). The medication has been mentioned in the context of yakritvikara (liver disorder) in Bhaishyajyaratnavali and kustha (skin disorder) in Rasaratnasamucchaya[7,8]. Arogyavardhini vati is also known as sarvarogaprashamani [7]. Abhrak bhasma supports health and helps the body's natural metabolism. Amalaki possesses strong antibacterial, antihepatotoxic, and antioxidant qualities[9]. Haritaki relieves liver problems and enhances the digestive tract[10,11]. Bibhitaki is astringent, laxative, and helpful for asthma, bronchitis, hepatitis, and other conditions. Because of its potent antioxidant properties, Shuddha shilajit can help with liver, kidney, and digestive issues, among other conditions[12]. Guggulu regulates cholesterol levels and effectively eliminates undesirable fats[13]. Chitrak is useful for digestive issues such as discomfort and loss of appetite[14,15,16].

Kumaryasava is a fermented galenical containing Aloe vera as the main ingredient. It primarily affects the liver by stimulating the liver's bile production and enhancing liver's function. It possesses pharmacological properties such as Shothahara, Deepana, Pachana, Bhedana, and Yakriduttejaka. Kumari (Aloe vera) Rasa-Tikta, madhura, Vipaka-Madhur, Virya-Sheet, Guna-Guru, snigdha, Picchil, Prabhav-Bhedana, Doshaghnata. Excretion of Aamashay-Pakvashayokt Kapha-Pitta-Vata. Tikta rasa of Kumari (Aloe vera) acts as ~Yakrutottejaka, which constricts the muscles of the large intestines, increases secretions, and helps to clean the intestines [17,18].

Limitation:

A key limitation of this case report is the lack of a long-term follow-up beyond the 60-day block to determine if the complete radiological and biochemical reversal remains completely stable over an extended multi-year period.

Summary Points

- **Patient Profile:** A 41-year-old male with no significant history of alcohol consumption presented with Grade I-II Non-Alcoholic Fatty Liver Disease (Yakriddalyudara). He complained of abdominal pain in the right hypochondrium, fatigue, loss of appetite, and indigestion persisting for several months.
- **Diagnostic Findings:** Laboratory investigations (LFT) showed notably elevated liver enzymes (SGOT, SGPT, ALP, and GGT), and the abdominal ultrasound confirmed Grade I-II fatty infiltration.
- **Intervention:** The patient was managed using a standardized 60-day Ayurvedic regimen comprising Shaman Chikitsa, Arogyavardhini Vati (500 mg, twice daily) and Kumaryasava (30 ml, twice daily).
- **Lifestyle Modifications:** Treatment was paired strictly with Pathya-Apathya (wholesome dietary regulations) and therapeutic yoga practices to restore metabolic balance.
- **Outcomes:** The two-month regimen resulted in complete clinical and radiological reversal of the condition. The patient's transaminases returned to normal physiological ranges, and a follow-up sonogram revealed a completely normal liver appearance.

Conclusion: -

This case study highlights how Grade I Non-Alcoholic Fatty Liver Disease can be completely reversed clinically and radiologically within 60-days regimen of Arogyavardhini Vati and Kumaryasava along with healthy dietary habits, and routine therapeutic yoga. Following the regimen, patients elevated liver enzymes normalized. Furthermore, patients reported complete relief from prior abdominal pain, indigestion with no adverse side effects. Ultimately, we concluded that Ayurvedic interventions play a significant role in the management of non-alcoholic fatty liver.

PatientPerspective: -

"I was highly concerned when my initial ultrasound reports showed a fatty liver alongside high level of liver enzymes, as I suffer from regular abdominal pain and severe daily tiredness. After starting these Ayurvedic medications and altering my diet and exercise, I noticed my digestion improve within a few weeks. By the end of

two months, my energy improved, my pain completely disappeared, and my repeat scans showed my liver is now completely normal."

Declarations: -

Declaration of Patient Consent: -

The authors confirm that they have acquired a patient consent form, in which the patient has granted permission for the publication of the case. It is included in the journal along with pictures and other clinical information. The patient understands that genuine efforts will be made to hide their identity so that their name and initials will not be revealed. However, complete anonymity cannot be assured.

Conflicts of Interest:

No conflicts of interest related to this manuscript's publication

References: -

1.Huang D.Q., El-Serag H.B., Loomba R. Global epidemiology of NAFLD-related HCC: trends, predictions, risk factors and prevention. Nat Rev Gastroenterol Hepatol. 2021;18(4):223–238.
2. Kozłowska A. Clinical Insights into Non-Alcoholic Fatty Liver Disease and the Therapeutic Potential of Flavonoids: An Update. Nutrients. 2025 Mar 9;17(6):956.
3. Panda, A. K., Patel, D., Mohanty, R. K., Swain, D. P., & Prativa, S. (2021). Effectiveness of yogic interventions in non-alcoholic fatty liver disease: Case series. International Journal of Current Research and Review, 13(19), 67–71.
4. Kumar A, et al. Efficacy of Arogyavardhini Vati in Non-Alcoholic Fatty Liver Disease: A Randomized Controlled Trial. Journal of Ayurveda and Integrative Medicine. 2022;13(2):100-106.
5. Mishra S, et al. Evaluation of hepatoprotective activity of herbo-mineral formulation Arogyavardhini Vati. Ancient Science of Life. 2019;38(3):142-148.
6. Sharma R, et al. Management of non-alcoholic fatty liver disease through Ayurvedic formulations: A clinical review. Journal of Research in Ayurvedic Sciences. 2023;7(1):45-52.
7. Ambikadatta Shastri. Rasaratna Samuchchya. 9th edition. Ch no. 20. Verse no.87. Varanasi: Chaukhamba Sanskrit Publisher, 1994; 400.
8. Kaviraj Govinda Das Sen. Bhaisajyaratnavali. Siddhipada Hindi Commentary, Prof. Siddhinandana Mishra, editor. 1st edition. Kustharogadhikar, Chapter no. 54, verse n. 117, Varanasi: Chaukhamba Surbharati Prakashan, 2012; 871.
9. Rathwa, et al. (2018). Pharmacognostical study of Amalaki. European Journal of Biomedical and Pharmaceutical Sciences, 5(7), 764–766.
10. Gupta A, Mishra AK, Bansal P. Phytochemistry and pharmacological activities of Hritaki. Journal of Pharmacy Research, 2010; 3(2): 417-424.
11. Prakash, et al. Biological and pharmacological properties of Terminalia chebula Retz. (Haritaki). International Journal of Pharmaceutical Sciences, 4(3), 62–68.
12. Sharma, P., Jha, J., Shrinivas, V., Dwivedi, L. K., Suresh, P., & Sinha, M. (2003). Shilajit: Evaluation of its effects on blood chemistry of normal human subjects. Ancient Science of Life, 23
13. Ruitang Deng Therapeutic Effects of Guggulu and its Constituents Guggulsterone: Cardiovascular Benefits Cardiovascular Drug Reviews, 2007; 25: 4.
14. Kanchana, N., & Sadiq, M. (2011). Hepatoprotective effect of Plumbago zeylanica on paracetamol-induced liver toxicity in rats. International Journal of Pharma Sciences, 3(1), 151–154.
15. Thanigavelan et al. (2014). Hydroalcoholic extract of Plumbago zeylanica Linn root bark exhibits analgesic and anti-inflammatory activities in an experimental rat model. American Journal of Pharmaceutical Health Research, 2(4), 209–221.
16. Sudha, R. P., & Sushma, A. M. (2011). Antihyperlipidemic effect of aqueous extract of Plumbago zeylanica roots in diet-induced hyperlipidemic rats. Pharma, 3(1), 151–154.
17. Sultana S, et al. Medicinal plants managing non-alcoholic fatty liver disease: A comprehensive review. Phytotherapy Research. 2024;38(1):12-28.
18. Joshi K, et al. Therapeutic potentials of Aloe vera fermentation products in metabolic liver disorders. International Journal of Green Pharmacy. 2021;15(4):310-317.