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Case Report

Ayurvedic management of Non-Alcoholic Fatty Liver Disease (NAFLD) with biochemical and symptomatic outcomes: A case study

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Abstract

Non-Alcoholic Fatty Liver Disease (NAFLD) is increasingly recognized as a metabolic liver disorder linked to a sedentary lifestyle and poor dietary habits. This case study explores an integrative approach to managing Grade 2 NAFLD in a 48-year-old male patient, diagnosed using both modern and Ayurvedic frameworks. The treatment regimen incorporated *Phalatrikadi Kwatha*, *Shankha Vati*, and *Eranda Haritaki Churna* over 60 days, focusing on restoring *Agni*, reducing *Kapha-Meda Dushti*, and clearing *Srotorodha*. Notable improvements were observed in gastrointestinal symptoms, lipid profile, liver enzymes, and ultrasound findings. The Ayurvedic perspective interpreted NAFLD as a *Santarpanajanya Vyadhi* involving *Yakrit Dushti*, with participation of three *Doshas*, primarily *Kapha*. This case highlights the relevance of Ayurvedic principles of individualized diagnosis, stage-wise treatment, and metabolic correction in effectively managing early stage NAFLD alongside modern diagnostics. It underscores the potential of classical interventions in chronic liver conditions when applied with clinical precision.

Keywords: *Eranda Haritaki Churna,* NAFLD*, Phalatrikadi Kwatha, Santarpanajanya Vyadhi, Shankha Vati, Yakrit Dushti.*

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Introduction

Non-Alcoholic Fatty Liver Disease (NAFLD) has emerged as one of the most prevalent causes of chronic liver disease globally, with estimates suggesting it affects nearly a quarter of the world's population. As a disease closely tied to rising rates of obesity, insulin resistance, and metabolic syndrome, NAFLD poses a significant public health challenge. The clinical spectrum ranges from benign hepatic steatosis to non-alcoholic steatohepatitis (NASH), which carries a greater risk of progression to fibrosis, cirrhosis, and, ultimately, hepatocellular carcinoma. Despite the growing burden, treatment remains largely supportive, with lifestyle interventions such as dietary regulation and weight loss serving as the mainstays of therapy in the absence of approved pharmacological options. (1)

From the standpoint of Ayurvedic medicine, NAFLD may be conceptualized as a *Santarpanajanya Vyadhi,* a disorder arising from excessive nourishment and impaired metabolic processing. The pathophysiology outlined in classical Ayurvedic texts attributes the origin of such diseases to a dysfunction in *Agni*, resulting in the formation of *Apakwa Anna Rasa* (poorly digested food). This leads to the vitiation of *Kapha* and *Meda*, which accumulate in the *Yakrit* (liver), a key organ associated with *Raktavaha Srotas* (blood channels of the body) and governed by *Pitta Dosha*. (2)

The roots of *Raktavaha Srotas* are present in the *Yakrit* and *Pliha* (spleen). (3) The concept of *Srotas* is mentioned in Ayurveda in a functional way. As *Yakrit* is the *Mulasthana* (root) of *Raktavaha Srotas*, the functions of the liver can be correlated with those of *Yakrit*. (4)

This case study seeks to examine a patient diagnosed with Grade 2 NAFLD through the lens of both modern and Ayurvedic frameworks. Emphasis is placed not only on diagnostic and biochemical parameters but also on an individualized treatment approach rooted in Ayurvedic principles. By integrating clinical outcomes with classical pathogenesis models, the study aims to explore the potential for Ayurvedic management strategies to contribute meaningfully to the care of patients with fatty liver disease.

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Case report

Medical History of current illness

A 48-year-old married man, holding a graduate degree and working in business, presented to the outpatient department with persistent complaints of abdominal distension, loss of appetite, loss of taste, and constipation for the past five months. The symptoms had an insidious onset and became worse gradually. **Abdominal distension** was noted throughout the day and was associated with a sensation of bloating and fullness. **Constipation** was present characterized by infrequent and hard stools, without associated bleeding or pain. Despite using an over-the-counter laxative from a nearby medicine store, the patient's symptoms did not improve so he sought Ayurvedic treatment. He had no complaints of nausea or vomiting. There was no prior history of alcohol intake or any addictions. Additionally, he reported feeling less energetic and physical activity has decreased as a result of the persistent fatigue.

Personal history

His weight was 92 kg, and he measured 5 feet 8 inches in height, resulting in a Body Mass Index (BMI) of 30.8, classifying him as obese according to WHO criteria. On further inquiry, it became evident that his dietary habits were dominated by frequent intake of oily and spicy foods, including processed snacks. These were often consumed during late-night meals, a pattern that became routine. He acknowledged engaging in minimal physical activity and described his daily life as largely sedentary.

Past medical history

The patient has no prior diagnoses of cardiovascular problems, hypertension, or diabetes mellitus. He had never been hospitalized or undergone major surgery before, and had no known drug allergies.

Medical history in the family

The patient's father passed away from a myocardial infarction at the age of 68 and had a history of hypertension. At the age of 72, his mother is free of any known long-term health issues. He has two siblings: a healthy 45-year-old sister and a 52-year-old brother who has a history of hypertension. The patient's 20-year-old son is in good health.

Clinical examination

At the time of assessment, the patient's vital signs were within normal physiological limits: blood pressure measured 125/82 mmHg, pulse rate was 75 beats per minute, respiratory rate was 20 breaths per minute, and body temperature was 98.5°F. On abdominal examination, the abdomen was noted to be distended and firm to palpation. Mild tenderness was elicited in the right lumbar region, and dullness to percussion was observed in the same area. On cardiovascular system examination, the heartbeat and rhythm were regular and normal. No abnormal heart sounds were noted. Peripheral pulses were noticeable and symmetrical. There was no jugular vein distension or peripheral oedema. When the respiratory system was examined, the chest expanded normally and both sides produced clear breath sounds. No signs of respiratory distress were seen. On central nervous system examination, the patient was cognizant of time, location, and people. Motor and sensory examinations were normal with no signs of neurological deficits. Musculoskeletal examination revealed no tenderness or swelling in the joints. The range of motion and muscle tone was normal.

Diagnosis

The patient underwent abdominal ultrasonography as advised. The ultrasonography shows increased hepatic echogenicity suggestive of fatty changes with loss of periportal echogenicity. These lifestyle factors offer a clear clinical context contributing to the development of NAFLD. The case was assessed using classical Ayurvedic parameters. The pathology involved *Agnivikruti* (impaired digestive power), leading to the formation of *Apakwa Anna Rasa*, which vitiated *Kapha* and *Meda*, resulting in *Srotorodha* (obstruction of body channel) and subsequent fat deposition in the liver and **t**he Ayurvedic diagnosis was *Yakrit Vikara* (liver disease).

Differential diagnosis

In evaluating this case, potential differential diagnoses were considered. Alcoholic Liver Disease (ALD)- Alcohol intake was thoroughly assessed. The patient denied alcohol consumption, and this was agreed by family members, making alcoholic liver disease unlikely. (5) Drug or Toxin-Induced Liver Injury (DILI)-The patient had no history of exposure to hepatotoxic medications. No recent changes in medication were reported. Hepatitis B and C- Negative hepatitis B and C serologic results excluded viral hepatitis. (6) The patient was obese. Obesity is termed "Sthaulya" in Ayurveda, which is considered a serious and challenging health condition, and has been classified by Acharya Charaka as having symptom of *Kshudatimatram* (excessive hunger), but this patient has *Agnimandya.* So it was not *Sthaulya.* (7) *Koshtashrita Kamala* (Hepatocellular jaundice) is a liver disorder described in the classical Ayurvedic texts. This patient has similar symptoms, but *Peeta Netrata* (yellow discoloration of the eyes)*, Peeta Varnyata Mutra* (yellow-colored or dark yellow urine) were absent, and the total bilirubin was normal so it was ruled out. (8) Although similar symptoms are observed in *Udara Shoola* (abdominal pain), this condition was ruled out as the patient did not report any pain. (9)

Treatment Plan

The disease was equated with *Sama Dosha*, which is the association of *Doshas* with *Ama* (an undigested metabolic byproduct) mentioned by *Acharya Vagbhata*, contributing to the manifestation of *Yakrit Vikara* in this case. The treatment of *Sama dosha* involves *Deepana* (appetizer), *Pachana* (digestive), and use of different types of *Shodhana* (purification) based on the strength of the patient. (10) *Phalatrikadi Kwatha* primarily exhibits *Kashaya* (astringent) and *Tikta* (bitter), two of the six tastes (*Shad Rasa*) in Ayurveda, and *Katu Vipaka* (pungent metabolic end effect), and it has *Ushna veerya*, which means hot in potency. So these formulations possess notable actions such as *Lekhana* (scraping), *Rechana* (mild purgation), *Deepana,* and *Pachana.* Therefore, herbs and formulations with *Deepana, Pachana, Srotoshodhana* (cleaning of body channels), *Vatanulomana* (*Vata*-regulating), and *Yakritprasadana* (liver-rejuvenating) actions are beneficial in the management of fatty liver. (11) *Shankh Vati* is mentioned in the *Agnimandya Rogadhikara* chapter of *Bhaishajya Ratnawali*. It is composed of ingredients such as *Chincha Kshar*, *Panch Lavana*, and *Nimbu Svarasa*, all known for their *Deepana* and *Pachana* properties. (12) *Eranda Haritaki Churna*, combining castor oil with *Haritaki*, inherits the property of *Virechana* (laxative effect), which is a type of *Shodhana* and serves the purpose of cleansing *Pakvashaya* (large intestine), which helps in facilitating bowel regularity, reducing abdominal bloating, and indirectly relieving hepatic load by promoting regular detoxification and *Srotoshodhana*. (13)

The details are given in Table 1.

Table 1: Treatment

Medicines Used	Duration	Drug	Dose And Frequency	Route of administration
1	Day 1-15	*Phalatrikadi Kwatha*	20ml twice a day before meal	Oral
		Shankh Vati	250mg twice a day after meal	Oral
		Eranda Haritaki Churna	3gm at bed time	Oral
2	Day 16-30	*Phalatrikadi Kwatha*	20ml twice a day before meal	Oral
		Shankh Vati	250mg twice a day after meal	Oral
		Eranda Haritaki Churna	2gm at bed time	Oral
3	Day 31-45	*Phalatrikadi Kwatha*	20ml twice a day before meal	Oral
		Shankh Vati	125 mg twice a day after meal	Oral
		Eranda Haritaki Churna	1gm at bed time	Oral
4	Day 46-60	*Phalatrikadi Kwatha*	20ml twice a day before meal	Oral
		Shankh Vati	125 mg twice a day after meal	Oral

*All the formulations used in the treatment were classical Ayurvedic medicines procured from GMP-certified pharmacies. The batch details are as follows: *Phalatrikadi Kwatha* (Batch No: **KS-214**) –Ashtang Health Care Pvt. Ltd. Gujrat. *Shankh Vati* (Batch No: 037) – Unjha Ayurvedic Pharmacy Gujrat. *Eranda Haritaki Churna* (Batch No: 255) – Shree Narnarayan Ayurvedic Pharmacy, Ahmedabad.

Timeline of treatment:

The treatment was given to the patient for 60 days. The timeline is detailed in Table 2.

Table 2: Timeline of Treatment

Sr No	Incident	Date
1	First USG and Clinical Investigation	23/11/2024
2	Treatment started	25/11/2024
3	First follow up	10/12/2024
4	Second follow up	25/12/2024
5	Third follow up	10/01/2025
6	Fourth follow up	25/01/2025

Diet

The patient was advised to restrict the intake of high-fat foods and processed snacks.

Observations and Results

Observations

The improvement in the symptoms was observed on the basis of clinical gradation scale. (14) Details are given in Table 3.

Table 3: Symptomatic Outcome of Treatment

Symptoms	Day 0 (Before Tx)	Day 15	Day 30	Day 45	Day 60
Agnimandya (Decreased digestion power)	Grade 3	Grade 2	Grade 1	Grade 0	Grade 0
Aruchi (Loss of taste)	Grade 4	Grade 3	Grade 2	Grade 1	Grade 0
Purishbaddhata (Constipation)	Grade 3	Grade 2	Grade 1	Grade 0	Grade 0
Adhmana (Abdominal distension)	Grade 4	Grade 3	Grade 2	Grade 1	Grade 0

Biochemical Parameters Outcome

Biochemical parameters were evaluated before and after treatment. They were done at Dr Lal Path lab. After 60 days of Ayurvedic treatment, notable improvements were seen across all laboratory parameters, which returned to normal levels. The changes were especially significant in serum glutamic-pyruvic transaminase, serum cholesterol, low-density lipoprotein, and serum triglyceride levels. as detailed in Table 4.

Table 4: Biochemical parametric outcome of treatment

Parameter	Before Treatment	After Treatment	% Improvement
Serum Cholesterol (mg/dL)	268.2	185.3	31%
Serum Triglycerides (mg/dL)	189.7	90.8	52%
Low-Density Lipoprotein (mg/dL)	186.56	105.38	43.5%
High-Density Lipoprotein (mg/dL)	54	56	3.5%
Serum glutamic-oxaloacetic transaminase (U/L)	32	30	6.25%
Serum glutamic-pyruvic transaminase (U/L)	62	38	38.7%

Ultrasonography

Figure 1: Grade 2 fatty liver (Before Treatment)

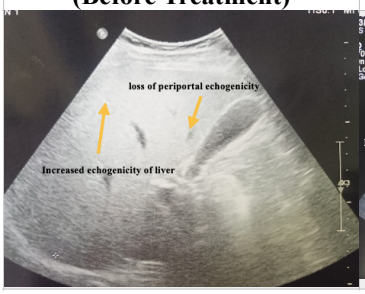
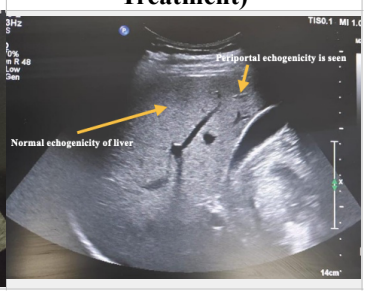


Figure 2: Normal Liver (After Treatment)



Ultrasonography before treatment showed increased hepatic echogenicity with loss of periportal echogenicity, suggestive of fatty liver changes, while post-treatment imaging revealed a

normal liver size and echogenicity, indicating resolution of the fatty infiltration.

Discussion

Non-Alcoholic Fatty Liver Disease (NAFLD) is increasingly prevalent as a hepatic expression of metabolic syndrome. This case exemplifies the typical clinical profile poor dietary habits, and a sedentary lifestyle culminating in Grade 2 hepatic steatosis. Elevated lipid profiles and liver enzymes further corroborated the diagnosis. Post-treatment assessments revealed significant improvement in both subjective symptoms and biochemical markers, suggesting effective reversal of early-stage hepatic pathology. (15) *Acharya Charaka* has described that foods and drinks which are unctuous (oily) and hot lead to the morbidity of *Raktavaha Srotas*, which ultimately leads to the derangement of liver functions. (16) The patient's diet included regular consumption of oily and spicy food, which supports *Acharya Charaka's* view that such dietary habits might trigger liver dysfunction. Non-alcoholic fatty liver disease (NAFLD) is associated with unhealthy lifestyle habits such as excessive calorie intake, poor dietary choices, and physical inactivity. A high-fat diet can contribute to fat accumulation in the liver. (17) A largely sedentary routine with limited physical activity was noted in patient's history which aligns with established risk factors of NAFLD. The condition progresses through several mechanisms, including increased mobilization of fatty acids from peripheral adipose tissue, reduced hepatic utilization of fatty acids, enhanced hepatic fatty acid synthesis, impaired secretion of fats from the liver, and elevated esterification of fatty acids into triglycerides. (18) These factors ultimately led to disturbed metabolism of the liver, which explains the elevated lipid levels and hepatic fat observed in this patient. NAFLD encompasses a spectrum of liver conditions, ranging from simple fat accumulation to non-alcoholic steatohepatitis (NASH), the latter being associated with a higher possibilities of liver fibrosis, cirrhosis, and even liver carcinoma. That's why early identification and intervention are crucial. (1) Since NAFLD is associated with *Agni* dysfunction, restoring and maintaining proper *Agni* function is essential for effective management. (2)

The therapeutic approach adopted was multipronged and individualized, employing classical Ayurvedic formulations, *Phalatrikadi Kwatha* is mentioned in *Bhaishajya Ratnawali*, which is a decoction composed of herbs like *Haritaki*, *Amalaki*, *Guduchi*, and *Kutki*, which possess good hepatoprotective properties. (19)(20) The ingredient *Kutki* has qualities which causes reduction in lipid content and fatty infiltration of the liver. (21) Compared to findings in these references, *Phalatrikadi Kwatha* played a major role due to its hepatoprotective property. Additionally, the ingredient *Kutki* contributed to lowering the lipid content (as shown in Table no.4). Fatty infiltration in the liver was also reduced which is evidenced by the ultrasonography report. *Shankh Vati*, a classical Ayurvedic formulation with *Deepana-Pachana* properties is effective in relieving symptoms such as *Agnimandya*, *Adhmana*, and *Aruchi*. (12) In the present case, administration of *Shankh Vati* showed progressive symptomatic relief over 60 days. The complaints of Agnimandya, Adhmana *and, Aruchi* were resolved completely after the treatment. These outcomes are consistent with the classical claims regarding *Shankh Vati*'s efficacy, reinforcing its therapeutic potential in managing digestive disturbances. *Eranda Haritaki Churna* exhibits *Virechana* property. (13) In this case, the patient experienced complete relief from Purishbaddhata, indicating the effectiveness of *Eranda Haritaki Churna*.

The clinical trajectory of the patient is marked by symptomatic relief, along with a gradual tapering of dosages, demonstrates the efficacy of stage-wise and constitution-specific Ayurvedic therapy. The overall outcome of the case was favourable. The patient showed significant improvement both clinically and biochemically. Subjective symptoms such as Agnimandya, Aruchi, Adhmana and Purishbaddhata resolved completely over a 60-day treatment period (shown in Table no.3) and visible reduction in hepatic fat on follow-up ultrasonography. Biochemical parameters also showed marked improvement, including a 52% reduction in serum triglyceride, 43.5% decrease in low density lipoprotein levels, 38.7% reduction in Serum glutamic-pyruvic transaminase and a 31% decrease in serum cholesterol. These outcomes suggest that the integrated Ayurvedic approach employed in this case was effective in managing Grade 2 NAFLD.

This case highlights the therapeutic potential of combining modern diagnostics with Ayurvedic interventions for early-stage NAFLD. Restoring *Agni*, correcting imbalances of the *Doshas*, and clearing *Srotorodha* through targeted formulations may effectively halt or reverse the hepatic disease process when instituted early. Considering the positive outcomes, Ayurvedic management should be further explored through rigorously designed clinical trials to validate its efficacy in larger populations. It also suggests that integrative strategies that combine Ayurvedic therapies with conventional diagnostics may offer new avenues for managing NAFLD. Patient education regarding diet, physical activity, and digestive health should be emphasized.

Conclusion

This case illustrates how timely Ayurvedic intervention can offer tangible improvements in NAFLD. With sustained dietary changes and appropriate Ayurvedic medicines, the patient experienced noticeable relief from symptoms and improvement in metabolic health, highlighting the value of Ayurvedic management in NAFLD.

Patient perspective

After the treatment, the patient was completely satisfied. There was good improvement in his digestion and constipation. After completion of the treatment, he was feeling healthy and enthusiastic about doing his day-to-day stuff.

Patient consent

For the publication of this case study, written consent was obtained from the patient.

References

1. Pouwels S, Sakran N, Graham Y, Leal A, Pintar T, Yang W, Kassir R, Singhal R, Mahawar K, Ramnarain D. Non-alcoholic fatty liver disease (NAFLD): a review of pathophysiology, clinical management and effects of weight loss. BMC endocrine disorders. 2022 Mar 14;22(1);63. Available from: https://pubmed.ncbi.nlm.nih.gov/35287643/
2. Sahu AK, Upadhyay A, Bhakuni H, Attanayake AM, Sharma P. Effect of Ayurveda interventions in non-alcoholic grade II fatty liver associated with obesity–A case report. Journal of Ayurveda and Integrative Medicine. 2022 Jul 1;13(3):100605. Available from: https://pubmed.ncbi.nlm.nih.gov/35868134/
3. Sharma PV. Charaka Samhita of Acharya Agnivesha. Reprint edition. Varanasi; Chaukhambha Orientalia; 2011.330p.
4. Prabhakarrao PP, Ravindra DP, Rambhau SS, Chandrakant SV. Conceptual Study of Yakruta as a Mulasthana of

Raktavaha Strotasa with Special Reference to Liver Functions. IJAM [Internet]. 2014 Dec. 27 [cited 2025 Sep. 18];5(4). Available from: https://ijam.co.in/index.php/ijam/article/view/05392014

5. Shoreibah M, Raff E, Bloomer J, Kakati D, Rasheed K, Kuo YF, Singal AK. Alcoholic liver disease presents at advanced stage and progresses faster compared to non-alcoholic fatty liver disease. Annals of Hepatology. 2016 Feb 15;15(2):183-9. Available from: https://www.medigraphic.com/cgibin/new/resumenI.cgi?IDREVISTA=13&IDARTICULO=63882&IDPUBLICACION=6315
6. Raman M, Allard J. Nonalcoholic fatty liver disease: a clinical approach and review. Canadian Journal of Gastroenterology and Hepatology. 2006;20(5):345-9. Available from: https://onlinelibrary.wiley.com/doi/abs/10.1155/2006/918262
7. Singh V, Singh JP, Nathani N. A clinical study to evaluate the effect of specific diet, yogic practices, and ruksha udvartana on obesity (Sthaulya). Journal of Ayurveda. 2023 Jan 1;17(1):15-21. Available from: https://journals.lww.com/joay/fulltext/2023/17010/a_clinical_study_to_evaluate_the_effect_of.4.aspx
8. Amargol AC, M AK. Ayurvedic management of Koshtashrita Kamala (Hepatocellular Jaundice) - A Case report. IJAM [Internet]. 2021 Jun. 29 [cited 2025 Sep. 27];12(2):405-8. Available from: https://www.ijam.co.in/index.php/ijam/article/view/1861.
9. Subhash Ranade, Anand Kalaskar. Rognidan Part 2. Reprint Edition. Pune; Proficient Publishing House; 2015. 313p.
10. Tripathi B. Ashtang Hridayam of Srimadvagbhata, Reprint edition. Delhi; Chaukhamba Sanskrit Pratishthan; 2017.188p.
11. Chaudhary M, Chaudhary V, Soni M. A Clinical Study to Evaluate the Comparative Efficacy of Phaltrikadi Kashaya and Phaltrikadi Kashaya Ghana Vati in the Management of Non-Alcoholic Fatty Liver Disease. AYUSHDHARA, 2024;11(6):93-103. Available from: https://doi.org/10.47070/ayushdhara.v11i6.1836
12. Shastri A. Bhaishajya Ratnavali (Hindi Teeka) of Kaviraj Govinda Das Sen. 20th ed. Varanasi; Chaukhambha Prakashan; 2010. 349p.
13. Kumari M, Meena LK, Vardhan P. A Randomized Clinical Study to Compare the Effect of Eranda Bhrishta Haritaka Churna Orally and Trivrita Taila Matrabasti for Apana Vata Anulomana in Udavartini Yonivyapada (Primary Dysmenorrhea). Journal of Ayurveda. 2021 Jun 7;13(3):73–86. Available from: https://www.researchgate.net/publication/352180515_A_Randomized_Clinical_Study_to_Compare_the_Effect_of_Eranda_Bhrishta_Haritaka_Churna_Orally_and_Trivrita_Taila_Matrabasti_for_Apana_Vata_Anulomana_in_Udavartini_Yonivyapada_Primary_Dysmenorrhea https://pmc.ncbi.nlm.nih.gov/articles/PMC12231980/#bibr4-27536130251356447
14. Baghel MS, Rajagopala S. Developing guidelines for clinical research methodology in Ayurveda. Institute for Postgraduate Teaching & Research in Ayurveda, Gujarat Ayurved University, Jamnagar. 2011. Available from: https://www.rvpganagpur.com/uploads/2_WHO_Scoring_of_Ayurveda_Symptoms.pdf
15. Saiman Y, Duarte-Rojo A, Rinella ME. Fatty Liver Disease: Diagnosis and Stratification. Annual Review of Medicine. 2022 Jan 27;73(1):529–44. Available from: https://pubmed.ncbi.nlm.nih.gov/34809436/
16. Sharma PV. Charaka Samhita of Acharya Agnivesha. Reprint edition. Varanasi; Chaukhambha Orientalia; 2011. 332p.
17. Sawarkar G, Sawarkar P. The Impact of Sira Vedha (Phlebotomy) at the Right Elbow Joint in the Treatment of Non-Alcoholic Fatty Liver Disease-A Research Report. Journal of Pharmacy and Bioallied Sciences. 2024 Dec 1;16(Suppl 4): S4182-4. Available from: https://pubmed.ncbi.nlm.nih.gov/39927049/
18. Vedanarayanan MS, Krishnan N. Ayurvedic formulation of Liv-Pro-08 reduces nonalcoholic fatty liver disease in rats fed with high-fat diet. Journal of Acupuncture and Meridian Studies. 2011 Dec 1;4(4):236-41. Available from: https://pubmed.ncbi.nlm.nih.gov/22196506/
19. Shastri A. Bhaishajya Ratnavali (Hindi Teeka) of Kaviraj Govinda Das Sen. 20th ed. Varanasi; Chaukhambha Prakashan; 2010. 377p.
20. Mishra S, Kajaria D. Ayurvedic management of amoebic liver abscess-a case report. Journal of Ayurveda and Integrative Medicine. 2022 Apr;13(2):100520. Available from: https://pubmed.ncbi.nlm.nih.gov/35177294/
21. Shetty SN, Mengi S, Vaidya R, Vaidya AD. A study of standardized extracts of Picrorhiza kurroa Royle ex Benth in experimental nonalcoholic fatty liver disease. Journal of Ayurveda and integrative medicine. 2010 Jul;1(3):203. Available from: https://pubmed.ncbi.nlm.nih.gov/21547049/

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