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**“NON-ALCOHOLIC FATTY LIVER DISEASE AN AYURVEDIC PERSPECTIVE:
A REVIEW”****Dr. Mrunal M. Tembhurne¹, Dr Archana S. Dachewar²**

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ABSTRACT:

Purpose: Non-alcoholic fatty liver disease (NAFLD) is a growing global health concern, with prevalence rates ranging between 6% and 35% worldwide. Recent research conducted in various regions of India reports that the prevalence of NAFLD ranges between 9% and 35%. Ancient scholars such as Charaka, Susruta, and Vagbhata have documented a condition called Yakrtaldyudara roga, which exhibits symptoms that resemble those of non-alcoholic fatty liver disease (NAFLD). Although non-alcoholic fatty liver disease is not explicitly described in Ayurvedic classics, this study seeks to examine the interpretation and management of non-alcoholic fatty liver disease through the principles of Ayurveda.

Methods: A comprehensive review of Ayurvedic texts, journals, and other research articles was conducted to establish the Ayurvedic diagnosis (Nidan Panchak) and treatment (Chikitsa) of non-alcoholic fatty liver disease.

KEY WORDS:- Agnimandya, Dhatwagnimandya, Non-alcoholic fatty liver disease, Yakrtaldyudara

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INTRODUCTION

The liver is the largest internal organ and heaviest gland in the human body, weighing approximately 1.4 kg in adults. It constitutes about 2% of an adult's total body weight.^[1] Liver plays important role in digestion and metabolism of ingested food. Non-alcoholic fatty liver disease (NAFLD) refers to a range of chronic liver conditions marked by excessive fat accumulation in the liver (steatosis) without significant alcohol intake. It may present with or without liver inflammation and fibrosis.^[2] Non-alcoholic fatty liver disease is more prevalent in individuals who are overweight or obese, as well as those with diabetes, elevated cholesterol levels, or high triglycerides. Additionally, poor dietary habits and rapid weight loss can contribute to the development of this condition.^[3] A high-calorie diet, commonly combined with sedentary behavior, A high fructose consumption, insulin resistance (IR) and metabolic syndrome (MetS) components, including abdominal obesity and type 2 diabetes (T2DM), altered whole-body energetic homeostasis caused by caloric intake exceeding caloric expenditure, resulting in extra-energy spillover from visceral adipose tissue into ectopic fat depots such as the liver, skeletal muscles, and pancreas.^[4] Understanding Non-alcoholic fatty liver disease through the lens of Ayurvedic principles and establishing an effective management plan within the Ayurvedic system of medicine is essential. A review of clinical presentations from classical Ayurvedic texts reveals that non-alcoholic fatty liver disease involves abnormalities in Jatharagni, Dhatwagni, and Doshas, particularly Kapha and Vata, along with the involvement of multiple Srotas. Therefore, treatment focuses on Agni Deepana, Aama Pachana, Kapha-Vata Shamana, and Srotoshodhana.

MATERIAL AND METHOD :

The purpose of this review is to examine hypothyroidism from an Ayurvedic perspective and to develop an Ayurvedic-based treatment plan. A thorough literature search was done for the study, and pertinent data was critically reviewed. Modern pathology textbooks and a variety of online medical research databases, including Google Scholar, PubMed, Ayucare, and other national research sites, were used to analyse the clinical presentation of hypothyroidism. Additionally, a critical evaluation of several Ayurvedic texts was conducted in an attempt to comprehend the full pathophysiology of hypothyroidism in terms of Dosha, Dushya, Agni, and Srotas.

DISCUSSION:

In Ayurveda, the focus is not on the exact nomenclature of diseases but on diagnosing the constitutional status of the disease, as outlined in Charaka Samhita. According to Ayurvedic principles, the following conditions are correlated with Non-alcoholic fatty liver disease based on its clinical presentation.

Clinical presentation of Non-alcoholic fatty liver disease

In the early stages, patients with fatty liver disease may present with symptoms such as abdominal heaviness and distension, altered appetite (either increased or decreased), constipation or diarrhoea, lethargy, and frequent burping. These symptoms bear a resemblance to Ajirna in Ayurveda.^[5] In obese individuals, the condition exhibits similarities to Sthaulya.^[6] As fatty liver progresses, it may develop symptoms akin to Amlapitta (comparable to Gastroesophageal Reflux Disease), including sour eructation, burning sensations in the chest and abdomen, abdominal distension, tastelessness, and loose stools.^[6] As the disease advances to more severe stages, systemic signs indicating significant liver damage may emerge, such as Pandu (anemia, fatigue, altered consciousness), Kamala (jaundice characterized by yellowing of the eyes, skin, and urine), and Raktapitta (hematemesis).^[7] In its advanced stages, the condition can progress to liver fibrosis and cirrhosis, eventually manifesting as Udara (ascites), one of the eight major ailments (Ashtamahagada) in Ayurveda, with Yakridalyudara being a prominent presentation.^[8]

Pathogenesis (Samprapti) of Non-alcoholic fatty liver disease as per Ayurveda

According to Samprapti, specific factors such as Beejadushti, improper Ahara (diet), and Vihara (lifestyle) contribute to Kaphavidhi and Agnimandya, playing a central role in the formation of Ama. This Ama Rasa is transported throughout the body via the Srotas. At the level of Medo Dhatu, the formation of Ama is influenced by Beejadushti and the natural tendency of Kapha to affect Medo Dhatu due to their intrinsic similarity (Atyantha Sadrusatva). This process leads to Medo-Dhatwagni Mandya, which disrupts the proper formation of Saramsa and Kittabhaga within the Malabhavas. The accumulation and spread (Prasara) of Malabhavas, Ama, and Dushta Kapha, along with their localization (Sthana Samsraya) in the liver (Yakrit), result in Pitta Karma Hani. At this stage, steatosis in the liver can be correlated with the Pittasthana-gata Kaphavastha.^[9]

Medo Vikriti and NAFLD

Non-alcoholic fatty liver disease (NAFLD) represents a specific Medo Dhatu Vikriti, characterized by increased Kapha and impaired Agni. The vitiation of Medo Dhatu occurs due to imbalanced Ahara and Vihara or due to the vitiation of the associated Dosha (Kapha). In advanced stages, this imbalance causes Srotodushti, resulting in Vimargagamana—the movement of Medas and Kapha into Pittasthana instead of their normal location (Kaphasthana). Upon analysis, it can be inferred that conditions like Prameha and Sthaulya, which involve increased Sleshma and Medo Dhatu, may represent later stages of Kapha-Medo Dushti.^[10]

Samprapati factors

1. Dosha:

Vata- Primarily Vyana, Samana, Udana

Pitta- Primarily Pachak, Sadhaka, Ranjaka

- Kapha- Primarily Kledaka, Sleshaka, Tarpaka
2. Dhatu: Rasa, Rakta, Meda
 3. Srotasa: Anna, Udaka, Rasa, Rakta, Meda
 4. Agni: Dhatvagni esp. Rasa, Rakta, Medovaha,
Bhutagni: Parthiva and Jala
 5. Aam: Usually Present
 6. Gunas: Vitiation Snigdha, Manda, Picchila, Guru, Ruksha and Sheeta

Principle of Management (Chikitsa)

On the basis of above discussion, the line of treatment with specific target to Agni along with Dhatwagni, Rasavaha, Raktavaha, Medovaha, Manovaha Srotas as well as Tridosha should be administered in Non-alcoholic fatty liver disease.

1. Nidan parivarjana
2. Shamana: Kapha Vata Dosha Shamana
3. Agni deepan, langhana at the beginning and repeatedly.
4. Dhatugatha Malapachana
5. Shodhana: Strotoshodhana
6. Rasayana

1. Nidan Parivarjana: This refers to avoiding the several causes of the illness. It is the initial course of treatment for any illness. The symptoms of non-alcoholic fatty liver disease are caused by Agnimandya, Rasa Dhatudushti, Amadosha formation, and Kapha-vatavridhi.^[11]

2. Shamana, Agni Deepan, Dhatugata Malapachana:

Single herbs: -

Yastimadhu (Glycyrrhiza glabra): Consisting of active principle named Glycyrrhizin which has anti-viral, anti-inflammatory, liver protective, Anti-fibrotic and anti-tumor activity.^[12]

Bhumiamalaki (Phyllanthus niruri): Consisting of active principle named phyllanthin and hypophyllanthin which has hepatoprotective, antioxidant and antiviral activity.^[13]

Kiratikta (Andrographis paniculata): Consist of active principle andrographolide which has anti viral, anti-inflammatory and hepatoprotective activity.^[14]

Haridra (Curcuma longa): Consists of curcumin which has anti-viral, anti-inflammatory and hepatoprotective activity.^[15]

Katuki (Picrorhiza kurroa): Consists of kutkoside, picroliva which has hepatoprotective and anti cancer activity.^[16]

Chiraita (Swertia chirayita): Consist of ophelic acid, amarogentin, chiratin which has anti-

viral, anti-inflammatory, hepatoprotective activity.^[17]

Guduchi (*Tinospora cordifolia*): Consist of diterpenoid lactones, glycosides, steroids, sesquiterpenoid, phenolics which has anti-fibrotic, anti-tumor, Immunomodulator.^[18]

Polyherbal drugs like: -

Triphala: It is one of the most popular herbal remedies which cleanse by promoting bowel movement. It is having Deepana, Pachana, Vatanulomana and Srotoshodhana properties. Hence it helps digestion and assimilation. It significantly reduces serum cholesterol and lipid levels.^[19]

Trikatu: Trikatu is having katu Rasa, katu vipaka and ushana virya, ushna, tikshna, laghu, ruksha guna therefore it having properties like Deepan, Pachana and Strotoshodhana along with it pacify the Kapha-Vata.^[20] It is commonly used to treat the condition of Mandagni and Aamdosha hence effective in correcting the dysfunction of Agni seen in Non-alcoholic fatty liver disease.

Panchkola: It comprises of five drugs i.e., Pippali, Pippalimula, Chavya, Chitraka and Sunthi. Panchkola is predominantly having ushna, tikshna, laghu, ruksha, katu rasa and vipaka, ushna virya. Panchkola is considered as one of the excellent drugs to treat the condition of Mandagni along with Aamdosha and Kapha-Vata disorders.^[21]

Yogas like:

Triphala Guggul, Arogyavardhini Vati are useful for treatment of Non-alcoholic fatty liver disease.

Triphala Guggul: It has Deepana, Pachana and Vatanulomana Properties. It relieves Aama and gives strength to Agni.^[22]

Arogyavardhini Vati: Arogyavardhini Vati is a traditional Ayurvedic formulation that supports overall health by harmonizing all three Doshas. It is recognized as a natural remedy for liver detoxification and managing fatty liver conditions. This formulation helps maintain healthy liver function and supports the digestive system. Arogyavardhini Vati assists in the Shoshan (absorption) of excess Snigdha Dravyas (unctuous substances) in the body and facilitates the Pachan (digestion) of Drava (liquids) and Kleda (moist or clammy substances). Additionally, it enhances Raktavardhana (blood purification) and reduces the Dravatva (fluidity) and Snigdhatva (unctuousness) in Medo Dhatu. Importantly, it has no significant toxicological effects on the brain, liver, or kidneys.^[23]

Shodhana:

Vamana- for Kapha chedana and removing Avarana according to Bala of rugna and disease condition.

Virechana- It maintains Pitta- Rakta Shuddhi. It brings Vatanulomana and Srotoshudhi.

Rasayana:

Rasayana are to be given after Samyak Shodhana in Non-alcoholic fatty liver disease.

Rasayana works at Dhatwagni level correcting Dhatwagni mandya which are seen in Non-alcoholic fatty liver disease.

CONCLUSION

Non-alcoholic fatty liver disease is not described in classical Ayurvedic texts. It is a condition primarily under the activity of Agni. Due to various hetus there is aggravating Kapha-Vata Dosha and diminished Agni at dhatu level. The Various systemic manifestations of the disease are due to Dosha-dushya involment at various dhatus along with mainly Rasa, Rakta Mansa srotas involment. During the treatment of Non-alcoholic fatty liver disease all these pathogenetic factors have to be targeted. So, drugs having Agni along with Dhatwagni Deepana, Pachana, Kapha shamana, Vata anulomana and Srotoshodhana properties seems to be effective in this condition along with Rasayana and proper lifestyle as described in Ayurvedic text.

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