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IMPACT OF VIRUDDHA AHARA ON HEPATIC PATHOPHYSIOLOGY: EXPLORING AYURVEDIC INSIGHTS AND MODERN CO-RELATION

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Abstract

Background: The concept of *Viruddha Ahara* (incompatible diet) is well-documented in Ayurveda and is believed to have a significant impact on systemic health, including hepatic function. Ayurveda emphasizes that the persistent consumption of *Viruddha Ahara* leads to metabolic disturbances and aggravates *Dosha*, resulting in various pathophysiological conditions affecting the liver. This study explores the Ayurvedic perspective on *Viruddha Ahara* and its implications on hepatic pathophysiology while correlating these insights with modern medical understanding. **Aim & Objective:** To analyze the impact of *Viruddha Ahara* on hepatic pathophysiology through Ayurvedic principles and modern scientific correlations **Methods:** A comprehensive review of classical Ayurvedic texts and modern literature was conducted to understand the pathophysiological changes in the liver due to *Viruddha Ahara*. Ayurvedic principles related to *Agni*, *Ama* formation, and *Dosha* imbalance were critically

analyzed. Additionally, modern scientific studies on dietary incompatibilities, hepatotoxicity, and liver disorders were reviewed to establish a correlation. **Results:** Ayurvedic texts suggest that *Viruddha Ahara* disrupts *Agni* (digestive fire), leading to *Ama* (toxins) accumulation, which impairs liver function. Specific dietary incompatibilities, such as milk with fish, honey with ghee in equal proportions, and fruit consumption with dairy, are believed to cause metabolic imbalances. Modern research supports these concepts by demonstrating the effects of dietary incompatibilities on gut microbiota, metabolic endotoxemia, oxidative stress, and inflammatory responses, contributing to liver dysfunctions such as non-alcoholic fatty liver disease (NAFLD) and hepatocellular injury. **Conclusion:** The findings indicate a strong association between *Viruddha Ahara* and hepatic pathophysiology from both Ayurvedic and modern perspectives. Understanding these dietary incompatibilities can aid in preventive and therapeutic approaches for liver disorders. Future research is required to validate Ayurvedic dietary principles through clinical and experimental studies for integrative hepatology.

Keywords: *Viruddha Ahara*, *Hepatic Pathophysiology*, *Ayurveda*, *Dosha Imbalance*, *Ama Formation*, *Liver Dysfunction*

Introduction

The liver, a vital organ responsible for metabolism, detoxification, and digestion, plays a crucial role in maintaining homeostasis.[1] Any disruption in hepatic function can lead to metabolic disorders, inflammatory conditions, and chronic diseases. Dietary habits significantly influence liver health, and modern research highlights the role of diet-induced hepatotoxicity in conditions such as non-alcoholic fatty liver disease (NAFLD), hepatic steatosis, and metabolic liver dysfunction.[2] Ayurveda, the ancient Indian system of medicine, emphasizes the concept of *Ahara* (diet) as a primary factor in health and disease, categorizing certain food combinations as *Viruddha Ahara* (incompatible diet) that may lead to systemic imbalances and hepatic disorders.[3]

Ayurvedic classics describe *Viruddha Ahara* as the consumption of food combinations that are contradictory in their properties (*Guna*), processing (*Sanskara*), potency (*Veerya*), metabolic transformation (*Vipaka*), and digestion (*Agni*).[4] Examples include milk with fish, honey with ghee in equal proportions, and consuming cold beverages immediately after a hot meal. Prolonged intake of *Viruddha Ahara* is believed to cause *Ama* (toxic metabolites)

accumulation, leading to *Dosha* imbalances, impaired digestion, and metabolic disturbances, ultimately affecting liver function.[5] Ayurveda explains that such dietary incompatibilities impair *Agni*, disturbing the normal physiology of the gastrointestinal system and leading to hepatobiliary dysfunctions.[6]

From a modern medical perspective, incompatible dietary habits can result in gut microbiota alterations, increased intestinal permeability, metabolic endotoxemia, and oxidative stress, all of which contribute to hepatic inflammation and dysfunction. Studies have shown that dietary components, when consumed in improper combinations, can induce hepatotoxic effects by promoting lipid peroxidation, mitochondrial dysfunction, and inflammatory cytokine release. Moreover, emerging research on dietary-induced liver toxicity supports Ayurvedic principles by correlating specific food interactions with metabolic disorders and liver diseases.[7]

Epidemiology of Liver Diseases:

Global Burden of Liver Diseases

Liver diseases are a major global health concern, contributing to approximately two million deaths annually, accounting for 4% of all deaths worldwide. The leading causes of liver-related mortality include cirrhosis, hepatocellular carcinoma (HCC), and acute liver failure. Among these, cirrhosis and HCC are responsible for the majority of fatalities, while acute hepatitis contributes to a smaller fraction of deaths.[8]

Non-alcoholic fatty liver disease (NAFLD) has become the most prevalent liver disorder worldwide, affecting an estimated 25–30% of the global population. This metabolic liver disease is closely linked to obesity, diabetes, and metabolic syndrome, making it a significant non-communicable disease (NCD) burden. Alcohol-related liver disease (ALD) is another major concern, with 4.5% of global liver disease-related deaths attributed to alcohol consumption. Additionally, viral hepatitis (Hepatitis B and C) remains a persistent public health challenge, despite the availability of vaccines and antiviral treatments.9

Liver Disease Epidemiology in India (2024)

India bears a disproportionately high burden of liver diseases, contributing to 18.3% of the two million global liver disease-related deaths. A substantial number of cases result from viral hepatitis, alcohol-related liver disease (ALD), and non-alcoholic fatty liver disease **(NAFLD).**

- **NAFLD Prevalence in India:** The pooled prevalence of NAFLD in Indian adults is 38.6%, with a significantly higher occurrence among individuals with obesity and diabetes (52.8%). This reflects a worrying trend of increasing metabolic disorders contributing to liver dysfunction.[10]
- **Alcoholic Liver Disease (ALD):** India has witnessed a 67.7% rise in hospital admissions due to alcoholic liver disease over the last decade, reflecting a sharp increase in alcohol-related liver disorders.[11]
- **Viral Hepatitis:** Despite public health efforts, hepatitis B and C infections continue to be leading causes of chronic liver disease and hepatocellular carcinoma in India. The lack of widespread screening and vaccination coverage remains a significant challenge.[12]

Aim and Objectives

Aim

To analyze the impact of *Viruddha Ahara* on hepatic pathophysiology through Ayurvedic insights and modern scientific correlations.

Objectives

1. Review Ayurvedic concepts of *Viruddha Ahara* and its effects on *Agni*, *Ama*, and *Dosha*.
2. Examine modern research on dietary incompatibilities and liver dysfunction.
3. Correlate Ayurvedic principles with modern hepatological perspectives.
4. Identify mechanisms linking *Viruddha Ahara* to liver disorders.
5. Emphasize the need for further clinical and experimental validation.

Materials and Methods

Study Design

This is a qualitative and analytical study based on a comprehensive review of Ayurvedic literature and modern scientific evidence to explore the impact of *Viruddha Ahara* on hepatic pathophysiology.

Data Collection

1. **Ayurvedic Literature Review:**
    - Classical texts such as *Charaka Samhita*, *Sushruta Samhita*, and *Ashtanga Hridaya* were analyzed for descriptions of *Viruddha Ahara*, its effects on *Agni*, *Ama*

formation, and hepatic dysfunction. Commentaries and interpretations from Ayurvedic scholars were reviewed.

2. **Modern Scientific Literature Review:**

- Data from PubMed, Scopus, Google Scholar, and indexed medical journals were collected on the impact of incompatible diets on liver health. Research on metabolic endotoxemia, oxidative stress, gut-liver axis disruption, and hepatotoxicity was analyzed.

VIRUDDHA AHARA

The term *Viruddha Ahara* refers to incompatible food combinations that may cause physiological imbalances and pathological changes in the body. Ayurveda classifies certain foods as incompatible based on their properties (*Guna*), potency (*Veerya*), post-digestive effect (*Vipaka*), and metabolic transformation (*Agni*). When foods with opposing qualities are consumed together or prepared improperly, they lead to the accumulation of *Ama* (toxins) and the disturbance of *Dosha*, ultimately affecting various systems, including the liver.[12]

Types of *Viruddha Ahara*

Classical Ayurvedic texts, such as *Charaka Samhita* and *Sushruta Samhita*, describe various types of incompatible food combinations that adversely impact digestion and metabolism. These include:

1. **Desha Viruddha (Geographical Incompatibility)** – Consumption of foods unsuitable for a specific region. For example, heavy and cold foods in a cold climate aggravate *Kapha* and slow down metabolism.[13]
2. **Kala Viruddha (Seasonal Incompatibility)** – Foods that contradict seasonal dietary principles. Example: Consuming cold foods (*Sheetala Ahara*) during winter may disrupt *Agni* and weaken digestion.[14]
3. **Agni Viruddha (Digestive Power Incompatibility)** – Eating heavy or difficult-to-digest foods when *Agni* is weak can result in indigestion and metabolic stress.[15]
4. **Matra Viruddha (Quantity Incompatibility)** – Overconsumption or disproportionate mixing of foods, such as excessive protein or fat intake, may lead to metabolic overload.[16]
5. **Satmya Viruddha (Habitual Incompatibility)** – Consuming a diet that is unnatural or unaccustomed to an individual's habitual digestion can lead to metabolic stress.[17]

6. **Samyoga Viruddha (Combination Incompatibility)** – Certain food combinations produce harmful effects,[18] such as:
    - **Milk with fish** – Contradictory *Veerya* (cold vs. hot) disturbs digestion and metabolic balance.
    - **Honey and ghee in equal proportions** – Produces toxic metabolites that disrupt cellular function.
    - **Fruits with dairy** – Leads to fermentation and toxin accumulation in the gut.
7. **Samskara Viruddha (Processing Incompatibility)** – Processing methods that alter food's nature, such as reheating stale foods, may degrade nutrient quality and produce toxins.[19]
8. **Krama Viruddha (Order of Eating Incompatibility)** – Improper sequencing of food intake, such as consuming cold beverages immediately after a hot meal, may disturb digestion.[20]
9. **Veerya Viruddha (Potency Incompatibility)** – Combining foods with opposite energy (*Veerya*), such as hot and cold potency foods together, leading to imbalance in metabolic processes.[21]

Effect of *Viruddha Ahara* on Liver Health

Ayurveda describes the liver as the site of *Pitta Dosha*, responsible for digestion, metabolism, and detoxification.[22] The persistent consumption of *Viruddha Ahara* leads to:

- **Weakening of *Agni***
    - *Viruddha Ahara* disrupts digestive enzymes and *Jatharagni*, impairing the breakdown and absorption of nutrients.
    - This weakens liver metabolism and increases the burden of toxic byproducts.[23]
- **Formation of *Ama* (Toxic Metabolites)**
    - Improper digestion produces **semi-digested metabolites (*Ama*)**, which accumulate in the liver and impair its detoxification function.
    - *Ama* contributes to inflammatory and metabolic liver disorders.[24]
- ***Dosha* Imbalance**
    - ***Pitta Dushti*:** Excessive consumption of incompatible food increases *Pitta Dosha*, leading to hepatobiliary disorders.

- ***Kapha Dushti*:** Heavy and unwholesome food combinations aggravate *Kapha*, resulting in fatty liver conditions.
- ***Vata Dushti*:** Irregular or improper dietary patterns disturb *Vata*, affecting liver circulation and bile secretion.[25]

- **Obstruction in *Srotas* (Metabolic Channels)**
  - The liver is part of *Rakta Vaha Srotas* (blood circulation system) and *Anna Vaha Srotas* (digestive metabolism). *Viruddha Ahara* leads to blockage in these microcirculatory pathways, causing liver congestion and impaired detoxification.[26]

Examples of *Viruddha Ahara* and Their Modern Correlation

Several dietary incompatibilities mentioned in Ayurveda have direct correlations with modern nutritional science and hepatology:

Ayurvedic Concept	Modern Correlation
Milk with fish	Protein and fat digestion require different enzymatic pathways, leading to gut disturbances and metabolic stress.
Honey and ghee in equal proportion	Produces free radicals, increasing oxidative stress and hepatotoxicity.
Cold water after hot meal	Sudden temperature shifts impair enzyme activity and slow digestion, burdening liver metabolism.
Fermented foods with milk	Fermentation produces endotoxins that increase gut permeability and liver inflammation.
Raw foods with cooked foods	Digestive enzymes differ, leading to incomplete metabolism and toxic byproducts.

AYURVEDIC MANAGEMENT AND PREVENTIVE APPROACH

To prevent the harmful effects of *Viruddha Ahara*, Ayurveda prescribes **dietary guidelines and detoxification therapies** such as:

- **Avoidance of incompatible food combinations** – Following classical dietary principles to prevent metabolic imbalance.
- **Strengthening *Agni*** – Using digestive stimulants such as *Trikatu* (ginger, black pepper, long pepper) to enhance metabolic efficiency.

- **Regular detoxification (*Panchakarma*)** – Procedures like *Virechana* (therapeutic purgation) help eliminate accumulated toxins from the liver.
- **Incorporating hepatoprotective herbs** – Ayurvedic herbs such as *Bhumi Amla* (*Phyllanthus niruri*), *Kutki* (*Picrorhiza kurroa*), and *Guduchi* (*Tinospora cordifolia*) support liver detoxification and function.
- **Balanced dietary habits** – Eating at appropriate times, maintaining proper food sequencing, and consuming freshly prepared meals enhance liver health.

Hepatic Pathophysiology

The liver is a crucial organ involved in metabolism, detoxification, and biochemical homeostasis. Hepatic pathophysiology refers to the functional and structural changes in the liver due to various dietary, metabolic, inflammatory, infectious, and toxic insults. Persistent consumption of *Viruddha Ahara* (incompatible food) plays a significant role in disrupting hepatic physiology, leading to liver dysfunction.[27]

Viruddha Ahara (Incompatible Diet)

⇩

Disruption of Agni (Digestive Fire) → Ama (Toxin) Formation

⇩

Gut Microbiota Alteration & Increased Intestinal Permeability

⇩

Endotoxin Release (LPS) → Inflammation & Oxidative Stress

⇩

Kupffer Cell Activation → Inflammatory Cytokine Release (TNF-α, IL-6)

⇩

Hepatocellular Injury & Free Radical Damage

⇩

Liver Dysfunction & Hepatic Pathophysiology Develops

Major Hepatic Disorders

- Non-Alcoholic Fatty Liver Disease (NAFLD)
- Insulin Resistance & Metabolic Syndrome
- Liver Cirrhosis & Hepatocellular Carcinoma
- Gallbladder Dysfunction & Cholelithiasis
- Impaired Detoxification & Drug Toxicity

RESULTS AND FINDINGS

- **Correlation Between Ayurveda and Modern Hepatology:** *Viruddha Ahara* disrupts *Agni*, leading to *Ama* accumulation and *Dosha* imbalance, aligning with modern findings on gut dysbiosis, oxidative stress, and liver dysfunction.
- **Gut-Liver Axis Dysfunction:** Incompatible food combinations alter intestinal permeability, leading to lipopolysaccharide (LPS) leakage and Kupffer cell activation. This results in inflammatory cytokine release (TNF-α, IL-6, IL-1β), contributing to hepatocyte damage, fatty liver, and fibrosis.
- **Oxidative Stress and Mitochondrial Dysfunction:** Consumption of *Viruddha Ahara* generates free radicals, causing lipid peroxidation, hepatocyte apoptosis, and impaired bile secretion. Leads to liver conditions such as NAFLD, hepatotoxicity, and gallbladder dysfunction.
- **Ayurvedic Detoxification and Hepatoprotective Interventions:** Therapies like *Panchakarma* (Virechana, Basti) help eliminate accumulated *Ama* and restore metabolic balance. Herbs such as Bhumi Amla, Kutki, and Guduchi show hepatoprotective effects, reducing oxidative stress and improving liver function.
- **Need for Scientific Validation:** Findings support the relevance of Ayurvedic dietary principles in liver disease prevention and management. Further clinical and biochemical studies are required to establish evidence-based dietary guidelines, integrating Ayurveda with modern hepatology for holistic liver health management.

DISCUSSION

The concept of *Viruddha Ahara* in Ayurveda highlights the significance of dietary compatibility in maintaining optimal health, particularly liver function. According to Ayurvedic texts, the liver is primarily governed by *Pitta Dosha*, and incompatible food

combinations disrupt *Agni*, leading to *Ama* accumulation and metabolic imbalances.[28] Modern hepatology supports this principle, demonstrating that improper dietary habits contribute to oxidative stress, inflammation, and metabolic endotoxemia, which play a crucial role in the pathogenesis of liver disorders. This correlation between Ayurveda and modern science underscores the importance of dietary regulation in preventing hepatic diseases.[29]

One of the key mechanisms by which *Viruddha Ahara* affects liver health is through gut microbiota alteration and intestinal permeability. Modern research shows that dietary incompatibilities can lead to dysbiosis, increasing the absorption of endotoxins like lipopolysaccharides (LPS).[30] These endotoxins enter the portal circulation, triggering an inflammatory response mediated by Kupffer cells, leading to hepatocellular injury. This aligns with Ayurvedic descriptions of *Ama* formation and *Srotodushti* (blockage in metabolic pathways), which disrupt liver metabolism and detoxification. The growing recognition of the gut-liver axis in medical science further validates the Ayurvedic perspective on digestive health influencing hepatic function.[31]

Furthermore, oxidative stress and mitochondrial dysfunction induced by *Viruddha Ahara* play a critical role in liver pathophysiology. Free radicals generated due to improper metabolism of incompatible foods lead to lipid peroxidation and hepatocyte damage, contributing to conditions like non-alcoholic fatty liver disease (NAFLD) and cirrhosis. Ayurveda describes a similar process where the accumulation of *Ama* in the liver results in *Pitta* aggravation, which corresponds to inflammatory liver disorders.[32] Scientific evidence suggests that specific Ayurvedic interventions, including *Panchakarma* detoxification and hepatoprotective herbs like *Bhumi Amla* (*Phyllanthus niruri*) and *Kutki* (*Picrorhiza kurroa*), can mitigate liver damage by reducing oxidative stress and enhancing detoxification pathways.[33]

The findings of this study highlight the need for an integrative approach to liver health that incorporates both Ayurvedic dietary principles and modern hepatology. While modern medicine focuses on biochemical mechanisms and pharmacological interventions, Ayurveda emphasizes preventive dietary measures and lifestyle modifications to maintain hepatic balance.[34]

CONCLUSION

The concept of *Viruddha Ahara* in Ayurveda provides valuable insights into the role of dietary incompatibilities in hepatic pathophysiology. Ayurveda describes how improper food combinations disrupt *Agni*, lead to *Ama* accumulation, and cause *Dosha* imbalances, ultimately impairing liver function. Modern scientific research supports these principles, demonstrating that incompatible dietary habits contribute to gut dysbiosis, oxidative stress, and inflammatory responses, which are major factors in the development of liver diseases such as NAFLD, cirrhosis, and hepatotoxicity. The gut-liver axis plays a crucial role in mediating the effects of *Viruddha Ahara* on hepatic health. Increased intestinal permeability, metabolic endotoxemia, and immune activation due to dietary imbalances significantly impact liver function. This aligns with Ayurvedic descriptions of *Srotodushti* and *Ama* accumulation, further reinforcing the importance of dietary discipline. Ayurvedic interventions, including *Panchakarma*, hepatoprotective herbs, and dietary modifications, offer promising approaches for liver detoxification and disease prevention. Understanding the impact of *Viruddha Ahara* on liver health highlights the need for a preventive approach to dietary habits. While modern medicine provides pharmacological treatments for liver diseases, Ayurveda emphasizes dietary regulations, detoxification therapies, and herbal interventions to maintain hepatic balance. Integrating Ayurvedic wisdom with modern hepatology can help develop holistic, evidence-based strategies for liver health management.

CONFLICT OF INTEREST – NIL

SOURCE OF SUPPORT -NONE

REFERENCES

1. Friedman SL. Hepatic fibrosis: Emerging therapies. Dig Dis. 2015;33(4):504-7.
2. Chalasani N, Younossi Z, Lavine JE, Diehl AM, Brunt EM, Cusi K, et al. The diagnosis and management of non-alcoholic fatty liver disease: Practice guideline by the AASLD, AGA, and ACG. Hepatology. 2012;55(6):2005-23.
3. Charaka S. Charaka Samhita, Sutrasthana. 1st ed. Varanasi: Chaukhambha Sanskrit Sansthan; 2014. p. 321-5.
4. Sushruta S. Sushruta Samhita, Sutrasthana. 2nd ed. Varanasi: Chaukhambha Orientalia; 2012. p. 102-8.

5. Sharma RK, Dash B. Agnivesha's Caraka Samhita: Text with English Translation & Critical Exposition Based on Cakrapani Datta's Ayurveda Dipika. Varanasi: Chowkhamba Sanskrit Series Office; 2012.
6. Acharya JT. Ashtanga Hridaya of Vagbhata. Varanasi: Chaukhamba Surbharati Prakashan; 2016. p. 89-94.
7. European Association for the Study of the Liver (EASL). EASL clinical practice guidelines: Management of alcoholic liver disease. J Hepatol. 2018;69(1):154-81.
8. Asrani SK, Devarbhavi H, Eaton J, Kamath PS. Burden of liver diseases in the world. J Hepatol. 2019;70(1):151-71.
9. Younossi ZM, Koenig AB, Abdelatif D, Fazel Y, Henry L, Wymer M. Global epidemiology of NAFLD—Meta-analytic assessment of prevalence, incidence, and outcomes. Hepatology. 2016;64(1):73-84.
10. Duseja A, Chalasani N. Epidemiology and risk factors of NAFLD and NASH. Hepatol Int. 2013;7(2):755-70.
11. Mathurin P, Bataller R. Trends in the management and burden of alcoholic liver disease. J Hepatol. 2015;62(1):S38-46.
12. WHO. Global hepatitis report 2017. Geneva: World Health Organization; 2017.
13. Sharma PV. Classical concepts of Ayurvedic dietetics. Int J Ayurveda Res. 2011;2(4):195-201.
14. Joshi K, Salunkhe VR, Patil S. Seasonal variations in Agni and its relation to dietary modifications. AYU. 2012;33(4):569-74.
15. Mishra S. Principles of Ayurvedic dietetics. Int J Res Ayurveda Pharm. 2017;8(2):87-92.
16. Gupta A, Patel P, Shah N. Viruddha Ahara: A concept of dietary incompatibility in Ayurveda. J Ayurveda Integr Med. 2019;10(3):173-8.
17. Pandey R, Rastogi S. Ayurvedic concept of food incompatibility and its significance in metabolic disorders. Int J Ayurveda Res. 2015;6(2):112-8.
18. Tiwari P. Ayurvedic dietetics: A review. J Res Educ Indian Med. 2020;26(1):12-8.
19. Chaudhari S, Desai H. Impact of dietary habits on liver function. J Clin Hepatol. 2019;8(4):231-9.

20. Rao K. Ayurvedic perspective on diet and lifestyle modifications in liver diseases. Int J Ayurveda Med. 2018;9(3):289-94.
21. Patel P. Food incompatibility and its effects on health. J Ethnopharmacol. 2017;14(2):67-74.
22. Gupta A, Mishra A. Role of Pitta Dosha in hepatobiliary disorders. AYU. 2016;37(1):34-8.
23. Saxena S. Ayurvedic understanding of liver diseases. Int J Ayurveda Res. 2015;6(4):214-9.
24. Kaushik S, Nair G. Ayurvedic approach to liver detoxification. J Ayurveda Integr Med. 2020;11(2):102-9.
25. Singh R, Sharma A. Concept of Ama in Ayurveda and its relation to metabolic diseases. J Ayurveda Integr Med. 2018;9(4):219-25.
26. Chattopadhyay S. Role of Viruddha Ahara in metabolic diseases. Int J Ayurveda Res. 2021;12(1):48-55.
27. Patil N. Impact of dietary patterns on oxidative stress and hepatic pathophysiology. J Clin Hepatol. 2020;10(3):145-52.
28. Sharma VK. Dietary incompatibilities and their role in metabolic disorders. J Ayurveda Integr Med. 2019;10(1):31-6.
29. Singh G, Kapoor R. Liver detoxification through Ayurvedic therapies: A review. Int J Ayurveda Med. 2018;9(1):77-83.
30. Yadav D, Kaur N. Gut-liver axis: Implications in hepatology and Ayurveda. J Hepatol. 2019;71(2):271-82.
31. Srivastava R. Concept of Viruddha Ahara and its modern interpretation. J Ayurveda Res. 2020;11(2):99-107.
32. Kumar A, Sharma P. Oxidative stress and hepatotoxicity: Role of incompatible diet. J Clin Nutr Hepatol. 2021;5(3):210-8.
33. Maheshwari M. Panchakarma therapies in hepatic detoxification: A review. Int J Res Ayurveda Pharm. 2019;10(2):140-6.
34. Tripathi M. Ayurvedic understanding of liver health and dietary habits. J Ayurveda Integr Med. 2020;11(1):20-7.