

## **A STUDY ON EVALUATION OF DIAGNOSTIC CRITERIA OF NON ALCOHOLIC FATTY LIVER DISEASE (NAFLD) THROUGH AYURVEDIC PERSPECTIVE WITH SPECIAL REFERENCE TO ASTHA VIDH PARIKSHA**

**Saiful Islam Bhuyan<sup>1\*</sup> and Hemen Kalita<sup>2</sup>**

<sup>1</sup>PG Scholar, Dept. of Roga Nidan, Govt. Ayurvedic College, Guwahati, Assam, India.

<sup>2</sup>Associate Professor, Dept. of Roga Nidan, Govt. Ayurvedic College, Guwahati, Assam, India.

Article Received on  
07 May 2022,

Revised on 27 May 2022,  
Accepted on 17 June 2022

DOI: 10.20959/wjpr20229-24609

### **\*Corresponding Author**

**Saiful Islam Bhuyan**

PG Scholar, Dept. of Roga  
Nidan, Govt. Ayurvedic  
College, Guwahati, Assam,  
India.

### **ABSTRACT**

Accumulation of fat in the liver more than 30% of the liver cells or exceeds 5% of its total body weight without having or intake of minimal alcohol is known as Non Alcoholic Fatty Liver Disease (NAFLD). This is a common cause of chronic Liver Disease. As the disease is mostly asymptomatic and the diagnosis is made only by the methods of some imaging modalities and biomarkers like USG (w/a), CT (abdomen), liver enzymes etc. So in maximum number of cases are diagnosed is done in routine examination or when the complication is developed. In a large population, like in India, where many peoples are below poverty line, it is not easy for screening of all the population

including asymptomatic individual. So a low cost and effective method of early diagnosis for the disease is the need of hour. So, an attempt has been done to established the relation between Non Alcoholic Fatty Liver Disease (NAFLD) with Astha Vidh Pariksha and Srotas Pariksha. The study was conducted at Govt. Ayurvedic College, Guwahati-14. From the data it was statistically found that Nadi, Mutra, Mala, Jihva and Srota Pariksha can be considered as a diagnostic criteria of NAFLD. On the other hand Annavaha, Rasavaha and Medavaha srota can be involved in NAFLD.

**KEYWORDS:** NAFLD, Astha Vidh Pariksha and Srotas Pariksha.

## INTRODUCTION

Fatty liver<sup>[1]</sup> indicates presence of excess fat in the liver cells. Fatty liver occurs when the fat content of the liver exceeds 5% of its total weight or more than 30% of the liver cells in a liver lobule have fat deposits. Fatty liver can cause two types of disease: Alcoholic fatty liver disease (AFLD) and Non alcoholic fatty liver disease (NAFLD). NAFLD is the most common chronic liver disease in many parts of the world including the developed countries.<sup>[2]</sup> In India it is about (9-32)% of general population. Most subjects with NAFLD are asymptomatic and the real prevalence is unknown because of reliable and applicable diagnostic tests are lacking. The disease is diagnosed only by the methods of some imaging modalities and biomarkers like USG(w/a),CT (abdomen), liver enzymes etc. So in maximum number of cases diagnosis is done in routine examination or when the complication is developed. In India, in large population, where many peoples are below poverty line, it is not easy for screening of all the population including asymptomatic individual. So a low cost effective method of early diagnosis for the disease is the need of hour. In Ayurvedia Astha Vidh Pariksha<sup>[3]</sup> and Srotas Pariksha<sup>[4]</sup> are the backbones of patient examination, which are based mostly on some clinical examination and few laboratory procedures having minimal financial involvement. In this study, known case of 60 patients of Non Alcoholic Fatty Liver Disease (NAFLD) was taken to established the relation between Non Alcoholic Fatty Liver Disease (NAFLD) with Astha Vidh Pariksha and Srotas Pariksha.

## MATERIALS AND METHODS

### Aim and Objectives

- To study Astha Vidh Pariksha in Non Alcoholic Fatty liver Disease (NAFLD) to evaluate some diagnostic Criteria.
- To study the involvement of specific srota dusti in Non Alcoholic Fatty Liver Disease (NAFLD) on 60 patients.

### Selection of patients

- All the patient who were pre-diagnosed or newly diagnosed as Fatty liver were selected from different OPD, IPD Dept. of Govt. Ayurvedic College and Hospital, Guwahati-14.

### Inclusion criteria

- All diagnosed case of Fatty Liver Disease confirm with USG (w/a) or CT (Abdomen) or Liver Biopsy were included for the study.

- Patient of all age group of both the sexes were included in study.
- History of alcohol intake < 21 units/week in women and <28 units/week in men were included.

### Exclusion criteria

- Known case of Alcoholic Fatty Liver Disease (AFLD) was excluded from the study.
- Known patient of sero positive HIV, HCV, HBs Ag etc. was excluded from the study.
- Seriously ill patient was excluded from the study.
- History of alcohol intake >21 units/week in women and >28 units/week in men were excluded

### Routine Examination and Assessment

- The full details of screening, history, physical examination of all patients were recorded in a specially designed proforma.
- All selective patients were clinically diagnosed by all clinical methods of examination as per Modern and Ayurveda.
- Special emphasis was given on Astha Vidh Pariksha and Srota Pariksha.

### Assesment criteria

#### 1. History of alcohol<sup>[5]</sup>

- History of alcohol intake along with quantity, frequency and type of alcohol was inquired.
- Non Alcoholic fatty liver disease (NAFLD) was considered when alcohol intake occurs below a threshold of 21units/week in women and 28units/week in men.

### Drinking amount of alcohol in an average drink

Alcohol type	% alcohol by volume	Amount	Units
Beer	3.5	440 mL (1 pint)	2
	9	440 mL (1pint)	4
Wine	10	125 mL	1
	12	750 mL	9
Vodka/rum	37.5	25 mL	1
Whisky/brandy	40	700 mL	28
* 1 unit = 8 g			

**2. Nadi pariksha<sup>[6]</sup>**

- Vataja Nadi: If the thrush of the pulse was felt more in index finger, then it was compared as Sarpa-Jaluka Nadi gati, which was characterized by fast, feeble, cold, light, thin, disappears on pressure and irregular.
- Pittaja Nadi: If the thrush was felt more in the middle finger, then it was compared as Kaka-Manduka Nadi gati, which was characterized by prominent, strong, high amplitude, hot, forceful and lifts palpating finger.
- Kaphaja Nadi: If the thrush of the pulse was felt in ring finger, then it was compared as Hamsa-Mayur Nadi gati, which was characterized by deep, slow, broad, wavy, thick, warm to cold and regular.
- Nadi examination was avoided in Just after taking bath, after taking food, after snehan therapy, during hunger, during thirst, during sleep or just after awakening.

**3. Mutra pariksha<sup>[7]</sup>**

- Mutra Pariksha was based on physical examination of urine, which includes colour, turbidity and deposits.
- Pandu varna mutra considered as pale white colours resembled with pollen grains of Keteki flower.
- Rakta varna mutra was reddish/ orange colours urine.
- Krishna Varna mutra considered as dark brownish colour urine.
- Phenayukta mutra was considered when frothiness was present in the surface of urine

**4. Mala pariksha<sup>[8]</sup>**

- Saam mala: When a pinch of stool was sink in water during Jalanimanjan pariksha then it was considered as Saam mala.
- Nirama mala: When the pinch of stool was floats in the water surface, then it was considered as Niraam mala.

**5. Jihva pariksha<sup>[9]</sup>**

- Niraam jihva: Tongue pink in colours, without any coating.
- Saam jihva: Whitish coated tongue which could not be removed by washing/ scraping.

**6. Shabda pariksha<sup>[10]</sup>**

- a. Shabda pariksha was assessed by percussion of abdomen.

- b. Guru shabda: dull sound was considered as Guru shabda. Hyper
- c. Sphuta shabda: hyper resonance
- d. Na-guru na- sphuta shabda: In between guru and sphuta shabda.

#### 7. Sparsha pariksha<sup>[11]</sup>

- Sparsha pariksha was assessed by palpation and measurement of body temperature.
- Ushna sparsha: >98.60F
- Sita sparsha: <97.20F
- Adrala: Moistness of skin.

#### 8. Drika pariksha<sup>[12]</sup>

- a. Drika pariksha was assessed by examination of eyes for colour, discharge, lusterness etc.
- b. Vataja Drika: Dryness of eyes.
- c. Pittaja Drika: Yellowish, reddish discolouration of conjunctiva.
- d. Kaphaja Drika: Watery and mucopurulent discharged of eyes.

#### 9. Akriti pariksha<sup>[13]</sup>

- a. Akriti pariksha was considered as nature of the person.
- b. Vataja prakriti: Physically and mental behaviour.
- c. Pittaja prakriti: Hungry and thirsty.
- d. Kaphaja prakriti: Well-built body and joints, tolerant to hardship.

#### 10. Srotas pariksha<sup>[14]</sup>

All Symptoms of Srota dusti as per Charak Samhita.

#### 11. Statistical data

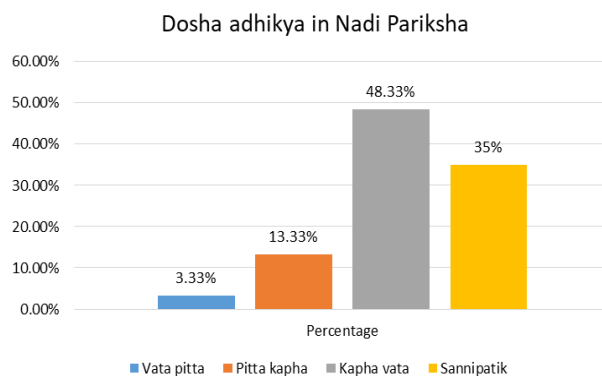
Prevalence of  $\geq 40\%$  statistical data after comparing with rest of the data was taken as criteria of assessment.

### OBSERVATION AND RESULT

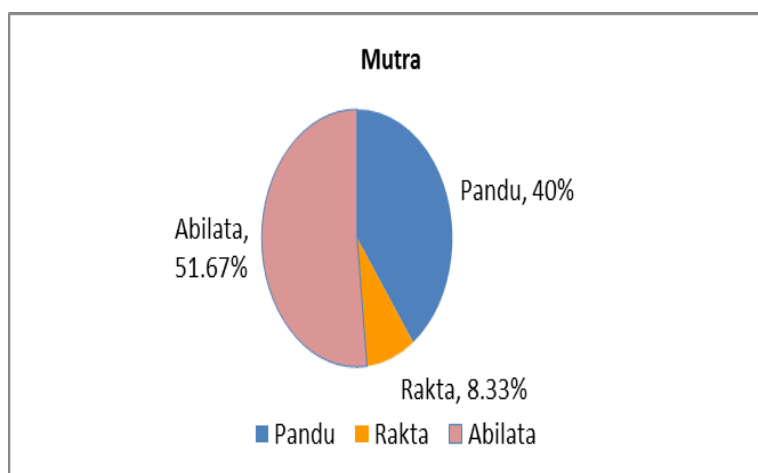
Observations in the study were made on the basis of demographic profile and clinical profile and laboratory investigation of 60 patients were selected for the study maintaining the inclusion and the exclusion criteria.

**Table no. 1: Showing Nadi Gati in Nadi Pariksha (n=60).**

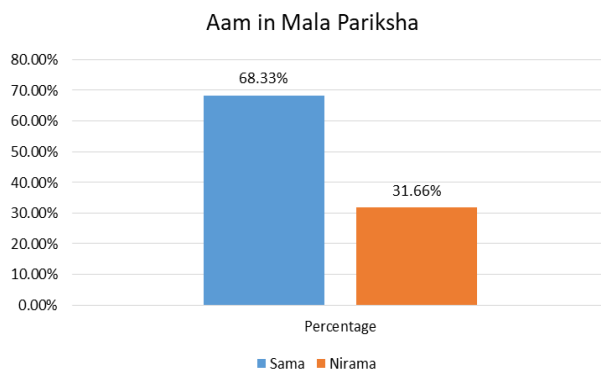
Sl. No	Nadi gati	No. of observation	Percentage
1	Vataja Nadi	2	3.33%
2	Pittaja Nadi	8	13.33%
3	Kaphaja Nadi	29	48.33%
4	Tridoshaja Nadi	21	35%

**Table no. 2: Showing nature of mutra in mutra pariksha (n=60).**

Sl. no.	Nature of mutra	No. of observation	Percentage
1	Pandu	24	40%
2	Rakta	5	8.33%
3	Phenayukta	31	51.67%

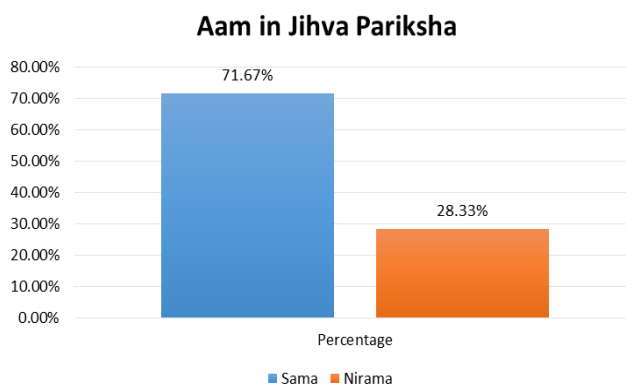
**Table no. 3: Showing presence of aam in mala pariksha (n=60).**

Sl. No.	Type of mala	No. of observation	Percentage
1	Sama	41	68.33%
2	Nirama	19	31.66%



**Table no. 4: Showing presence of aam in jihva pariksha (n=60).**

Sl. no.	Type of Jihva	No. of observation	Percentage
1	Sama	43	71.67%
2	Nirama	17	28.33%

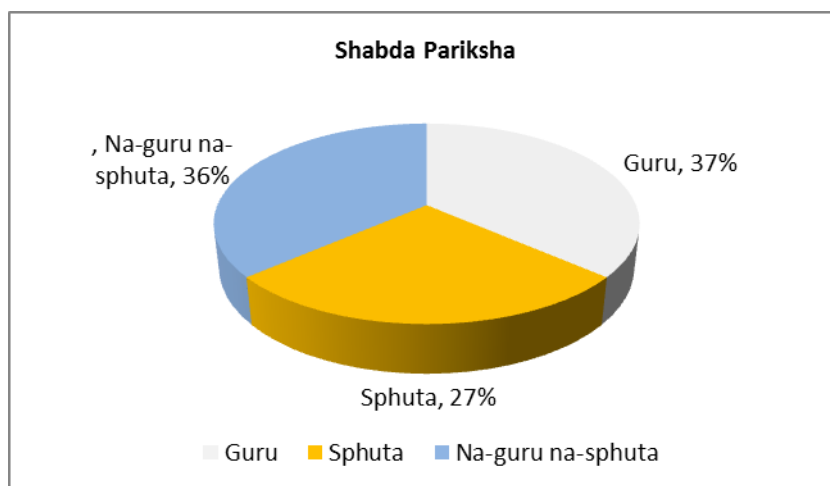


**Table no. 5a: Showing involvement of dosha in shabda pariksha (n=60).**

Sl. no.	Findings	Observation	Percentage
1	Involvement of specific dosha	11	18.33%
2	Involvement of no specific dosha	49	81.67%

**Table no. 5b: Showing involvement of dosha in shabda pariksha (n=11).**

Sl. No	Type of shabda	observation	Percentage
1	Guru	4	36.36%
2	Sphuta	3	27.27%
3	Na-guru na-sphuta	4	36.36%

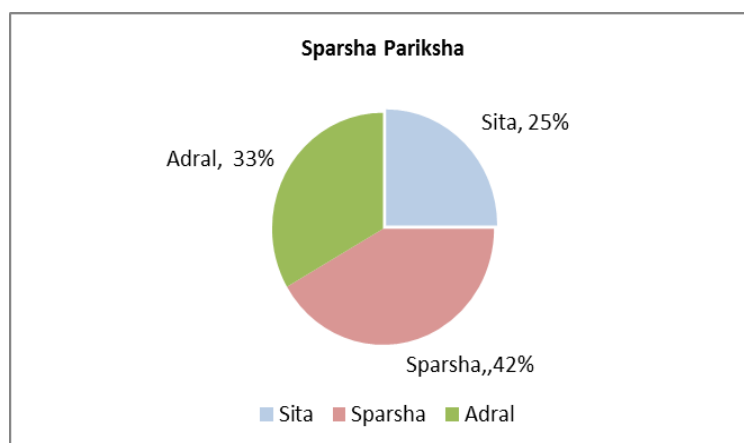


**Table no. 6a: Showing involvement of dosha in sparsha pariksha (n=60).**

Sl. No.	Findings	observation	Percentage
1	Involvement of specific dosha	12	20%
2	Involvement of no specific dosha	48	80%

**Table no. 6b: Showing involvement of specific dosha in sparsha pariksha (n=12).**

Sl. No.	Type of sparsha	No. of observation	Percentage
1	Sita	3	25
2	Ushma	5	41.67
3	Adral	4	33.33



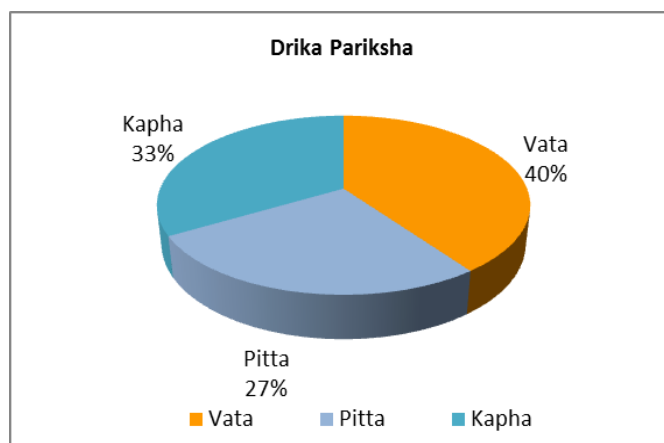
**Table No. 7a: Showing involvement of dosha in drika pariksha (n=60).**

Sl. No.	Findings	Observation	percentage
1	Involvement of specific dosha	15	25%
2	Involvement of no specific dosha	45	75%



**Table no. 7b: Showing involvement of specific dosha in drika pariksha (n=15).**

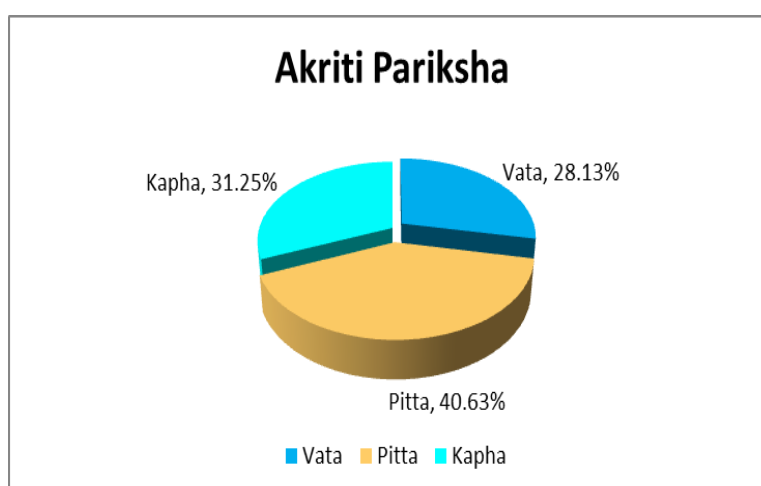
Sl. No	Dosha adhikya	No. of observation	Percentage
1	Vata	06	40%
2	Pitta	04	26.67%
3	Kapha	05	33.33%

**Table no. 8a: Showing involvement of dosha in akriti pariksha (n=60).**

Sl. No.	Findings	Observation	Percentage
1	Involvement of specific dosha	32	53.33%
2	Involvement of no specific dosha	28	46.67%

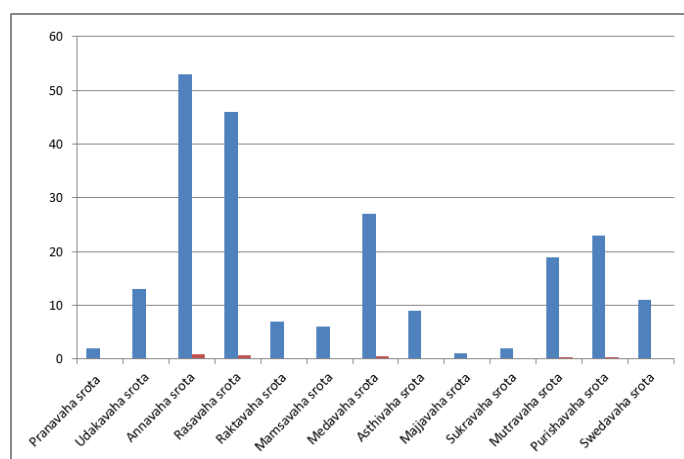
**Table no. 8b: Showing involvement of specific dosha in akriti pariksha (n=32).**

Sl. No.	Dosha adhikya	No. of observation	Percentage
1	Vata	7	21.88%
2	Pitta	8	25%
3	Kapha	17	53.12%



**Table no. 9: Showing involvement of srota in srota pariksha (n=60).**

Sl. no.	Srota	Observation	percentage
1	Pranavaha srota	2	3.33%
2	Udakavaha srota	13	21.67%
3	Annavaha srota	53	88.33%
4	Rasavaha srota	46	76.67%
5	Raktavaha srota	7	11.67%
6	Mamsavaha srota	6	10%
7	Medavaha srota	27	45%
8	Asthivaha srota	9	15%
9	Majjavaha srota	1	1.67%
10	Sukravaha srota	2	3.33%
11	Mutravaha srota	19	31.67%
12	Purishavaha srota	23	38.33%
13	Swedavaha srota	11	18.33%



## DISCUSSION

### i. Discussion on nadi gati in nadi pariksha

In the study Kaphaja Nadi gati was found maximum 48.33%.(29) The highest prevalence of Hamsa-Mayur nadi gati indicate NAFLD is a kaphaja disorder.

Since the cause of NAFLD according to modern is due to lipid accumulation in the liver is a result of a dysfunctional metabolism that includes Diabetes, hyperinsulinemia, dyslipidemia, and hypertension. In the current era, dysfunctional metabolism are due to poor diet habits and sedentary lifestyle, according to Ayurveda which causes by various factors like intake of ahit ahar including virudha ahar, guru, abhisandhi ahar and ahit vihar including divaswapna, ratrijagaran, chinta etc. So the present day, lifestyle disorder Diabetes, Hypertension, obesity are due to ahit ahar and vihar. For all the etiological factors, the patient suffers from mandagni and which ultimately lead to increase in kaphadosha in the body. Kapha dosha was

found as maximum, which was felt as Hams- Mayur Nadi gati. So from the study, it is found that Kaphaja Nadi gati is a diagnostic criteria of Non Alcoholic Fatty Liver Disease (NAFLD).

## **ii. Discussion of nature of mutra in mutra pariksha**

In the study it was found that maximum i.e 51.67% (31) were of Abhila mutra. Abhila mutra indicates NAFLD is a kaphaja disorder.

According to Ayurveda, mutra is formed from ahar rasa in pakwashaya. So the quality of mutra is directly related to quality of food intake. Since from the earlier data we have found that prevalence of non-vegetarian food among the selected patient. All non-vegetarian foods are mainly guru in nature, which generally aggravate kapha dosha in the body.

On the other hand, person who suffers from Diabetes, Hypertension obesity etc. generally have the tendency of taking the high calorie diet, which ultimately increases kapha dosha in pakwashaya. Moreover disease like Diabetes, Hypertension, obesity etc. their may be change in the urine like presence of turbidity, albuminuria, change in specific gravity etc. which according to Ayurveda can be considered as kaphaja mutra and during the observation this was seen as abhila mutra. So in this study, it is found that Abhila mutra is a diagnostic criteria of Non Alcoholic Fatty Liver Disease (NAFLD).

## **iii. Discussion on presence of aam in mala pariksha**

During the examination, it was observed that 68.33%(41) were of Saam and 31.66%(19) were of Niraam mala.

From the earlier data NAFLD having the multiple factors like lack of balance diet including excess quantity and less fibre and more carbohydrate, protein rich diet etc and lack of physical exercise leads to agnimandhya and because of agnimandhya aam is produced in the mala. According to -modern, stools having mainly two components:  $\frac{3}{4}$  is the liquid part and  $\frac{1}{4}$  is the solid part. Solid part contains undigested and unabsorbed food particle. For the weak digestive power the imbalance diet produces undigested and unabsorbed stool is common. The normal stool changes and in mala pariksha this was observed as Saam mala. So in this study, it was found that Saam mala is a diagnostic criteria of Non Alcoholic Fatty Liver Disease (NAFLD).

**iv. Discussion on presence of aam in jihva pariksha**

In this study it was found that 71.67% (43) were Saam and 28.33% (17) were Niraam jihva.

According to modern, coated tongue may be due to improper oral hygiene oral medication, addiction including smoking, tobacco products etc. and disease like Diabetes, Hypertension, these are nidana of the mandagni and mandagni produces aam and the best site to inspect the aam is Jihva. So in this study, it was found that Saam Jihva is a diagnostic criteria of Non Alcoholic Fatty Liver Disease (NAFLD).

**v. Discussion on shabda pariksha**

In this study it was observed that only 18.33% (11) were involved in specific dosha.

Among the involvement of specific dosha, the distribution of the data is almost equal. So no parameter can be directly considered as prevalence in NAFLD. This could be because of smaller sample size.

**vi. Discussion on sparsha pariksha**

In this study it was observed only 20% were involvement of specific dosha in Sparsha Pariksha. Among the involvement of specific dosha, the distribution of the data is almost equal. So no parameter can be directly considered as prevalence in NAFLD. This could be because of smaller sample size.

**vii. Discussion on drika pariksha**

From the study it was observed only 25% were involvement specific dosha in Drika pariksha. Among the involvement of specific dosha, the distribution of the data is almost equal. So no parameter can be directly considered as prevalence in NAFLD. This could be because of smaller sample size.

**viii. Discussion on akriti pariksha**

In this study it was observed 53.33% (32) were involved specific dosha in Akriti pariksha. Among the involvement of specific dosha, the distribution Kaphaja akriti were 53.12%.

This may be because of kaphaja akriti individual are more affected to the metabolic and lifestyle disorder.

**ix. Discussion on involvement of srota dusti in srota pariksha**

It is study it was observed that maximum 88.33% were suffers from Annahavaha srota dusti followed by Rasavaha srota dusti 76.67% and Medavaha srota dusti 45%. From the data it was observed that Annahavaha srota, Rasavaha srota, Medavaha srota are highly involved in NAFLD. Reason behind these srota may include all lifestyle disorder and intake of high calorie diet and sedentary habit. This make the digestive activity weak which may affect Annahavaha srota, Rasavaha srota, Medavaha srota. So from the study it can be concluded that Annahavaha srota, Rasavaha srota, Medavaha srotas are highly involved in NAFLD.

**CONCLUSION**

The following conclusion can be drawn from the study:

- Kaphaja Nadi gati is found as a diagnostic criteria of Non Alcoholic Fatty Liver Disease (NAFLD).
- Abhila Mutra is found as a diagnostic criteria of Non Alcoholic Fatty Fiver Disease (NAFLD).
- Saam Mala is found as diagnostic criteria of Non Alcoholic Fatty Liver Disease (NAFLD).
- Saam Jihva is found as a diagnostic criteria of Non Alcoholic Fatty Liver Disease (NAFLD).
- Diagnostic criteria of Shabda, Sparsha and Drik pariksha could not be commented due to insufficient respective sample size.
- Kaphaja Akriti is found as a diagnostic criteria of Non Alcoholic Fatty Liver Disease (NAFLD).
- Annahavaha srota, Rasavaha srota, Medavaha srota are involved in every case of Non Alcoholic Fatty Liver Disease (NAFLD).
- The present study was carried out only in small number of patient. Further study need in a large number of patient so that the result will be more accurate.

**REFERENCES**

1. Mathew K Goerge, Aggarwal Praveen. Disease of the liver and biliary system, Prep mannual for undergraduates Fourth edition, page, 2012; 399.
2. Kasper, Fauci, Hauser, Longo, Jameson, Loscalzo. Liver and biliary tract disease, Harrison's Principles of Internal Medicine, 2015; (2), 19: 2054.

3. Vaidhya Sri lakshmipati Sastri (editor). Atho roginam Asthamsthana Nirakshan. Yoga Ratnakar, 2005; 5: 1.
4. Sri Satya Narayana Sastri (editor). SrotaVimanadhayaya. Charak Samhita of Agnivesh, 2013; 1: 706-712, 3-5.
5. Colledge. Nicki R, Walker Brian R, Ralston Stuart H. Liver and biliary tract disease, Davidson's Principles & Practice of Medicine, 2010; 21: 954.
6. Vaidhya Sri lakshmipati Sastri (editor). Atho Nadipariksha. Yoga Ratnakar, 2005; 7: 13.
7. Vaidhya Sri lakshmipati Sastri (editor). Atho Mutrapariksha. Yoga Ratnakar, 2005; 10: 4.
8. Acharya YT, editor. Ch. Reprint ed. Varanasi: Chaukhamba Prakashana; Charak Samhita of Agnivesha, Chikitsasthana, 2007; 466: 15 – 14. [Google Scholar]
9. Vaidhya Sri lakshmipati Sastri (editor). Atho Jihvapariksha. Yoga Ratnakar, 2005; 15: 1-3.
10. Vaidhya Sri lakshmipati Sastri (editor). Atho Shabdapariksha. Yoga Ratnakar, 2005; 13: 1.
11. Vaidhya Sri lakshmipati Sastri (editor). Atho Sparshapariksha. Yoga Ratnakar, 2005; 13: 1.
12. Vaidhya Sri lakshmipati Sastri (editor). Atho Drikapariksha. Yoga Ratnakar, 2005; 14: 1-2.
13. Vaidhya Sri lakshmipati Sastri (editor). Atho Prakritipariksha. Yoga Ratnakar, 2005; 20: 1-6.
14. Sri Satya Narayana Sastri (editor). SrotaVimanadhayaya. Charak Samhita of Agnivesh, 2013; 1, 706-716, 3-7.