AYURVEDIC MANAGEMENT OF NON-ALCOHOLIC FATTY LIVER DISEASES: A REVIEW

Jitendra Varsakiya¹, Divyarani Kathad²

¹Assistant Professor, Department of Kayachikitsa, Chaudhary Brahm Prakash Ayurved Charak Samsthan, Najaigarh, Khera Dabar, New Delhi, India
²MS Scholar, Department of Shalakya Tantra, Government Akhandanand Ayurved Collage, Ahmadabad, India

Email: jeet12989@gmail.com

ABSTRACT

Introduction: Nonalcoholic fatty liver disease (NAFLD) is the most common chronic liver disease in many parts of the world. Today’s globalization as well as urbanization affects the life style of people and resulting into the metabolic conditions on other ailments. NAFLD is one among them and is strongly associated with overweight / obesity and insulin resistance. It is very difficult to compare any particular condition mentioned in Ayurveda with NAFLD. It can be consider under the umbrella of Santarpanajanya Vyadhi (disease caused by over nourishment) having Nidana (etiology) and Samprapti (pathogenesis) similar to Sthaulya. Aims and objective: To explore the role of Ayurvedic treatment in management of NAFLD. Material and methods: All data collected and compiled about Ayurvedic management and NAFLD from classical text, modern literature and online sources. Result and discussion: Treatment of modern modalities has a lot of limitations along with side effects. On the other side Ayurvedic management can efficiently manage this condition as treated. NAFLD can be treated as Santarpanajanya Vyadhi. Treatment modalities of traditional science i.e. Langhana and Deepana, Pachana therapy could be effective in the disease management at primary level.

Keywords: Ayurveda, Non alcoholic fatty liver disease, Santarpanjanya Vyadhi, Yakrita Vikaar

INTRODUCTION

Nonalcoholic fatty liver disease (NAFLD) is the most common chronic liver disease in many parts of the world¹. NAFLD encompasses a spectrum of liver disorders characterized by macro vesicular hepatic fat accumulation alone (steatosis) or accompanied by sign of hepatocyte injury, mixed inflammatory cell infiltrate and variable hepatic fibrosis (non alcoholic steatohepatities, NASH), leading to cirrhosis². The true incidence and prevalence of NAFLD are unknown. Based on imaging studies the prevalence of NAFLD in the adult population range from 14% to 31% globally. Epidemiological studies suggest prevalence of NAFLD around 9% to 32% of general population in India with higher prevalence in those with overweight/obesity and those with diabetes /prediabetes³. Fatty liver has been reported in all age groups, including children with highest prevalence in those between 40 to 49 year of age, recent studies
shown that NAFLD occurs with equal frequency in males and females. \textit{Yakrit} mentioned in Ayurvedic texts can be compared to liver, as per Ayurveda, \textit{Yakrit} is a organs which related to the formation and maturation of blood. The roots of \textit{Raktavaha Srotas} (channels which are related to the formation and carrying of matured blood) lie in \textit{Yakrit} and \textit{Pleeha}. \textit{Yakrit}, being the main seat of \textit{Ranjaka Pitta} and \textit{Rakta Dhatu}. The function of \textit{Rakta Dhatu} or \textit{Ranjak Pitta} does not function well, it produces many disorders. The conditions affecting the structural and functional aspect of \textit{Yakrit} due to various reasons are termed as \textit{Yakrit Vikaras}.

Hence Nonalcoholic fatty liver disease is considering as \textit{Yakrit vikaras} occur due to \textit{Atisantarpana} (over nutrition). NAFLD is not comparable to any condition in Ayurveda, but we consider it as \textit{Santarpanajanya Vyadhi} (disease caused by over nourishment) because similarity in the \textit{Nidana} (etiology) and \textit{Samprapti} (pathogenesis). Hence we can treat the condition with the help of traditional remedies includes \textit{Langhana}, \textit{Pachana}, \textit{Deepana}, \textit{Mridu Virechana} (classical \textit{Virechana}). In the today’s scenario the modern medicine have not specific treatment of this disease, that’s why its need of time to explore some herbal sources is priority to prevent a cure the NAFLD.

**Aims and objective:** To explore the role of Ayurvedic treatment in management of Nonalcoholic fatty liver disease.

**Material and Methods:**
As the study is a review study, the available literature like \textit{Samhitas} and other modern literature, books are searched for the disease; all relevant content is considered and analyzed to get a comprehensive concept in the management of NAFLD.

**DISCUSSION**

**Modern aspect of NAFLD:** The risk factors for the disease are urbanization and associated changes, such as sedentary life style and fat rich diet, and a higher inherited tendency for diabetes mellitus makes Indians more prone to metabolic syndrome or insulin resistance and its manifestation, such as NAFLD and NASH. Indian population has a higher body fat content and abdominal adiposity; the latter is particularly associated with insulin resistance and thus NAFLD, even if the BMI is normal.

**Aetio-pathogenesis:** Currently multiple hypothesis is going on to explain the pathogenesis of NAFLD. Includes development of hepatic macro-steatosis as a result of increased lipolysis and free fatty acids. Second reason is oxidative stress, presence of endotoxins, cytokines, adipokines and environmental factors. These complex interactions of the various factors lead to insulin resistance and serum and liver iron overload and oxidative stress that lead to macroinflammation and fibrosis. Truncal or central obesity is more associated with NAFLD [reference language not good).

**Clinical features:** Most subjects are asymptomatic. Diagnosis often follow incidental, usually picked up evaluation of dyspepsia, malaise and fatigability. NASH/NAFLD can progress to cirrhosis and end stage liver diseases and is projected to be leading cause of liver transplantation.

**Diagnosis** of NAFLD requires the exclusion of other specific etiology of liver disease and excessive alcohol consumption. NAFLD should be suspected as a cause of asymptomatic elevation of Aminotranferases. In general, ALT is higher than AST. Diagnosis strongly suggested when metabolic syndrome is present and specific etiology is excluded. Ultrasound, CT, MRI, MRS radiological modalities are accurate in detecting hepatic steatosis; liver biopsy is diagnostic but may not be routinely required.

Currently there is no approved treatment for NAFLD. At the present time, the initial approach involves dietary modification based on the metabolic profile and getting patients to increase level of physical activity. Small changes in body weight can achieve improvement in hepatic necro inflammatory activity. Various other treatment modalities used for NAFLD have included treatment of risk factors like diabetes mellitus, hyperlipidaemia, use of antioxidant and insulin sensitizing agents.

**Ayurvedic Point of View:** NAFLD can correlate with the \textit{Santarpanajanya Vyadhi} (disease caused by over nourishment) due to having \textit{Nidana} (etiology) and \textit{Samprapti} (pathogenesis) similar to \textit{Sthaulya}. Initial
pathology lies at Agnivikriti (vitiation of digestive mechanism). Vitiation of Agni by any of the Dosha leads to the formation of Apakva Anna Rasa (improperly formed digestive end product) which again leads to the vitiation of Kapha Dosha and Medodhatvagni. Because of the Khavaignya happening at Medovaha Srotasa, Shhayi Medodhatu gets increased abnormally or irregularly, without providing proper nutrition to subsequent Dhatu like Asthi, Majja and Shukra. Increased Medodhatu has more tendencies to beget deposited over abdomen\(^8\). In the abdomen, maximal fat deposition occurs at Yakrit and this condition is called as Fatty Liver. Vitiatted Kaptha and Meda results in Srotorodha (blockage of channels) which provokes Vata. Vitiatted Vata again results in Agnivikriti and this cycle repeats.

**Nidana of NAFLD\(^9\):** Aaharaj Nidana includes excessive use of Lavana (sour), Amla Katu (bitter) Rasa dominant diet, excessive use of Kshara Sevana, excessive use of Snigdha (oily), Guru Ushna (hot) Sleshmala Ahara (diet), Excessive use of Navanna (new harvested food), Mamsa (meat), Navamadhya (newly made alcohol), Ikshuvikara (sugar cane products) Sevana, Kulatha, Maskha, Tila Taila, Moolaka, Dadhi (curd), Shukta (pickels), Sura (supernatant alcohol), Souveeraka, junk food i.e. Pizza, use of cold drinks with diet, Adhyashana (excessive eating), Vishamashana (irregularly habit of taking food), Virudha (having Incompatible food), Vidahi (spicy), Akalabhojan (not follow proper time to take meal), Abhojana (fasting) etc. are etiological factors to aggravated the pathogenesis of NAFLD. Viharaja Nidana includes less exercise or lazy to exercise, sedentary life style, irregularities in sleeping pattern, excessive angriness, Divasvaspna (day sleep), Vegadharana (suppression of natural urge), Vireka Yamana Snea Vihbrama.

**Fatty liver as a Nidanarthakara Roga\(^10\):** Commentator Dalhana has quoted that Vata Vikara may occur due to Avarana (covering) of Marga by Medo Dhatu. This refers to secondary conditions leading to fatty liver like obesity, diabetes mellitus, hypothyroidism etc. where a significant role is played by Vata in the pathogenesis. The normal Gati of Vata Dosha gets obstructed due to excess Medo Dhatu which thus gets vitiated causing further pathogenesis. These factors lead to fatty liver.

**Samprapti of NAFLD and its consequences:** NAFLD is primarily considered as a Santarpanajanya Vyadhi. Though Santarpana Ahara and Vihara which includes sedentary life style, high calories food intake, lack of exercise etc. are considered as the main culprits of fatty liver, Santarpana Ahara and Vihara which vitiate Agni and Vayu also play a major role in the pathogenesis. Although, the Dushti of Kapha, Rasa and Medo Dhatu and Srotasa are more evident from the symptoms, involvement of other components like Vata, Pitta, Rakta, Annavaha and Purishavaha Srotasa cannot be ignored.

On the basis of Samanya Visheshaa Siddhanta, the excessive consumption of similar substances (Dravyasamanya), similar qualities (Gunasamanya) or similar actions (Karmasamanya) help in over production of Dosha and Dhatu. In the manifestation of any disease, vitiation of certain basic components – Dosha, Dhatu, Mala, Srotasa - takes place.

**Rupa (Clinical Presentation) of NAFLD:** Symptoms can be mainly attributed to the Dushti of Rasa and Medo Dhatu and Srotasa it shows the features of Jatharagni and Dhatvagni Mandya. Patient may develop symptoms of Ajirna and Sthaulya as root cause is Aam and Agnimandya. As Vibandha or Atipravritti of Mala (Non elimination or excess elimination of feaces), Ananabhiha (Loss of appetite), Glani (General weakness), Marutamoodata (Belching, Flatulence), Vishtambha (Distension of abdomen), Gaurava (Feeling of heaviness), Bhrama (Giddiness), Anaha (Belching), Praseka (Excess alleviation), Utklesha/Hrillasa (Nausea), Gaurava (Feeling of heaviness). Symptoms of Sthaulya Ati Kshudha(Excessive hunger), Ati Sveda (Excessive sweating), Ati Nidra (Excessive sleep), Daurbalya (General debility), Udaravriddhi (Enlargement of Abdomen), Anga Shithilata (Flabbiness of body), Ayasa Akshamata (Unable to bear physical exercise).

**Chikitsa (Management):** Chikitsa aims not only removal of the causative factors of the disease, but also at the restoration of the Doshika equilibrium. The
points focused to be in the management of NAFLD are Agnivaigunya, Kapha Medo Dushti at Mulasthana of Raktavaha Srotasa, Srotorodha and Vatakopa. Therefore, the treatment should aim at Agnideepana, Amapachana, Kapha Medo Anilapaha and Srotoshodhana, which are almost similar with treatment principle of Ajirna and Sthaulya. As the Sthanasamshraya takes place at Yakrit, Yakrit Shothahara Chikitsa should also be adopted. Treatment can be classified into Nidana Parivarjana, Samsodhana, Samsamana and diet–life style modifications.

1. **Nidana Parivarjana**: Avoidance of causative factors is the prime line of treatment of any diseases mentioned in Ayurveda classics. The factors which mentioned in Nidana of NAFLD should avoid, so can prevent the disease.

2. **Samshodhana**: Acharya Charaka has mentioned the fruitfulness of Shodhana Karma as, by the administration of these therapies disease are cured and his normal health is restored; the sense faculties, mind become clear. Virechana might have effect as Vyadhiviparita Chikitsa. Acharya have given a list of the various disease conditions (Virechya Vyadhi) where Virechana Karma is ideal to administer as prior choice of therapy. Udara Roga is one among Virechya Vyadhis. Samyaka Virechana contributes Indriya-samprasada (cleansing of all senses) and bio-purification of body. Virechana Karma (bio-purification therapy) is most suitable Shodhana Karma for the liver disorders and mentioned best treatment for Pittaja and Raktaja Roga. Virechana is useful for eliminating vitiated Pitta Dosha, helps for active transformation of Srotasa (micro circulatory channels) It is also indicated in excessive Dosha accumulation and blockage of channels. Nitya Virechana is mentioned as the treatment of Udarakara, which is the final stage of NAFLD. Drugs and formulations include Eranda Taila, Trivrita Avaleha, Haritakyadi, Katuki can be used for the Virechana Karma.

3. **Samshamana Chikitsa**: Number of single herbs, herbal and herbo-mineral formulations mentioned in Yakrit-Pleeha Chikitsa Adhikarana in Bhavaprakasha and Bhaishajyaratnavali. It is also said that all the drugs mentioned for the management of Pleeharoga can also be included in Yakrit Roga Chikitsa. Drugs which are having Tikta, Kashaya Rasa, Lekhana, Deepana and Pachana properties, which increase the power of Agni and reduce Kapha, Meda and Ama are the choice of drugs for the management of NAFLD.

**Shamana drugs used in the management of NAFLD**:

Single drugs includes Pippali, Sharapunkha, Katuki, Guduchi, Haritaki, Bhumiamalaki, Decoctions i.e. Phalaitrikadi Kwatha, Pathyadi Kawatha, Patoladi Kwatha, Guduchyadi Kwatha, Asava-Arishta i.e. Rohitakarishta, Pippalyasava, powders i.e. Hingwashtaka Churna, Vaishvanara Churna, Ajmodadi Churna, Triphala Churna, Avipattikara Churna, Rasa preparations i.e. Arogyavardhini Vati, Purarnava Mandura, Chandrarakhaba Vati are useful medicaments for the management of NAFLD.

**Some formulations mentioned here in Ayurveda classics like**:

- Pippali Churna + Dugdhga
- Arkalavana + Mastu
- Hingu, Trikatu, Kushtha, Yavakshara, Saindhava + Matulunga Rasa
- PalashaKshara Toya Bhavita Pippalli Churna
- Shankhanabhi Bhasma + Jambeeraphala Rasa
- Sharapunkhamula Kalka + Takra
- Shalmalipushpa Phanta + Rajika Churna
- Yavani, Chitraka, Yaavashuka, Shadgranthi, Danti, Pippali + Ushnambu, Mastu, Sura, Asava.
- Shigru Kwatha + Amlavetasa, Saindhava, Pippali, Maricha
- Rohitaka or Abhaya Kvatha + Pippali or Yavakshara
- Shobhanjana Kwatha + Saindhava, Pippali, Chitraka or Palashakshara or Yavakshara
- Pakva Amra Rasa + Madhu
- Yavanikadi Churna
- Pippali, Nagara, Danti, Abhaya, Vida + Ushnambu

4. **Diet and life style modification** (Pathya Apathya) to be followed in the management of NAFLD.
**Pathya:** Use Puranashali, Kodrava, Shyamaka, Yava, Laja, Mudga, Karavellaka, Patola, Shigru, Ardraka, Kushmanda, Kaalashaaka, Lasuna, Panchakola, Dadima, Draksha, Kapitha, Jambu, Ela, Pippali, Maricha, Madhu, Takra, Ushnajala in routine diet. Also do the upavasa, Kale Bhojana, Vyayama, Chamkramana, Yoga, Pranayama Dhyana, Pathana, Madhyama Marga Sheelana in daily routine.

**Apathya:** Avoid taking Navadhanya, Chanaka, Kulatha, Masura, Tila, Masha, Kanda, Mulaka, milk preparations (Dugdha, Dadhi), Mastu, Sura, Ikshuvikara Anupa, Oudaka Mamsa in the diet. Avoid taking excessive diet, sedentary life style, Svapnaviparyaya (irregularity in sleeping pattern), Vegadharana, stress, angeriness, and excessive thoughts.

**CONCLUSION**

Fatty liver is mainly generated from the excessive caloric intake and lack of physical activity, pointing to correction of unhealthy life style as the first line approach in the prevention and treatment of NAFLD. Through follow the adequate life style and dietary changes can prevent the disease. Traditional system of medicine is very useful the disease also it is cost effective and increase the quality of life of patients too.

**REFERENCES**

8. Madhavakara, Madhava Nidana, Madhya Khanda Medoroganidana -4,, with Madhukosha Sanskrit commentary by Vijayarakshita and Shrikanthadatta & Vidyotini Hindi commentary by Shri Sudarshana Shastri, Edited by Prof. Yadunandana Upadhyaya, Chaukhamba Prakashan; 2008, Varanasi, p.34-38
15. Agnivesha, Charaka Samhita, Chikitsa Sthana, Udara Roga Adhyaya, 15/121, revised by Charaka and Driddhala with Ayurveda Dipika commentary by

Source of Support: Nil
Conflict Of Interest: None Declared