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Pathya & Apathya (Wholesome & Unwholesome diet and regimen) in Yakrit Kshaya (Liver Cirrhosis) : A Narrative Review

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ABSTRACT

Yakrit Kshaya (Liver Cirrhosis) is associated with vitiated *Agni* (digestive power), production of *Ama* (Undigested food) and *Anuloma* and *Pratilomakshaya* (forward and backward depletion of *Dhatu*). Approximate 20% compensated cirrhosis patients and 65-95% decompensated cirrhosis patient have either *Anuloma Dhatu Kshaya* (forward depletion) or *Pratilomana Dhatu Kshaya* (backward depletion) or both types of malnutrition. *Pathya* (wholesome diet and regimen) is defined as the *Ahara* (Diet) and *Vihara* (regimen) that give proper nutrition to body and mind, clear the micro channels of Body (*Pantha/Marga/Srotas*), and provide happiness; that opposite is *Apathya* (unwholesome diet and regimen). A *Pathya* and *Apathya* chart for *Yakrit Kshaya* (Liver Cirrhosis) is prepared and presented. *Chinta* (anxiety), *Shoka* (depression), *Krotha* (anger), *Duhkha* (sorrow), *Dukkha Shaiya* (uncomforted bed) and *Ratrijagarana* (insomnia) can contribute for the indigestion even if a small quantity of *Pathyaahara* (wholesome diet). Normal diet with *Goghruta* (ghee) prepared from curd (Emulsified fat), *Mamsa Rasa*, milk can balance the protein. The *Yakrit Kshaya* patients should eat 6-8 times in small quantity (snax, mini meal) as their *Agni* is low to very low. Mid night meal is also advisable for reduce protein breakdown. Restriction of water, sour and salty foods, fast foods are very crucial for the treatment outcome as it create *Ama*. More research on *Pathya* (Ayurveda diet) in *Yakritkshaya* (Liver cirrhosis) is encouraged.

Key words: *Yakrit Kshaya, Anuloma Kshaya, Pratiloma Kshaya, Pathyaahara, Pathyavihara, Cirrhosis of Liver, Nutritional support.*

INTRODUCTION

Pathya (Proper diet and regimen) is as important as medicine as per Ayurveda doctrine. If a patient follows proper diet and regimen (*Pathya*) then no need of medication; similarly, if a patient does not

follow proper diet and regimen as advised then there is no use of medication.^[1] That may the reason of *Charaka Samhita* for inclusion of *Pathya* in one the synonym term for *Chikitsa* (treatment).

Ahara (Diet) is one of the three pillars of human body; other two are *Nidra* (sleep) and *Maithuna* (sexual life) may be considered as *Vihara* (regimen) after the inclusion of *Vyayama* (exercise), *Vyasana* (addiction) and *Vrutti* (occupation).^[2] *Ahara* (Diet) is that consumed are transformed to *Prasada* (essence) and *Kitta* (waste) by the metabolic fire (*Agni*). The concept of digestive & metabolic fire can be thought of as the strength and volume of stomach acid, digestive enzymes, and bile in the GI tract. These juices break down the food that we eat into the necessary building blocks for energy and proper nutrition.^[3] *Yakrit* (Liver) is one of the major organs of *Agni* involved in

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maintaining *Samhanana* (Nutritional status) of individuals. Past few decades *Daurbalya*, & *Mamsa Kshaya* (Protein Energy malnutrition, & Sarcopenia) are recognised as risk factor for infection, deuteriation of liver function and high mortality.^[4] It was observed that *Anuloma* and *Pratitomakshya* were significant in *Yakrit Kshaya* (Chronic liver diseases). *Daubalya* (PEM) is also associated with a number of complications Chronic Liver diseases (CLD) such as oesophageal varices, hepatic encephalopathy, hepato-renal syndrome, etc. and patients with hepato-cellular diseases are more susceptible to protein deficiency with micro nutrients deficiency.^[5] It also observed that patient with *Daurbalya* and *Mamsa Kshaya* has less regeneration of liver parenchyma cells, reduction of albumin and high mortality in integrated treatment approaches.^[6] The prognostic and therapeutic role of *Pathya-apathya* issues in the management of *Udara Roga* special reference to *Yakritdalludara & Jalodara* has been well known from the period of *Charaka Samhita*. It was known that protein energy malnutrition is a transversal condition to all stages of *Udararoga* that why may be milk diet is advised.^[7] As because there is increased burden of *Medaja Yakritroga* (Fatty liver & NASH), a new theory of nutrition associated with Liver injury is discovered.^{[8],[9]}

Therefore, it is necessary to review the relevant issues of *Pathya-apathya* in light of recent evidences for the management of chronic liver diseases (CLD) specially *Yakrit Kshaya* (Liver Cirrhosis).

Ayurvedic theories and practices on health, food, and nutrition are quite different from those of biomedicine and modern nutrition. Systematic exploration can provide new insights to health and nutritional sciences to provide contemporary solutions in health care gap, how one can modulate the diet and lifestyle to suit one's prakriti, age, season, and diseases condition is the matter of guidance of physician (*Vaidya*).^[10] *Pathya* (wholesome diet and regimen) is defined as the *Ahara* (Diet) and *Vihara* (regimen) that give proper nutrition to body and mind, clear the micro channels of Body (*Pantha/Marga/Srotas*), and provide happiness; that

opposite is *Apathya* (unwholesome diet and regimen). *Pathya* and *Apathya* are indicated in prescription according to the aetiology, nature and the severity of the disease, i.e., those habits that can aggravate the diseased condition are advised for restriction.^[11]

Yakrit Vikara Samprapti (Patho-physiology of Liver disorders In Ayurveda)

Ayurveda philosophy considered *Tridosha* (*Vata, Pitta, Kapha*), *Sapta Dhatu* (*Rasa, Rakta, Mamsa, Meda, Asthi, Majja*) and *Trimala* (*Mutra, Purisha, Sweda*) as basic component of body and their balanced and imbalanced state of body are known as health (*Swatha*) and diseases (*Vikara*) respectively. The three humours are functional unit and *Sapta Dhatu* is structural unit of body. The waste product of *Ahara* and *Dhatu* are *Malas* which requires proper excretion for homeostasis.

Liver can be referred as *Yakrit* as per Ayurvedic classics. *Yakrit* is the seat of *Ranjakapitta*, which transforms *Rasa Dhatu* to *Raktadhatu*. *Yakrit* is the *Mulasthan* (site of origin) of *Raktavahasrotas*; also related to *Raktavahi & Mamsavahi Dhamani*. *Yakrit* is an important *Koshthanga* (abdominal organ). In Ayurveda, the diseases of anatomical entities (*Dhatu*) manifested through either *Vridhi* (Increase of specific quantity) or *Ksyaya* (decrease of specific quantity) like - *Rasa Vridhi, Rasa Ksyaya, Rakta Vridhi, Rakta Ksyaya, Mamsa Vridhi, Mamsa Ksyaya* etc. Similar way *Yakrit* is manifested through *Yakrit Vridhi* (Hepatomegaly) and *Yakrit Kshaya* (Cirrhosis). *Susruta*, first time give the specific name to the *Yakrit Vridhi* as *Yakritdalyudara* where as *Yakrit Kshaya* is narrated in *Bhaisajya Ratnavali*.

Yakrit Vikaras (Liver disorders) are dealt with *Udara Roga* (abdominal disorders). *Yakrit* is mentioned in *Charaka Samhita* in the treatment of *Plihodara* (splenomegaly). It may due to the occurrence of spleno-hepatomegaly in many cases. The *Pradusti* (manifestation) of *Yakrit* which is situated in right side of body is *Yakritdalludara* mentioned in *Susruta Samhita*. *Yakrit Vikaras* (Liver disorders) comprehensively elaborated in *Charaka, Susruta, Astanga Hrudaya* and *Bhavaprakash Samhitas* where

there is structural and physiological integrity of the liver is affected. These diseases are *Pittaja Pandu*, *Kamala* and its types, *Yakritdora*, *Yakritvidradhi*, *Raktapitta*, *Jalodara*, *Madatyaya* and *Pittaja Jvara*.

The detailed description of *Yakritroga* is found in *Bhavaprakash* as *Yakritvridhi* along with its classification and symptomology. The *Yakrit Vridhi* again classified in to *Chyuta* (displacement from own place due to accident) and *Achyuta* (due to *Rasadi Dhatu* and *Rasa*, *Rakta* and *Mamsavaha Srotos*). *Rasapradosaja* diseases like *Jvara*, *Pandu*, *Hridroga* are likely to produce *Shotha*, *Kamala* and *Yakritroga*. The *Lakshana* (symptoms) of *Kamala*, *Pandu*, *Shotha*, *Raktapitta* etc. are frequently observed in the descriptions of *Pittaja*, *Kaphaja*, *Sannipapaja*, *Vishama* and *Dhatugata Jvara*. The symptoms and signs of *Yakitdallyudara* are the same as that of *Plihodara* as both the organ are origin (*Mula*) of *Raktavaha Srotas* and liver and spleen are said to similar function. The classics describe five kinds of *Plihadosa* (*Panca Plihadasah*) in the similar *Asyakritgatadosa* may be established. *Astanga Samgraha* has described three types of *Plihodara* (*Attadariya Sangraha Nidana*, 12:29), so three types of *Yakritdosa* may be enumerated. *Krimi* (pathogen) and *Meda* (adipocyte) are said to be the cause of *Yakitvikara* in recent days. So *Krimijakritroga* and *Medajakritroga* may be suggested. Certain weight lowering herbal supplement and many modern antibiotics, toxin, chemotherapeutics agents causing liver toxicity, which may call as *Visaja Yakritvridhi*. In many patients of chronic liver diseases, it is quite mild and does not cause significant liver damage. However, in some people, continued inflammation slowly damages the liver, eventually resulting in Cirrhosis (severe scarring of the liver), Liver failure, and sometimes Liver cancer. So, the aetiology of *Yakritvridhi* leads to *Yakrit Kshaya* is similar in some cases. Chronic hepatic infection, hepatitis of any aetiology, and hepatomegaly of any aetiology leads to inflammation which further leads to fibrosis. Fibrosis is consequences of wound healings response, and progress of regeneration of damaged tissues by balancing fibrogenesis and fibrolysis. This

inflammatory response leads to Hepatic Stellate Cell (HSC) and activate to generation of myofibroblast which produce extra cellular matrix to replace damage tissue. When more fibrogenesis and insufficient fibrolysis then it progressed to cirrhosis of Liver.^[12]

The common consensus of *Yakritvikara* as *Yakritvridhi* & *Yakrit Kshaya* as per its etiological factors and its possible correlation are like - *Vataja Yakrit Vridhi* (chronic hepatitis), *Pittaja Yakrit Vridhi* (Non Alcoholic Steatohepatitis), *Kaphaja Yakrit Vridhi* (Non-alcoholic fatty liver Diseases), *Sannipatika Yakrit Vridhi* (Hepatocellular Carcinoma), *Medaja Yajritvridhi* (Steato hepatitis), *Madyaja Yakritvridhi* (Alcoholic Hepatitis), *Asatmiyaja Yakritvridhi* (Auto immune hepatitis), *Visajayakritvridhi* (Drug Induced hepatitis), *Amajayakritvridhi* (Metabolic hepatitis) similarly *Medaja Yakrit Kshaya* (Hepatic Cirrhosis), *Madyaja Yakrit Kshaya* (Alcoholic Cirrhosis), *Asatmiyaja Yakrit Kshaya* (Auto immuno cirrhosis) *Visajayakritkshyaya* (Drug induced Cirrhosis), *Amaja Yakrit Kshaya* (Metabolic cirrhosis) *Visaja Yakrit Kshaya* (Drug induced Cirrhosis) and *Sannipatika Yakritdalludara* (Hepatocellular carcinoma) / *Yakritarbuda*, *Yakritvidradhi* (Liver anbcess), *Yakritgranthi* (Hepatic cyst).^[13] As the matter related to *Pathya-apathya*, so whole *Yakritvikara* can be grouped under *Santarpanajanya* or *Apatarpanajanya Vikara*.(Table 1)

Table 1: Santarpanajanya or Apatarpanajanya Yakritvikara with modern correlation.

SN	Santapanajanya	Modern correlation	Apatapanajanya.	Modern correlation
1.	<i>Vataja Yakrit Vridhi</i>	Steto hepatitis	<i>Vataja Yakrit Kshaya</i>	Initial stage of fibrosis
2.	<i>Kaphaja Yakrit Vridhi</i>	NAFLD	<i>Kaphaja Yakrit Kshaya</i>	Cirrhosis liver
3.	<i>Medaja Yakrit Vridhi</i>	NAFLD	<i>Medaja Yakrit Kshaya</i>	Cirrhosis liver
4.	<i>Pittaj Yakrit Vridhi</i>	NASH	<i>Pittaj Yakrit Kshaya</i>	Hepatic Cirrhosis
5.	<i>Madhyaja Yakrit</i>	ALD	<i>Madhyaja</i>	Alcoholic

	Vridhi		Yakrit Kshaya	Cirrhosis
6.	Sannipatika Yakrit Vridhi	HCC	Tridosaja Yakrit Kshaya	HCC
7.	Amaja Yakritvridhi	Metabolic hepatitis	Amajayakrit Kshaya	Metabolic cirrhosis
8.	Asatmyaja Yakritvridhi	Auto immune hepatitis	Asatmyaja Yakrit Kshaya	Auto immuno cirrhosis
9.	Krimija Yakritvridhi	Infective Hepatitis	Krimija Yakrit Kshaya	Infective Cirrhosis
10.	Visaja Yakritvridhi	Drug induced hepatitis	Visaja Yakrit Kshaya	Drug induced cirrhosis
11.	-	-	Yakritvidradhi	Hepatic abscess
12.	-	-	Yakritgranthi	Hepatic cyst
13.	-	-	Kamala	Jaundice

Apatarpana Chikitsa includes lifestyle counselling to achieve a gradual weight reduction and an increase in physical activity for *Santarpanajanya Yakrit Vikara* (Liver diseases due to Overnutrition). Patients are encouraged to lose $\geq 8\%$ of their body weight. An intensive lifestyle intervention focused on diet, exercise and behaviour modification with a goal of 7-10% weight reduction that leads to significant improvement in liver histology in patients with NASH. Indeed, weight loss improves steatosis, reduces hepatic inflammation and hepatocellular injury and improves cardiovascular risk profile. However, weight loss through energy restriction is difficult to achieve and sustain. Physical activity and exercise also effectively decrease steatosis.^[14] *Santarpana Chikitsa* includes the nutritional supplements and physical activities for *Apatarpanajanyayakrit Vikara* (Liver diseases due to malnutrition).

Prasara & Nidana (Prevalence & Aetiology)

Yakrit Kshaya (Cirrhosis of Liver) involved a continuous process of *Yakritsopa* (hepatic inflammation), repair or healing and permanent fibrosis. The most common causes are *Krimi* (hepatitis

C, B), *Madhya* (alcohol) and increase of *Yakrimeda* (hepatic fat) due to *Pachaka* and *Ranjaka Pitta Swabhavavikriti* (change the character of *Ranjaka & Pachaka Pitta*). The assessment of degree of vitiation of *Agni* is very important for the advice of *Pathya* and *Apathya*. Approximate 20% compensated cirrhosis patients and 65-95% decompensated cirrhosis patient have either *Anuloma Dhatu Kshaya* or *Pratilomala Dhatu Kshaya* or both type of malnutrition.^[15] It is crucial to refer in the context of *Yakrit Kshaya* (Cirrhosis of Liver), if patients associated with malnutrition then higher rate of encephalopathy, infection, ascites and visceral bleeding.^[16] The following events takes place.

- 1. Vitiation of Agni** - The entire range of digestion and metabolism activities takes place with the help of biological fire (*Agni*). The *Pachaka Pitta* has *Dravyatva* (dilution) vitiation due to excess intake of *Amla Rasa/Madya*. It effects the *Ranjakapitta* of liver due to more *Ushna*. The *Ushnaguna* of *Ranjaka Pitta* reduces *Kapha/Meda* and vitiated *Vata* to create *Yakrit Kshaya*.
- 2. Production of Ama** - The production of *Ama* (Undigested food) due to decline digestive power (*Agni*) is an important consideration of *Yakrit Kshaya* (Hepatic cirrhosis). The *Yakrit Kshaya* patients experience more bacterial growth, malabsorption and hypomobility of small bowel may be due to the production of *Ama*.
- 3. Anuloma Kshaya (Onwards depletion of Dhatu)** - *Anuloma Kshaya* means the depletion of *Dhatu* takes place in the direction of their nourishment i.e. *Rasa* then *Rakta* then *Mamsa* and so on. The *Yakrit Kshaya* patients experience *Anuloma Kshaya* may be due to loss of appetite, malabsorption, Low dietary intake, low cholecystokinin (felling satiety), low cytokines (reduce hypothalamic function for appetite), mechanical compression due to ascites leads to premature felling of fullness lead to less production of *Rasa*, therefore other *Dhatu*s are also decline.

4. Pratiloma Kshaya (Reserve depletion of Dhatu) - Pratiloma Kshaya means the depletion of Dhatus takes place in the direction opposite to their nourishment i.e. Shukra then Majja then Asthi and so on. The higher rate of fat oxidation in fasting state of Yakrit Kshaya (Liver Cirrhosis) due to low glycogen store. It has great impact of Meda Dhatu. There is a decrease in production of protein and increase the rate of protein degradation. Low glycogen reserve in the liver triggered the increased rate of gluconeogenesis from amino acid. Protein break down leads to Mamasa Dhatu Kshaya.

5. Oja Kshaya (Depletion of energy) - There is significant Ojas Kshaya in CLD patients. Urga means resting Energy expenditure (REE) which is more in Yakrit Kshaya patients.

Nutritional assessment

An appropriate history, physical examination, and various laboratory markers that help evaluate the nutritional status of a patient. Currently, various plasma proteins, vitamin levels, and creatinine are considered useful for nutritional assessment. Albumin, pre-albumin, and occasionally transferrin are major plasma proteins that are included in biochemical investigations. One of the simplest methods of anthropometric assessment includes the body mass index (BMI). However, the use of BMI in liver disease is very limited as patients often have volume overload complications, which can lead to an overestimation of nutritional status. An anthropometric test that is less affected by fluid status is known as mid-arm muscle circumference (MAMC). MAMC can be used as a measurement of lean tissue levels and muscle bulk.^[17]

Pathya Ahara & Vihara (Unwholesome diet and life style)

Pathya Ahara (wholesome diet) nourish all Dhatus, cleans all Dhatus, detoxify the body and balanced vitiated Doshas. Pathyavihara (wholesome lifestyle) is also as important as Pathya Ahara (wholesome diet). Charaka described that Chinta (anxiety), Shoka (depression), Krotha (anger), Duhkha (sorrow),

Dukha Shayya (uncomforted bed) and Ratrijagarana (insomnia) can contribute for the indigestion even if a small quantity of Pathya Ahara (wholesome diet).

So Yakrit Kshaya patient should practices like - Pranayama, Dhyana (Meditation) mild exercise, limbs movement, Ahyanga with Chandanadi Taila, bath with luke warm water, avoid stress, and adequate sleep.^[18]

Various Pathya Kalpana (wholesome diet preparations) like - Manda, Peya, Vipeli, Yavagu help to increase Agni and reduce the production of Ama which is very vital in Yakritkshaya. Mamsa Rasa is a regular prescription of many doctors for protein supplement in Yakritkshaya. The Pathya of Udara Roga, Kamala, Raktapitta, Pandu may be followed for Yakritkshaya.

Table 2: Pathya & Apathya (wholesome and unwholesome diet) in Yakritkshaya (liver cirrhosis)^{[20],[21]}

Items	Pathya (Wholesome diet)	Apathya (Unwholesome diet)
Cereals	Shastika, Yava, Godhuma Laja Manda	Rice flour, Tila, drugs having Ushna, Lavana, Amla, Vidahi Gunas.
Pulses	Mudga	Masa
Fruits	Draksha, casted apple, pomegranate, apple, Ripened kiwi	Orange, lemon, mango, watermelon
Vegetable	Potala, snake guard, beans, Shigru, brinjal, potato, Jeevanti, punnanova, Radish	Chilly, bitter guard, pickle, pumpkin, all leafy vegetables (Saka)
Milk Product	Ghee, Milk (250-500ml), Takra	Curd
Non Veg	Mamsa Rasa with Dashamoola	All fish
Others	Gomootra, Asava, Arishta.	Sura, Madhya, water less than 1000ml, salt

Pathya (wholesome diet) is an important factor in the management of liver diseases as per Ayurveda. As liver is the site Pitta so Pittanasaka Ahara (Fruit and vegetable) is advisable. Salt and sour foods are

avoided as its increased *Pitta*. Milk is a complete food of all nutrients and easily digestible is diet of choice. *Goghrita* (Cow ghee) prepared from curd can reduce *Pitta* and increased agni. *Mamsa Rasa* can be maintained protein supplement in CLD for non-vegetarian patients. Intake of water should be limited to 800-1200ml. *Takra* and *Laja Manda* may be the diet of choice to balance *Pitta* in stomach and reduce acidity. All the *Pathya* and *Apathya* food items enumerated for reference (Table 2). The *Yakrit Kshaya* patients should eat 6-8 times in small quantity (snax, mini meal) as their *Agni* is low to very low. Mid night meal is also advisable for reduce protein breakdown.^[19]

CONCLUSION

YakritKshaya (Liver Cirrhosis) is associated with vitiated *Agni*, production of *Ama* and *Anuloma* and *Pratiloma Kshaya*. *Pathya Ahara* (wholesome diet) nourish all *Dhatus*, cleans all *Dhatus*, detoxify the body and balanced vitiated *Doshas*. *Pathya Vihara* (wholesome lifestyle) is also as important as *Pathya Ahara* (wholesome diet). *Chinta* (anxiety), *Shoka* (depression), *Krodha* (anger), *Dukkha* (sorrow), *Dukkha Shayya* (uncomforted bed) and *Ratrijagarana* (insomnia) can contribute for the indigestion even if a small quantity of *Pathya Ahara* (wholesome diet). Normal diet with *Goghrita* (Emulsified fat), *Mamsa Rasa*, milk can balance the protein. The *Yakrit Kshaya* patients should eat 6-8 times in small quantity (snax, mini meal) as their *Agni* is low to very low. Mid night meal is also advisable for reduce protein breakdown. Restriction of water and limited 1000-1500ml, sour and salty foods, fast foods should be avoided as these create *Ama*. More research on *Pathya* in *Yakritkshaya* is encouraged.

REFERENCES

- Vishwanatha. Pathya Apathya Nirnaya, commentary by Brahmananda tripathi; Dehli; Chaukhamba Sanskrita Pratistana; 1st edition, 1998, p.3.tpg.136.
- Panda Ashok Kumar & Tripathy Rabi, The concept of Sopha : Critical Review. Inter J Res: Granthalaya August 2020;8(8):15-23.
- Stephanie Peltz, The Digestive Fire: Ayurvedic approach to healthy digestion through the Season, Chiro-practice Wellness, 2019 March issue: Volume-1, 20-1.
- Sevastianos VA, Drurakis SP, Malnutrition and Sarcopenia in advanced Liver diseases, J. Nutr Food Sci 2016;6:487.
- Hulsman EJ entitled Protein Energy Malnutrition Predicts complications in Liver cirrhosis, Eur J. Gastroenterol Hepatol 2011;23:982-989.
- Ashok Kumar Panda & K.K. Rath. Ayurvedic treatment outcome for Chronic Liver diseases. J Ayurveda Integr Med Sci 2019;6:190-193
- Acharya YT, Charaka Samhita, Chikitsasthana, Udara chikitsa, 13/61, Reprint edition Chaukhamba Orientalia, Varanasi, 2007; 493.
- Ashok Kumar Panda et al., Role of Meda (Adipocyte) in Liver diseases: Ayurveda Prospective, J Ayurveda Integr Med Sci 2020;2:141-47.
- Parvin Mirmiran entitled Relationship between Diet and Non Alcoholic Fatty Liver diseases : A review, Iran J public Health August 2017, 26;8:1007-1017.
- Banerjee S, Debnath P, Debnath PK. Ayurnutrigenomics: Ayurveda-inspired personalized nutrition from inception to evidence. J Tradit Complement Med. 2015;5(4):228-233. Published 2015 Mar 24. doi:10.1016/j.jtcme.2014.12.009
- Agnivesha, Charaka, Dradhabela, Charaka Samhita, Sutrasthana, edited by Pt. Kashinath Shastri, reprint edition, Chaukhamba Bharati Academy, Varanasi, Adhyaya, 2003; 25/45: 478.
- Park BJ, Lee YJ, Lee HR. Chronic liver inflammation: clinical implications beyond alcoholic liver disease. World J Gastroenterol. 2014;20(9):2168-2175. doi:10.3748/wjg.v20.i9.2168.
- Panda A.K entitled, A Consensus driven statement for Ayurvedic Nomenclature of Various liver diseases (*Yakritroga*) under publication.
- St George A, Bauman A, Johnnet A, Farrel G, Chey T, George J. Independent effects of physical activity in Patients with non alcoholic fatty liver diseases, Hepatology 2009;50:68-76.
- Cheung K, Lee SS, Raman M. Prevalence and mechanisms of malnutrition in patients with advanced liver disease, and nutrition management strategies. Clin Gastroenterol Hepatol 2012; 10: 117-125 [PMID: 21893127 DOI: 10.1016/j.cgh.2011.08.016]
- Bengtsson M, Björnsson E. Gastrointestinal symptoms in patients with liver cirrhosis: associations with nutritional status and health related quality of life. Scand J Gastroenterol 2006; 41: 1464-1472 [PMID: 17101578 DOI: 10.1080/00365520600825117]
- Figueiredo FA, Perez RM, Freitas MM, Kondo M. Comparison of three methods of nutritional assessment in liver cirrhosis:

- subjective global assessment, traditional nutritional parameters, and body composition analysis. *J Gastroenterol* 2006; 41: 476-482 [PMID: 16799890 DOI: 10.1007/s00535-006-1794-1]
18. Sharma KK, Kumar KP, Effect of Yogic practices on liver functions parameters. *Yoga International Journal of Yoga and Allied Sciences* 2017; 6 (Suppl): 242
19. Shergill R, Syed W, Rizvi SA, Singh I. Nutritional support in chronic liver disease and cirrhotic. *World J Hepatol* 2018; 10(10): 685-694 Available from: URL: <http://www.wjgnet.com/1948-5182/full/v10/i10/685.htm> DOI: <http://dx.doi.org/10.4254/wjh.v10.i10.685>
20. Agnivesha. *Charaka Samhita*, Agnivesha treatise refined and annotated by Charaka, redacted by Dridhabala *Ayurveda Deepika* commentary by Chakrapanidatta, edited by Yadavji Trikamji Acharya . Varanasi: Chaukhamba Prakashana; reprint 2011, p.484. Tpg:738
21. Sushruta. *Sushruta Samhita with Nibandha Sangraha Vyakhya* by Dalhanacharya and Nyayachandrikakhyapanjikavyakhya by Gayadasa, edited by Vaidya Yadavaji Trikamji, 8th ed Varanasi: Chaukambha Krishnadas Academy; 2013. p.458.tpg

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