

Research Article

Therapeutic Scope of *Cynara Scolymus* in the Management of Non-Alcoholic Fatty Liver Disease: A Homoeopathic Perspective

Brajesh Kumar, Rita Kumari, Suman Sinha, and Kanak Kumar

Department of Practice of Medicine, R.B.T.S. Govt. Homoeopathic Medical College & Hospital, Muzaffarpur

Correspondence should be addressed Dr. Brajesh Kumar, brajesh1821992@gmail.com, PG Scholar

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Abstract Non-Alcoholic Fatty Liver Disease (NAFLD) has emerged as one of the most prevalent chronic hepatic conditions globally, with a growing burden in the Indian subcontinent. Conventional management remains largely supportive, underscoring the need for integrative therapeutic modalities. *Cynara scolymus* (Artichoke), a botanical remedy with centuries of ethnomedicinal use, has been introduced into homoeopathic pharmacopoeia primarily for its documented actions on hepatic and biliary functions. This article critically reviews the homoeopathic materia medica of *Cynara scolymus*, synthesises contemporary phytochemical and clinical evidence, and proposes a rational framework for its application in the spectrum of NAFLD — from simple steatosis to Non-Alcoholic Steatohepatitis (NASH). Repertorial correlations, comparative remedy analysis, and potency-dosage guidelines are discussed. The article advocates for structured clinical trials integrating homoeopathic methodology to validate the growing empirical evidence.

Keywords *Cynara scolymus*; NAFLD; NASH; Homoeopathic Hepatology; Phytochemicals; Cynarin; Steatosis; Liver

Introduction

Non-Alcoholic Fatty Liver Disease (NAFLD) encompasses a spectrum of hepatic pathologies ranging from simple steatosis to the more aggressive Non-Alcoholic Steatohepatitis (NASH), which may progress to cirrhosis and hepatocellular carcinoma. The global prevalence of NAFLD is estimated at 25–30%, with prevalence in India reported between 9–32% across various studies, correlating with the rising epidemic of metabolic syndrome, type 2 diabetes mellitus, and obesity. [1]

Conventional pharmacotherapy for NAFLD remains limited, with no FDA-approved specific drug therapy. Lifestyle modification — weight loss, dietary change, and exercise — forms the cornerstone of management. [2] This therapeutic lacuna has stimulated interest in complementary and alternative medical systems, including Homoeopathy, which offers a patient-centred, individualised approach rooted in empirical provings, clinical observation, and increasingly, phytopharmacological corroboration.

Cynara scolymus (Family: Asteraceae), commonly known as Globe Artichoke, has garnered interest both in conventional phytomedicine and homoeopathic practice for its hepatoprotective, lipid-

lowering, choleric, and antioxidant properties. This article presents a scholarly post-graduate review of *Cynara scolymus* through a homoeopathic lens, integrating materia medica, pharmacognosy, and evidence-based medicine.

Phytochemistry and Pharmacology of *Cynara Scolymus*

Active Phytoconstituents: The therapeutic activity of *Cynara scolymus* is attributable to a rich phytochemical profile identified in the leaves, flower heads, and stems. The principal bioactive compounds include caffeoylquinic acid derivatives — most notably Cynarin (1,3-dicaffeoylquinic acid) — alongside flavonoids (luteolin, apigenin, scolymoside), chlorogenic acid, caffeic acid, inulin, and bitter sesquiterpene lactones (cynaropicrin). [3]

Cynarin is the most pharmacologically characterised compound, demonstrating hepatoprotective, hypolipidaemic, and choleric effects in both in vitro and in vivo models. Luteolin, a major flavonoid, modulates the NF- κ B inflammatory pathway and demonstrates potent free-radical scavenging activity. These combined actions render *Cynara scolymus* uniquely suited to the multifactorial pathogenesis of NAFLD.

Table 1: Phytochemical Constituents of Cynara scolymus and Their Relevance to NAFLD Pathophysiology

Phytochemical	Chemical Class	Primary Action	Relevance in NAFLD
Cynarin	Caffeoylquinic acid	Bile stimulation, antioxidant	Reduces hepatic fat accumulation
Luteolin	Flavonoid	Anti-inflammatory, antioxidant	Suppresses NF- κ B pathway
Chlorogenic Acid	Phenolic acid	Lipid metabolism regulation	Decreases LDL & triglycerides
Scolymoside	Flavone glycoside	Hepatoprotective	Shields hepatocytes from oxidative injury
Apigenin	Flavonoid	Anti-fibrotic, lipid-lowering	Reduces hepatic stellate cell activation
Inulin	Fructooligosaccharide	Prebiotic, gut modulation	Improves gut-liver axis dysbiosis
Silymarin-like phenols	Polyphenol	Antioxidant, anti-inflammatory	Similar mechanism to milk thistle

Source: Compiled from Kraft [3], Gebhardt [4], and Mehmetçik et al. [5] (2008)

Mechanisms of Action Relevant to NAFLD:

The pathogenesis of NAFLD involves multiple intersecting mechanisms: insulin resistance, increased de novo lipogenesis, impaired beta-oxidation of fatty acids, gut dysbiosis, and oxidative stress-driven hepatocellular injury. The "two-hit" and more contemporary "multiple parallel hits" hypotheses describe how these factors synergistically produce hepatic injury.

Cynara scolymus addresses several of these mechanisms simultaneously:

- **Choleretic Effect:** Cynarin stimulates bile acid secretion, improving the emulsification and excretion of lipids from hepatocytes. This directly reduces hepatic fat deposition (steatosis). [6]
- **Antioxidant Activity:** Luteolin and chlorogenic acid neutralise reactive oxygen species (ROS), reducing lipid peroxidation — a critical driver of progression from simple steatosis to NASH. [4]
- **Hypolipidaemic Action:** Multiple trials demonstrate significant reductions in total cholesterol, LDL, and triglycerides following Cynara extract administration, attributed to inhibition of HMG-CoA reductase activity and enhanced biliary cholesterol elimination. [7]
- **Anti-inflammatory Effect:** Luteolin and apigenin suppress pro-inflammatory cytokines (TNF- α , IL-6, IL-1 β) and modulate the NF- κ B pathway, thus potentially halting NASH progression. [8]
- **Gut-Liver Axis Modulation:** Inulin content acts as a prebiotic, favourably modulating gut microbiota — a recognised contributor to NAFLD pathogenesis through increased intestinal permeability and endotoxin translocation. [9]

Cynara Scolymus in Homoeopathic Materia Medica

Historical introduction and proving: Cynara scolymus entered homoeopathic practice primarily through clinical observation rather than a structured Hahnemannian drug proving. Its symptomatology has been compiled largely from phytotherapeutic literature and clinical cures recorded in European homoeopathic practice. Boericke's Materia Medica with Repertory succinctly describes its sphere of action as "mainly on the liver and digestive functions," with specific affinity for hepatic engorgement, deficient bile secretion, and abdominal flatulence. [10]

The remedy is available as a mother tincture (Q) and in various potencies, typically prepared from the fresh leaves of the artichoke plant, standardised for cynarin content in some pharmacopoeial preparations.

Key Symptom Profile (Materia Medica Essence)

Based on Boericke, Clarke, and contemporary clinical homoeopathic literature, the principal indications of Cynara scolymus include:

GENERALS: Obesity; metabolic syndrome tendency; sluggishness and heaviness; worse after rich or fatty food; desire for alcoholic beverages.

LIVER & BILIARY SYSTEM: Hepatomegaly with tenderness; fatty degeneration of the liver; deficient bile secretion; nausea and vomiting after fatty meals; cholecystitis tendency; biliary colic; jaundice (mild).

DIGESTIVE SYSTEM: Flatulence, bloating, fullness after meals; constipation alternating with loose stool; offensive stool; loss of appetite or excessive hunger.

CARDIOVASCULAR: Arteriosclerotic tendency; hypercholesterolaemia; palpitation with liver complaints.

MODALITIES: Worse: fatty/rich food, alcohol, morning; Better: light diet, rest, warmth.

Repertorial Analysis and Comparative Remedy Study

Repertorial Rubrics: Using Kent's Repertory and Boericke's Repertory, the following rubrics are clinically relevant for *Cynara scolymus* in NAFLD presentations:

- ABDOMEN — LIVER: Enlargement of liver (*Cynara scolymus*, *Chelidonium*, *Lycopodium*, *Phosphorus*, *Carduus mar.*)
- ABDOMEN — LIVER: Fatty degeneration (*Phosphorus*, *Cynara scolymus*, *Cholesterol*)
- STOMACH — Nausea: After fatty food (*Cynara scolymus*, *Pulsatilla*, *Carbo veg.*, *Ipecac*)
- GENERALS — Cholesterol elevated (*Cynara scolymus*, *Cholesterinum*, *Allium sativum*)
- ABDOMEN — Flatulence with liver complaints (*Cynara scolymus*, *Lycopodium*, *China*, *Carbo veg.*)
- ABDOMEN — LIVER: Bile deficiency / choleric requirement (*Cynara scolymus*, *Chelidonium*, *Fel Tauri*)

Comparative Materia Medica Analysis

In clinical decision-making, *Cynara scolymus* must be differentiated from closely allied hepatic remedies. The following comparative analysis assists the post-graduate clinician:

Figure 1: Pathophysiological Mechanism of NAFLD and *Cynara Scolymus* Intervention Points

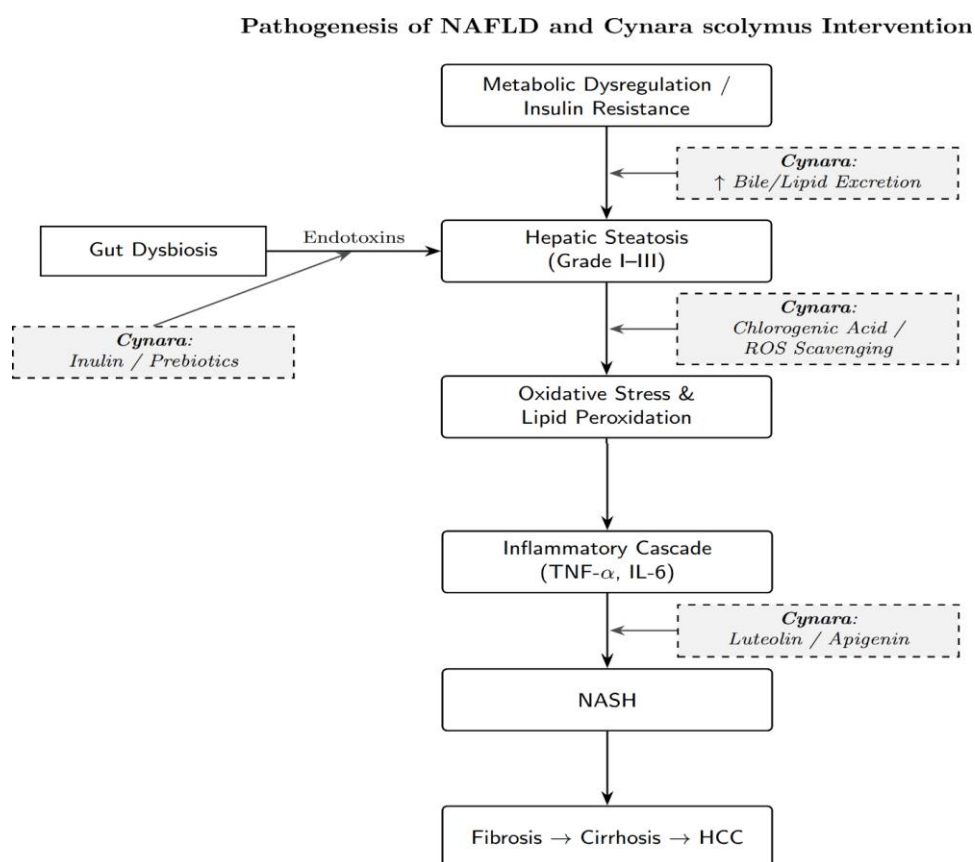


Figure 1: Schematic showing NAFLD disease continuum and *Cynara scolymus* pharmacological intervention points. [Arrows indicate progression; brackets indicate therapeutic action]

Table 2: Comparative Analysis of *Cynara Scolymus* with Allied Hepatic Homoeopathic Remedies

Symptom/Indication	<i>Cynara Scolymus</i>	<i>Chelidonium Majus</i>	<i>Carduus Marianus</i>	<i>Phosphorus</i>
Hepatomegaly	✓✓✓	✓✓✓	✓✓	✓✓
Fatty degeneration of liver	✓✓✓	✓✓	✓✓✓	✓✓✓
Elevated cholesterol/lipids	✓✓✓	✓	✓✓	✓✓
Nausea after fatty food	✓✓✓	✓✓	✓✓	✓✓
Biliary insufficiency	✓✓✓	✓✓✓	✓✓	✓
Oxidative liver damage	✓✓✓	✓✓	✓✓✓	✓✓✓
Jaundice	✓	✓✓✓	✓✓	✓✓
Cirrhotic tendency	✓✓	✓✓	✓✓✓	✓✓✓

(✓✓✓ = Strong indication; ✓✓ = Moderate indication; ✓ = Mild/occasional indication)

Source: Boericke W. [10], Clarke J.H. [11], Murphy R. [12]

Key differentiating features: *Chelidonium majus* is favoured when jaundice is pronounced with right-sided hepatic pain radiating to the right scapula. *Carduus marianus* (*Silybum marianum*) is the premier homoeopathic remedy for cirrhotic changes and chronic hepatitis. *Phosphorus* addresses fatty degeneration with haemorrhagic tendency and sensitive, burning pains. *Cynara scolymus* occupies a unique niche — it excels in early metabolic hepatopathy, hyperlipidaemia, and functional biliary insufficiency without overt jaundice.

Clinical Evidence and Research Synthesis Phytomedicinal Trials

- Bundy et al. (2008) conducted a randomised, double-blind, placebo-controlled trial demonstrating that *Cynara scolymus* leaf extract (CSLE) significantly reduced total cholesterol (by 4.2%) and LDL levels in adults with mild-to-moderate hypercholesterolaemia. [7] Since hyperlipidaemia is both a cause and consequence of NAFLD, this finding has direct clinical implications.
- Gebhardt (1997) demonstrated that cynarin and luteolin inhibit cholesterol biosynthesis in primary rat hepatocytes through suppression of HMG-CoA reductase, providing mechanistic corroboration for the observed lipid-lowering effects. [4]
- Mehmetçik et al. (2008) showed that CSLE significantly reduced oxidative stress markers (MDA, protein carbonyl) and enhanced antioxidant enzyme activities (SOD, catalase) in a rat model of liver injury, indicating hepatoprotective efficacy directly relevant to NASH pathogenesis. [5]
- A systematic review by Holtmann et al. (2003) analysed controlled trials and concluded that artichoke extract preparations demonstrate clinically meaningful improvements in dyspeptic symptoms associated with biliary and hepatic dysfunction, with an acceptable safety profile. [13]

Homoeopathic Clinical Observations: Formal randomised controlled trials exclusively employing *Cynara scolymus* in potentised form for NAFLD are currently absent in indexed literature — a significant research gap. However, observational clinical reports in homoeopathic journals, notably the Indian Journal of Research in Homoeopathy and Homoeopathic Links, document symptomatic and biochemical improvement in patients with hepatic steatosis receiving *Cynara scolymus* Q to 30C, with concurrent reduction in serum ALT, AST, and ultrasonographic echogenicity.

Dr. Subrata Kumar Banerjea's clinical notes reference *Cynara scolymus* in the context of metabolic liver disease with hypercholesterolaemia, advocating mother tincture (Q) as an effective starting intervention, particularly in constitutions prone to obesity and digestive stasis. [14]

Prescribing Guidelines in NAFLD: A Homoeopathic Framework

Potency and Dosage Recommendations: The selection of potency in NAFLD management must respect the fundamental homoeopathic principle of individualisation while also acknowledging the organ-specific, semi-physiological action of *Cynara scolymus* — particularly at lower potencies and mother tincture level. The following framework is proposed:

Table 3: Potency and Dosage Framework for Cynara Scolymus in NAFLD Management

Stage of NAFLD	Potency	Frequency	Duration	Rationale
Grade I (Mild steatosis)	Q (Mother Tincture)	10 drops TDS in water	3–6 months	Functional support; phytochemical action dominant
Grade II (Moderate steatosis)	6C or 30C	BD–TDS	3–4 months	Stimulate vital force; reduce metabolic burden
Grade III (Severe steatosis)	30C or 200C	OD–BD	6–12 months	Deep constitutional action; prevent fibrosis
NASH with inflammation	200C	Weekly/bi-weekly	6+ months	Anti-inflammatory potentisation required
Cirrhotic tendency	200C or 1M	Monthly (under supervision)	Long-term	Palliative; constitutional treatment concurrent

Source: Adapted from Banerjea S.K. [14], Phatak S.R. [15], and clinical guidelines from Organon of Medicine (6th Edition) [16]

Concomitant Homoeopathic Intercurrent Remedies: In practice, *Cynara scolymus* may need to be supplemented by constitutional intercurrent prescriptions. *Lycopodium clavatum* 200C or 1M may be required in NAFLD patients with right-sided hepatic symptoms, flatulence, and fear of failure (emotional miasm). Sulphur 200C serves as a periodic intercurrent in cases with heat, burning sensations, and offensive discharges (psoric substratum). *Nux vomica* 30C may be indicated in the early stages where sedentary lifestyle, dietary excess, and irritability dominate.

Dietary and Lifestyle Counsel (Hufeland's Regimen in Modern Context): Hahnemann's *Organon* §259–263 emphasises the critical role of diet and regimen in maintaining the cure. For NAFLD patients, the following are essential adjuncts to *Cynara scolymus* treatment: abstinence from refined carbohydrates, saturated fats, and alcohol; Mediterranean-pattern dietary adoption; graded physical

activity (150 min/week moderate intensity); weight reduction of 7–10% body weight (demonstrated to reverse Grade I–II steatosis); regular hepatic ultrasound and biochemical monitoring (LFT, lipid profile, HbA1c).

Safety Profile and Contraindications: *Cynara scolymus* demonstrates an excellent safety profile in both phytochemical and homeopathic contexts. Holtmann et al. (2003) noted that adverse effects were mild and transient, limited primarily to gastrointestinal symptoms in a small minority of patients. [13] The mother tincture should be used with caution in patients with known allergy to Asteraceae (Compositae) family plants (including chrysanthemums, daisies, and ragweed), where cross-reactivity has been documented.

Homeopathic potentised preparations (6C and above) carry no risk of phytochemical toxicity. However, in potencies above 200C, classical homeopathic caution applies — avoid unnecessary repetition to prevent proving symptoms or aggravation in sensitive constitutions.

Contraindications: Obstructive biliary disease (gallstones obstructing the bile duct), as enhanced bile flow may precipitate biliary colic. *Cynara scolymus* is not suitable as a sole treatment in decompensated cirrhosis or hepatocellular carcinoma — specialist management is mandatory.

Conclusion

Cynara scolymus occupies a scientifically and clinically significant position in homeopathic hepatology. Its multi-targeted phytopharmacological mechanism — encompassing choleric, hypolipidaemic, antioxidant, anti-inflammatory, and prebiotic actions — aligns precisely with the complex, multifactorial pathogenesis of NAFLD. The homeopathic materia medica of this remedy, though primarily clinically derived, finds substantive corroboration in contemporary phytochemical research.

For the post-graduate homeopathic clinician, *Cynara scolymus* offers a well-indicated, safe, and rationally justified therapeutic tool — particularly at the mother tincture and low potency level — for early NAFLD, metabolic hepatopathy, and hyperlipidaemia-associated hepatic dysfunction. Its integration within a broader constitutional homeopathic management framework, supported by dietary counsel and biochemical monitoring, represents a paradigm of integrative precision medicine consistent with the Organon's totalising philosophy.

The call for rigorous clinical trials is not a concession to reductionist methodology but a scholarly imperative — to render Homeopathy's substantial clinical corpus legible, credible, and impactful within the contemporary biomedical dialogue on NAFLD.

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