

**A STUDY ON NEERKURI NEIKKURI DIAGNOSTIC METHODOLOGY OF
SIDDHA SYSTEM IN KALLEERAL NOI (LIVER DISEASE)**



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Submitted by

DR. M. A. SINEKHA,
PG Scholar,
National Institute of Siddha,
Tambaram Sanatorium, Chennai-47.

Under the guideship of

DR. M. RAMAMURTHY, M. D. (S), Ph. D.,
Lecturer,
National Institute of Siddha,
Tambaram Sanatorium, Chennai-47.

Study Centre



Department of Noi Naadal,
National Institute of Siddha,
Tambaram sanatorium, Chennai – 47.

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DECLARATION BY THE CANDIDATE

I hereby declare that this Dissertation entitled “**A Study On Neerkuri Neikkuri diagnostic methodology of Siddha system in Kalleeral noi (Liver disease)**” is a bonafide and genuine research work carried out by me under the guidance of **Dr. M. Ramamurthy, M.D (s), Ph. D,** Dept of Noi Naadal, National Institute of Siddha, Chennai – 47, and the dissertation has not formed the basis for the award of any degree, Diploma, Fellowship or other similar title.

Place: Chennai – 47

Signature of candidate

Date

(Dr. M. A. Sinekha)

BONAFIDE CERTIFICATE

Certified that I have gone through the dissertation submitted by **Dr. M. A. Sinekha (Reg. No: 321715204)** a student of final year M.D (S), Branch - V, Department of Noi Naadal, National Institute of Siddha, Tambaram Sanatorium, Chennai – 47 and the dissertation work has been carried out by the individual only. This dissertation does not represent or reproduce the dissertation submitted and approved earlier.

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Signature of the Guide with seal

Signature of the HOD with seal

Signature of the Director with seal

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1. INTRODUCTION

‘Thalankatti Indha Sadamana Iymbootham’

-Thirumoolar

The word “Siddha” means ever sure, ever ready and everlasting derivatively. This siddha system of medicine is one of the ancient systems of medicine. The unique nature of this system is its continuous service to humanity for more than five thousand years in combating diseases and in maintaining its physical, mental, and more health. It is mainly based on 96 thathuvam among them Tri-humoural theory is mainly used for classifying, diagnosing a disease and treating a patient. The ailments can be diagnosed with “*Piniyarimuraimai*”^[1]. which contains Envagaithervu (eight-fold examination) an important tool such as *Naadi*, *Sparisam*, *Naa*, *Niram*, *Mozhi*, *Vizhi*, *Malam* and *Moothiram*. Siddha system of medicine is having a well-established protocol for diagnosing diseases. This system of medicine emphasizes that medical treatment is oriented not merely to diseases and also to restoring the balance to the mind and body system.

In Envagai thervu, *Siruneer Parisothanai* (Urine examination) elucidated by Sage Theraiyar has been considered noteworthy in diagnosing the ailment next to Naadi examination. Siruneer Paritchai will be performed in two ways – *Neerkuri* and *Neikkuri*. Neerkuri which commonly dealt with physical characteristics of urine and is headed under five domains such as *Niram (Colour)*, *Nurai (Froth)*, *Manam (Odour)*, *Nirai (Specific gravity)* and *Enjal (Deposits)*. Neikkuri (*Oil on Urine Sign*) is conducted with a drop of gingelly oil instilled over the urine surface and noted for the results.

The *Neikkuri* results show either the spreading pattern or the non-spreading nature of the instilled oil drop staying as such. The spreading nature of oil in Neikkuri shows different patterns with water the space of which is occupied by different solutes. The individual patterns obtained according to the affected disease. It is stated, Vatha diseased urine shows pattern of Serpentine, Pitha diseased urine sample shows appearance of Ring and Kabha diseased urine results in Pearl formation. The Occurrence of these shapes are based on variations in surface tension and specific gravity of urine^[2]. In this study, the diagnosing the liver pathology through formation

of specific patterns of oil over the urine sample of patient with liver diseases which is named as Kalleeral noi as per Siddha literatures.

Liver, is a lobed glandular organ present in the abdomen of vertebrates, has the enormous task of maintaining the body's metabolic homeostasis. This study shows that the diseased liver and its manifestation in urine which will be documented and analysed. Liver is a large organ, that cleans the blood and produces bile in the body. According to Siddha pathology, liver disorders are caused due to deranged pitha humor (Pitha dosham - aggravated/stagnated) ^[3]. Kalleeral noi is correlated with those of bilious disorders. The major clinical syndromes of liver diseases are hepatic failure, cirrhosis, portal hypertension and cholestasis. Liver diseases are caused by toxic chemicals, drugs, viral infections (hepatitis A, B, C, D, E), excess alcohol intake etc., and are ranked among the top ten killer diseases in India Liver diseases accounts for approximately 2 million deaths per year worldwide, 1 million due to complications of cirrhosis and 1 million due to viral hepatitis and hepatocellular carcinoma ^[4].

Any pathological conditions of liver as a result of chronic and excessive alcohol consumption leading to a spectrum of conditions ranging from asymptomatic fatty liver to alcohol hepatitis to end- stage liver failure with jaundice, coagulopathy and encephalopathy. Though the diagnosis of Liver pathology can be made from history and physical examination, there are some laboratory investigations to confirm it such as lipid profile, liver function test, HbsAg, HBeAg, viral load, Gamma GT, prothrombin time. Lot of investigations available in contemporary medicine as the diagnostic tool. In Siddha system of medicine, Neerkuri and Neikkuri analysis is one among the tool in Envagai thervu (Eight-fold examination).

This study aims to document the diagnostic patterns of Neikkuri for Liver diseases particularly Hepatitis and jaundice which may provide a clue for identification of deranged humours in the above disease through Neikkuri examination, if successfully established. This study offers greater advantages of diagnosing the deranged humours in liver diseases as this is a non-invasive and cost-effective tool. Chronic liver diseases cause significant morbidity and mortality worldwide. So, it is useful if a standard tool to document and diagnosis of liver pathology by siddha diagnostic techniques of Neikkuri. The finding may helpful in the field of Research and diagnosis through Urine examination.

2. AIM AND OBJECTIVES

AIM

To establish a Neikkuri diagnostic tool for *Kalleeral Noi* (Liver disease).

OBJECTIVES

- **PRIMARY OBJECTIVE:**

To document the patterns of Neikkuri in *Kalleeral Noi* (Liver disease).

- **SECONDARY OBJECTIVE:**

To observe for any significant in Neikkuri pattern which may provide a clue in the diagnosis, prognosis or its complications.

3. REVIEW OF SIDDHA BASIC PRINCIPLES

The Siddhars explained all body functions relative to the happenings in the universe. They found certain phenomena common to both man and nature. *Tridosha* is the physiological basis around which practical Siddha system revolves. Three basic functions operating through a constant interplay between the environment and the individual are thought to be required to maintain the integrity of a living system.

The body is made up of tissues – physical constituents (*Udal thathus*), waste products (*Malam*) and biological humors or physiological constituents or energetic forces (*Uyir thathu*). The three biological humors in the normal state are called as Life constituent – *Uyir thathu*. When the normalcy is altered the same is called “*thodam*”.

The normal function of the humors along with the various tissues of the body is to enable proper physical, mental and intellectual activity and remove any unnecessary or waste products from the body. The humors influence all movements, all transformations, all sensory functions and many other activities in the human body and mind. These humors govern psycho – biological changes in the body and physio – pathological changes too.

The three humors as described in the *Siddha* medicine is a golden line continuous in physiology, pathology and treatment or management. These principles are explained in the following headings:

- ❖ *Sugarana nilai* in siddha medicine (physiology)
- ❖ *Kugarana nilai* in Siddha medicine (pathology)
- ❖ Diagnostic methodology
- ❖ Review of literature about *Neerkuri* and *Neikkuri*.

3. A. SUGARANA NILAI IN SIDDHA MEDICINE(PHYSIOLOGY)

The five basic elements, namely *Aagayam* (Space), *Vaayu* (Air), *Thee* (Fire), *Neer* (Water), and *Mann* (Earth) are the building blocks of all the physical and subtle bodies existing in this whole universe. These are called as the ‘*Adippadai boothams*’ (Basic Elements) (or) ‘*Panchaboothams*’.

These five elements altogether constitute the human body and also the origin of other materialised objects, explained as *Pancheekaranam* (Mutual Intra Inclusion). None of these elements could act independently by themselves. They could act only in co-ordination with other four elements. All the living creatures and the non-living things are made up of these five basic elements.

உலகம் பஞ்ச பூதம்

"நிலம் நீர்தீவளி விசும்போடைந்தும்

கலந்தமயக் கமுலகம் மாதலின்"

-தொல்காப்பியம்

தேகம் பஞ்ச பூதம்

"தலங்காட்டி இந்தச் சடமான ஐம்பூதம்

நிலங்காட்டி நீர் காட்டி நின்றிடுந் தீ காட்டி

வலங்காட்டி வாயுவால் வளர்ந்தே இருந்த

குலங்காட்டி வானில் குடியாய் இருந்ததே"

-பதினெண் சித்தர் நாடி சாஸ்திரம்

As per the above lines, the universe and the human body are made of five basic elements.

THE 96 BASIC PRINCIPLES (96 THATHUVAM):

According to siddha system of medicine, ‘*Thathuvam*’ is considered as a science that deals with basic functions of the human body. *Siddhars* described 96 principles as the basic constituents of human body that include physical, physiological, psychological and intellectual components of an individual. These 96 *Thathuvams* are considered to be the cause and effect of our physical and mental well-being.

THE UYIR THATHUKKAL:

The physiological units of the Human body are *Vali (Vatham)*, *Azhal (Pitham)* and *Iyyam (Kabam)*. They are also formed by the combination of the five elements.

Vatham = Vali+Aagayam: Creative force

Pitham = Thee: Force of preservation

Kabam = Mann+Neer: Destructive force

As per the above lines the Universe and the human body are made of five elements. If these three humors are in the ratio 1: ½: ¼ in equilibrium or in normal condition, then they are called as the Life forces.

SITES OF UYIR THATHUKKAL:

"பொங்கிய தைந்துக்குள் பொல்லாதது இம்முன்றுதான்
தங்கிய வாயு சமத்தன் மகாவாதம்
பங்கிய வன்னியால் பகுந்தது பித்தமே
பகுந்த சலத்தில் பரிசிக்கும் நல்லையம்
வகுந்த இம்முன்றால் வளர்ந்தது நோயெல்லாம்
அகுந்தது தானறிந்து அளவிட்ட யோகிகள்
மகிழ்ந்தே யிதில் நின்ற மயக்கம் அறிவாரே"

- பதினெண் சித்தர் நாடி சாஸ்திரம்

FORMATION OF UYIR THATHUKKAL:

முவகை நாடியும் உயிர் தாதுவும்:

"தாது முறையே தனிஇடை வாதமாம்
போதுறு பின்கலை புகன்றது பித்தமாம்
மாது சுழுமுனை வழங்கிடும் ஐயமாம்
ஓது முறை பார்த்து உணர்ந்தவர் சித்தரே"

- பதினெண் சித்தர் நாடி சாஸ்திரம்

மூவகை வாயுவும் உயிர் தாதுவும்

"உணர்ந்த அபானன் உறும் அந்த வாதத்தில்
புணர்ந்த பிராணன் புகும் அந்தப் பித்தத்தில்
அணைந்த சமானன் அடங்கும் கபத்தோடு
இணைந்திவை மூன்றுக்கு எடுத்த குறி ஒன்றே"

- பதினெண் சித்தர் நாடி சாஸ்திரம்

Vali = Abanan + Idakalai

Azhal = Piranan + Pinkalai

Iyyam = Samanan + Suzhumunai

I. VALI (VATHAM):

A) THE NATURE OF VALI:

Vali is soft, fine, and the temperature is (coolness and hotness) could be felt by touch.

B) SITES OF VALI:

"நெளிந்திட்ட வாதமபானத்தைப் பற்றி
நிறைந்திடையைச் சேர்ந்துந்திக் கீழே நின்று
குளிந்திட்ட மூலமது; டெழுந்து காமக்
கொடியிடையைப் பற்றியெழுங் குணத்தைப் பாரே
நிணமான பொருத்திடமும் ரோமக் காலும்
நிறைவாகி மாங்கிசமெல் லாம்பரந்து"

- வைத்திய சதகம்

According to *Vaithya Sathakam*, *Vali* dwells in the following places: They are *Idakalai*, *Abanan*, Umbilicus, rectum, faecal matters, abdomen, anus, bones, hip joint, navel plexus, joints, hair follicle and muscles.

"அறிந்திடும் வாத மடங்கு மலத்தினில்"

- திருமூலர்

"நாமென்ற வாதத்துக் கிருப்பிடமே கேளாய்
நாபிக்குக் கீழென்று நவில லாகும்"

- யூகி முனிவர்

According to Sage *Thirumoolar* and *Yugi muni*, the places of *Vatham* are the anus and below the naval region.

C) THE PROPERTIES OF VALI:

“ஓழுங்குடனே தாதேழ் மூச்சோங்கி இயங்க
எழுச்சிபெற எப்பணியுமாற்ற எழுந்திரிய
வேகம் புலன்களுக்கு மேவச் சுறுசுறுப்பு
வாகளிக்கும் மாந்தர்க்கு வாயு”

- மருத்துவத் தனிப்பாடல்

d) THE FUNCTIONS OF VALI:

1. To stimulate the respiration
2. To activate the body, mind and the intellect.
3. To expel the fourteen different types of natural reflexes.
4. To activate seven physical constituents in functional co- ordination.
5. To strengthen the five sense organs.

In the above process *Vatham* plays a vital role to assist the body functions.

II. AZHAL (PITHAM):

a) THE NATURE OF AZHAL:

The nature of *Azhal* is atomic. It is sharp and hot. The ghee becomes watery, salt crystallizes and jaggery melts because of heat. The heat of *Azhal* is responsible for many actions and their reactions.

b) SITES OF AZHAL:

“தானான பித்தம் பின் கலையைப் பற்றிச்
சாய்வான பிராணவாயு வதனைச் சேர்ந்து
ஊனான நீர்ப்பையி லணுகி மூலத்
துதித்தெழுந்த வக்கினியை யுறவு செய்து
மானேகே ளிருதயத்தி லிருப்பு மாகி
கோனான சிரந்தனிலே யிறக்க மாகி
கொண்டுநின்ற பித்தநிலை கூறி னோமே”

- வைத்திய சதகம்

According to *Vaithiya Sathagam, Pingalai, Pranana*, urinary bladder, stomach, and heart are the places where *Azhal* sustains. In addition to the above places, the umbilicus, epigastric region, stomach, sweat, saliva, blood, essence of food, eyes and skin are also the places where *Azhal* sustains. Sage *Yugi* says that the *Azhal* sustains in urine and the places below the neck.

c) THE CHARECTERS OF AZHAL:

Azhal is responsible for the digestion, vision, maintenance, of the body temperature, hunger, thirst, taste etc. Its other functions include thought, knowledge, strength and softness.

d) THE FUNCTIONS OF AZHAL:

1. Maintenance of body temperature.
2. Produces reddish or yellowish colour of the body.
3. Produce heat energy on digestion of food.
4. Produces sweating.
5. Induces giddiness.
6. Produces blood and the excess blood are let out.
7. Gives yellowish coloration to the skin, eyes, feces and urine
8. Produce anger, heat, burning sensation, inaction and determination.
9. Gives bitter or sour taste.

e) THE TYPES OF AZHAL:

1. Anal Pitham or Pasaka Pitham - Aakkanal –The fire of digestion.

It lies between the stomach and the intestine and causes digestion and dries up the moist ingested substance.

2. Ranjaga Pitham - Vannaeri –Blood promoting fire

The fire lies in the stomach and gives red colour to the chyme and produces blood. It improves blood.

3. Saathaga Pitham – Aatralanki –The fire of energy.

It gives energy to do the work.

4. Alosaga Pitham – Nokku Azhal –The fire of Vision.

It lies in the eyes and causes the faculty of vision. It helps to visualize things.

5. Prasaka Pitham – Uloli thee –The fire of brightness.

It gives colour, complexion and brightness to the skin.

III. *IYYAM* (*KABAM*):

a) The Nature of *Iyyam*:

Greasy, cool, dull, viscous, soft and compact are the nature of *Iyyam*.

b) The Sites of *Iyyam*:

“கூறினோஞ் சிலேத்மமது சமான வாய்வைக்

கொழுதியே சுழிமுனையைப் பற்றி விந்தில்

கீறியே சிரசிலாக் கினையைச் சேர்ந்து

சிங்குவையிண் ணாக்குநிண மச்சை ரத்தம்

மீறியே நிறங்கோண நரம் பெலும்பில்

மேவியதோர் மூலைபெருங் குடலிற் கண்ணில்

தேறியதோர் பொருத்திடங்க ளெல்லாஞ் சேர்ந்து

சிலேத்மமது வீற்றிருக்குந் திடங் கண்டாமே”

-வைத்திய சதகம்

Head, tongue, eyes, nose, throat, thorax, bone, bone marrow, joints, blood, fat, sperm and colon are the seats of *Iyyam*. It also lies in the stomach, spleen, the pancreas, chyle and lymph.

c) The Properties of *Iyyam*:

Stability, greasiness, formation of joints, the ability to withstand hunger, thirst, sorrow and distress are the qualities. It also helps to withstand sufferings.

d) The Functions of *Iyyam*:

Greasiness, strength, roughness, knowledge, cool, growth, heaviness of bone, restriction of joint movements, pallor, indigestion, deep sleep and to have a sweet taste in tongue are the function of *Iyyam*. The skin, eyes, faces and urine are white in color due to the influence of *Iyyam*.

e) The Types of *Iyyam*:

1. *Avalambagam* - *Ali Iyyam*:

Heart is the seat of *Avalambagam*. It controls all other types of *Iyyam*.

2. *Kilethagam* - *Neerpi Iyyam*:

Its location is stomach. It gives moisture & softness to the ingested food.

3. *Pothagam* - *Suvaikaan Iyyam*:

Its location is tongue. It is responsible for the sense of taste.

4. *Tharpagam - Niraivu Iyyam:*

It gives coolness to the vision.

5. *Santhigam - Ondri Iyyam:*

It gives lubrication to the bones particularly in the joints.

THE UDAL THATHUKKAL (PHYSICAL CONSTITUENTS)

Udal Thathukkal is the basic physical constituents of the body. They are also constituted by the Five Elements.

1. *Saaram:* This gives mental and physical perseverance.

2. *Senneer:* Imparts colour to the body and nourishes the body

3. *Oon:* It gives shape to the body according to the physical activity and cover the bones.

4. *Kozhuppu:* It lubricates the joints and other parts of the body to function smoothly.

5. *Enbu:* Supports the frame and responsible for the postures and movements of the body.

6. *Moolai:* It occupies the medulla of the bones and gives strength and softness to them.

7. *Sukkilam / Suronitham:* It is responsible for reproduction. These are the seven basic constituents that form the Physical Body. The Bones are predominantly formed by the Earth component, but other elements are also present in it. All the three humors *Vali*, *Azhal* and *Iyyam* present in these 7 constituents. The intake food converted to *Udal Thaathu* in which the intake food is converted to *Saaram* in the first day, and then it converted to *Senneer* in the second day, *Oon*, *Kozhuppu*, *Enbu*, *Moolai* and *Sukkilam / Suronitham* respectively in the following days. So, in the seventh day only the intake food goes to the *Sukkilam / Suronitham*.

3. B. KUGARANA NILAI IN SIDDHA MEDICINE (PATHOLOGY)

This is the first medical system to emphasize health as the perfect state of physical, psychological, social and spiritual components of human being. The condition of the human body in which the dietary habits, daily activities and the environmental factors influences to keep the three humors in equilibrium is considered as healthy living.

DISEASE:

Disease is also known by other names such as sickness, distemper, suffering and ailments, distress of mind, chronic disease and dreadful illness.

1. THE CHARACTERISTICS FEATURE OF DISEASE:

Diseases are of two kinds:

- i. Pertaining to the body
- ii. Pertaining to the mind according to the variation of the three humors.

CAUSES OF DISEASE:

Excepting the disease caused by our previous births, the disease is normally caused by the disparities in our food habits and actions. This has been rightly quoted in the following verses by Sage *Thiruvalluvar*,

“மிகினும் குறையினும் நோய்செய்யும் நூலோர்
வளிமுதலா எண்ணிய மூன்று”

- திருவள்ளுவர்

The food and actions of a person should be in harmony with the nature of his body. Any increase or decrease in a humor viz. *Vatham*, *Pitham*, *Kabam* leads to the derangement of the three humors. The acceptance of food means the taste and quality of the food eaten and a person's ability to digest. “Action” means his good words, deeds or bad actions. According to *Thiruvalluvar*, the disease is caused due to the increase or decrease of three humors causing the upset of equilibrium. So, disease is a condition in which there is derangement in the five elements, which alters the three humors, reflected in turn in the seven physical constituents. The change could be an increase or decrease in the humors. This shows the following signs as per vitiation of the individual humor.

QUANTITATIVE CHANGES OF *UYIR THATHUKKAL*:

Table 4.1: Quantitative changes of *Uyir Thathukkal*

| HUMOUR | INCREASED | DECREASED |
|---|---|---|
| <i>VALI</i> <i>(Vatham)</i> | Wasting, Blackish discoloration, Affinity to hot food, Tremors, Distended abdomen, Constipation, Weakness, Insomnia, Weakness in sense organs, Giddiness and laziness. | Body pain, Feeble voice, And diminished capability of the brain, decreased Intellectual Quotient, Syncope and Increased <i>Kabam</i> condition. |
| <i>AZHAL</i> <i>(Pitham)</i> | Yellowish discoloration of Conjunctiva, skin, urine and Feces, Polyphagia, Polydipsia, Dyspepsia, Burning sensation all over the body and decreased sleep. | Loss of appetite, Cold, Pallor and Features of increased <i>Kabham</i> . |
| <i>IYYAM</i> <i>(Kabam)</i> | Loss of appetite, Excessive salivation, Diminished activity, Heaviness, Pallor, cold, Decreased physical constituents, dyspnea, Flatulence, Cough and Excessive sleep. | Giddiness, Dryness of the Joints and Prominence of Bones, Profuse sweating in The hair follicles and Palpitation. |

UDAL THATHUKKAL

Table 4.2: Changes occurring in *Udal Thaathukkal*

| UDAL THATHUKKAL | INCREASED FEATURES | DECREASED FEATURES |
|------------------------------|--|---|
| SAARAM | Loss of appetite, excessive salivation, diminished activity, heaviness, pallor, cold, decreased physical constituents, dyspnea, flatulence, cough & excessive sleep. | Dryness of skin, tiredness, loss of weight, lassitude and irritability while hearing louder sounds. |
| SENNEER | Boils in different parts of the body, splenomegaly, tumours, pricking pain, loss of appetite, hematuria, hypertension, reddish eye and skin, leprosy & jaundice. | Affinity to sour and cold food, nervous, debility, dryness and pallor. |
| OON | Tubercular adenitis, venereal diseases, extra growth around neck, cheeks, abdomen, thigh and genitalia. | Lethargic sensation, pain in joints, muscle wasting in mandibular region, gluteal region, penis and thighs. |
| KOZHUPPU | Identical feature of increased flesh, tiredness, dyspnea on exertion, extra musculature in gluteal region, external genitalia, chest, abdomen and thighs. | Loins pain, splenomegaly and emaciation. |
| ENBU | Excessive ossification and dentition | Joint pain, falling of teeth, Falling and splitting of hairs and nails. |
| MOOLAI | Heaviness of the body and eyes, swollen Interphalangeal joints, oliguria and non-healing ulcers. | Osteoporosis & blurred vision. |
| SUKKILAM / SURONITHAM | Increased sexual activity, urinary calculi. | Dribbling of <i>Sukkilam</i> / <i>Suronitham</i> or <i>Senner</i> during coitus, pricking pain in the testis, inflamed & contused external genitalia. |

SUVAIKAL(TASTE)

Table 4.3: Suvaikal (Taste)

| TASTES | DISEASES DUE TO HIGH INTAKE |
|------------------|---|
| <i>Inippu</i> | Develops obesity, excessive fat, increased mucous secretion, indigestion, diabetes, cervical adenitis, increased <i>Kabam</i> and its diseases. |
| <i>Pulippu</i> | Develops nervous weakness, dull vision, giddiness, anemia, dropsy, dryness of tongue, acne, blisters etc., |
| <i>Uppu</i> | Ageing, hair loss, leprosy, dryness of tongue, debility. |
| <i>Kaippu</i> | Increased dryness of tongue, defective spermatogenesis, body weakness, dyspnea, lassitude, tremor, back and hip pain |
| <i>Kaarppu</i> | Dryness of tongue, generalized malaise, tremor, back pain, lassitude etc. |
| <i>Thuvarppu</i> | Abdominal discomfort, chest pain, tired |

KAALAM:

Table 4.4: Changes in climatory condition of the external world has its corresponding effects on the human organs

| KAALAM | KUTTRAM | STATE OF KUTTRAM |
|--|--|---|
| <i>Kaar kaalam</i> (Rainy: <i>Aavani-Puratasi</i> (Aug 16-Oct-15) | <i>Vatham</i> ↑↑ <i>Pitham</i> ↑ <i>Kabham</i> (--) | Ectopic escalation In situ escalation Restitution |
| <i>Koothir kaalam</i> (Post rainy: <i>IypasiKarthigai</i> Oct 16-Dec-15) | <i>Vatham</i> (--) <i>Pitham</i> ↑↑ <i>Kabham</i> (--) | Restitution Ectopic escalation Restitution |
| <i>Munpani kaalam</i> (Winter: <i>Markazhi-Thai</i> (Dec 16-Feb-15) | <i>Vatham</i> (--) <i>Pitham</i> (--) <i>Kabham</i> (--) | Restitution Restitution Restitution |
| <i>Pinpani kaalam</i> (Post winter: <i>MasiPanguni</i> (Feb-16-Apr-15) | <i>Vatham</i> (--) <i>Pitham</i> (--) <i>Kabham</i> ↑↑ | Restitution Restitution In situ escalation |
| <i>Elavenir kaalam</i> (Summer: <i>ChithiraiVaikasi</i> (Apr 16-Jun 15) | <i>Vatham</i> (--) <i>Pitham</i> (--) <i>Kabham</i> ↑↑ | Restitution Restitution Ectopic escalation |
| <i>Mudhuvenir kaalam</i> (Post summer: <i>Aani-Aadi</i> (June16-Aug-15) | <i>Vatham</i> ↑ <i>Kabham</i> (--) | In situ escalation Restitution |

THINAI:

Table 4.5: Thinai

| THINAI | LAND | HUMORS |
|-----------------|---|-------------------------------------|
| Kurunji | Mountain and its surroundings - Hilly terrain | Kabam |
| Mullai | Forest and its surroundings - Forest ranges | Pitham |
| Marutham | Farm land and its surroundings – cultivable lands | All three humors are in equilibrium |
| Neithal | Sea shore and its adjoining areas – coastal belt | Vatham |
| Paalai | Desert and its surroundings – Arid zone | All three humors are affected |

ALTERATION IN 14 REFLEXES (14 VEGANGAL):

There are 14 natural reflexes involved in the physiology of normal human being. If willfully restrained or suppressed, the following are resulted.

1. Vatham (Flatus):

This urge should not be suppressed. If it is suppressed it leads to chest pain, epigastric pain, abdominal pain, ache, constipation, dysuria and indigestion predominate.

2. Thummal (Sneezing):

If restrained, it leads to headache, facial pain, low back pain and neurotic pain in the sense organs.

3. Siruneer (Urine):

If restrained, it leads to urinary retention, urethral ulcer, joint pain, pain in the penis, gas formation in abdomen.

4. Malam (Faeces):

If restrained, it leads to pain in the knee joints, headache, general weakness, flatulence and other diseases may also originate.

5. Kottavi (Yawning):

If restrained, it leads to indigestion, leucorrhoea, and abdominal disorders.

6. Pasi (Hunger):

If restrained, it leads to the tiredness of all organs, emaciation, syncope, apathetic face and joint pain.

7. Neer Vetkai (Thirst):

If restrained, it leads to the affection of all organs and pain may supervene.

8. Kaasam (Cough):

If it is restrained, severe cough, bad breath and heart diseases will be resulted.

9. Ilaippu (Exhaustiveness):

If restrained, it will lead to fainting, urinary disorders and rigor.

10. Nithirai (Sleep):

All organs will get rest only during sleep. So, it should not be avoided. Disturbance will lead to headache, pain in the eyes, deafness and slurred speech.

11. Vaanathi (Vomiting):

If restrained, it leads to itching and symptoms of increased *Pitham*.

12. Kanneer (Tears):

If it is restrained, it will lead to Sinusitis, headache, eye diseases and chest pain.

13. Sukkilam (Semen):

If it is restrained, there will be joint pain, difficulty in urination, fever and chest pain.

14. Suvasam (Breathing):

If it is restrained, there will be cough, abdominal discomfort and anorexia.

3. C. DIAGNOSTIC METHODOLOGY

The methodology of diagnosing disease in *Siddha* system shows uniqueness in its principle. The principle comprises of examination of tongue, complexion, and modulation in speech, inspection of eyes and findings by palpation. It also includes examination of urine and stool/ the reinforcement of diagnosis based on *Naadi* (Pulse) examination. All these together constitute “*Envagai Thervugal*” which forms the basis of diagnostic methodology in *Siddha* system of medicine.

These tools not only help in diagnosis but also to observe the prognosis of the disease and for reassuring the patient and to be informed about the nature of diseases. Besides these *Envagai Thervugal* there are some other parameters in *Siddha* system which are greatly helpful in diagnosing various disease, they are *Manikadai Nool* (Wrist circumetric sign) and *Jothidam* (Astrology).

1. NAADI (Examination of pulse):

The Pulse Diagnosis“ is a unique method in *Siddha* Medicine. The pulse should be examined in the right hand for male and the left hand for female. The pulse can be recorded at the radial artery. By keenly observing the pulsation, the diagnosis of disease as well as its prognosis can be assessed clearly. *Naadi* is nothing but the manifestation of the vital energy that sustains the life within our body. *Naadi* plays a most important role in *Envagai thervu* and it has been considered as foremost thing in assessing the prognosis and diagnosis of various diseases. Any variation that occurs in the three humours is reflected in the *Naadi*. These three humours organize, regularize and integrate basic functions of the human body. So, *Naadi* serves as a good indicator of all ailments.

நாடி பார்க்கும் வகைகள்:

“இடுமென்ற நாடிகள்பார்க்கும் வகையைக் கேளு
என்னவென்றால் நடுவிரல் நீவிப்பின்னே
அடுமென்ற அடுத்தவிரல் மோதிரமாம் விரலை
அப்பனே இளுத்தபின்பு சுண்டுவிரலிளுத்து
உடுமென்ற தூண்டுவிர லிளுத்து அப்பால்
உத்ததொரு அங்குட்ட விரலைநீ விக்கரத்தில்
படுமென்ற சீயோதி அங்குலமோ தள்ளி

பார்தடவி மூன்றுதரம் சுரம்பார்க்கும் வகையே
வகை என்ன வாதமது ஒன்னரையாம் பித்தம்
வளமையோன்று அய்யங்கால் வளமாய்நிற்கில்
பகையில்லை நாடிகளுந் தொந்த மில்லை
பண்பான் சுகரோசருருபக் கூருசொன்னேன்”

-அகத்தியர் கனகமணி -100

Naadi is felt by,

- *Vali* - Tip of index finger
- *Azhal* - Tip of middle finger
- *Iyyam* - Tip of ring finger

மூவகை நாடியும் மாத்திரை அளவும்

“வழங்கிய வாதம் மாத்திரை ஒன்றாகில்
தழங்கிய பித்தம் தன்னில் அரைவாசி
அழங்கும் கபந்தான் அடங்கியே காலோட்டில்
பிழங்கிய சீவற்க்கு பிசுகொன்று மில்லையே

- குணவாகட நாடி

The pulse is measured in wheat/grain expansible heights.

The normal unit of pulse diagnosis is

1 for *Vali* (*Vatham*),

½ for *Azhal* (*Pitham*)

¼ for *Iyyam* (*Kabam*).

NAADI NADAI (THE PULSE PLAY):

Compared to the gait of various animals, reptiles and birds

“வாகிலன்னங்கோழி மயிலென நடக்கும் வாதம்
ஏகிய வாமையட்டை யிவையெனநடக்கும் பித்தம்
போகிய தவளை பாம்பு போலவாம் சேத்தும்மந்தான்”

- சிகிச்சாரத்தின தீபம்

Compared to the gait of various animals, reptiles and birds

- *Vali* - Movement of Swan and Peacock
- *Azhal* - Movement of Tortoise and Leech

➤ *Iyyam* - Movement of Frog and Serpent

“பார்க்கையில் கைவிகாரம் பார்த்தா லாடர்வக்கு

எற்கும்வலக்கை இடக்கை - மடவார்க் காகு”

அகத்தியர் வைத்திய சிந்தாமணி வெண்பா - 400

Naadi is examined in right side for men and on left for women.

2. SPARISAM (Examination by touch):

“வெம்மை குறைந்தாலு மிகுந்தாலும் வாதபித்தம்

தம்மை நிரைநிரையாய் சாற்றுவார் - வெம்மையன்றி

சீதமுமவ் வாறாகில் சிலேட்டும மொன்றுதொந்த

மீதமுமவ் வாராகு மேல்”

அகத்தியர் வைத்திய சிந்தாமணி - 4000

“நேயமுடனே வாதத்தின் தேசந்தானும்

நேர்மையாய் குளிர்ந்து சிலவிடதிலே தான்

மாயமுட நாட்டனமுந் துடிதுடிப்பு

மருவுதலாம் பித்தத்தின் தேசந்தானும்

தோயவே வட்டிணமதா யிருக்குந்தெளிவாய்

சேத்துமத்தின் தேசமது குளிர்ந்திருக்கும்

பாய தொந்த தேசமது பலவாறாகும்

பரிந்து தொட்டு தேசத்தை பார்த்துப் பேசு”

- கண்ணுசாமி பரம்பரை வைத்தியம்

In *Vali* disease, some regions of the body felt chill and in some areas they are hot.

In *Azhal* disease, we can feel heat.

In *Iyyam* disease, chillness can be felt.

In *Thontham* diseases, we can feel altered sensations.

3. NAA (Examination of tongue)

“பலமான ருசியும் நாவின் கூற்றை

பகர்கின்றேன் வாதரோகி இன்றன் நாவு

கலமாக வெடித்து கருத்திருக்கு முட்போல்

கண்டு கொள்ளவாய் பித்த ரோகியின் நாவு

நலமுற சிவந்து பச்சென்றிருக்கும் நட்பிலா

சிலேத்துமரோகி யின்றன் நாவு
தன்மையடி தடித்து வெளுத்திருக்கும்பாரே”

கண்ணுசாமி பரம்பரை வைத்தியம்

In *Vali* derangement, tongue will be cold, rough, furrowed and tastes pungent.

In *Azhal*, it will be red or yellow and kaippu taste will be sensed.

In *Iyyam*, it is pale, sticky and sweet taste will be lingering.

In *Thontham*, tongue will be dark with raised papillae and dryness.

4. NIRAM (Examination of complexion)

“தேகத்த நிறந்தானும் செப்பக் கேளிர்
சிறுமையாய் வாதந்தான் கருத்திருக்கும்
போகத்தின் பித்த நிறம் மஞ்சளாகும்
பெருஞ்சேதம் ரோகிக்கு வெளுத்தாகும்
பாகத்தின் தொந்தரோ கிக்குத் தானும்
பலபல வண்ணமுமாகிப் பரந்து நிற்கும்”

- தேரையர் யமக வெண்பா

In *Vali*, *Azhal* and *Iyyam* variations, the colour of the body will be dark, yellow or red and fair respectively.

“உரைத்தகற்பானவாத ரோகிபித்த ரோகி
அரைத்தமஞ்ச னைக்குளித்தோன் ஆவான் - ரத்தம்
குளித்தவனு மாவான் கொடும்சிலேத்தும ரோகி
வெளுத்திடுவோன் தொந்தரோகியே”

அகத்தியர் வைத்திய சிந்தாமணி வெண்பா - 4000

According to *Agathiyar Vaithiya Chinthamani* – 4000, in *Vatha*, *Pitha* and *Kaba* variations the colors of body like as yellow, red and pale.

“மூன்றாம் வாதபித்த சிலேத்துமத்தால்
மிகுந்தமுறத் தொந்தித்த ரோகி தேகம்
தோன்றாத சீதய விஷன காலமூன்றுந்
தொகுத்தேன்யான் திரேகத்தி நிறத்தை கேளு
ஊன்றாத வாதவுடல் கருத்துக் காணும்
ஊரியபித்த முடல் சிவப்புப் பசுமைகாணும்

போன்றாத வையவுடல் வெண்மை தோன்றும்

பொருந்துந்தொந்த ரோகவுடற் கிவற்றை யொக்கும்"

- கண்ணுசாமி பரம்பரை வைத்தியம்

“பனைவாத தேகநிறங் கறுத்து நிற்கும்

பைத்தியதேக நிறமஞ்சள் சிவப்பதாமே

தாமே சிலேட்டு மதேகநிறம் வெளுப்பு தான்

தொந்ததேகம் இந்நால் விதமாயநிற்கும்"

- பதினெண் சித்தர் நாடி சாத்திரம்

According to Kannusamy Parambarai Vaithiyam and Pathinen Siddhar Naadi Sasthiram, in Vatha, Pitha, and Kaba vitiations, the colors of the body like as black, reddish green and white. In Thontha constitution, the color of the body will be associated with combination of two humours.

5. VIZHI (Examination of Eyes)

“காணுகின்ற வாத ரோகிக்கு கண்கள்

கருநிறமாய் நொந்துமிகத் தண்ணீர்பாயும்

பூணுகின்ற பித்தரோகிகடி மஞ்சள் போலிருக்கம்

சிவப்பு நிறப்பொலிவு தோன்றும்"

- பதினெண் சித்தர் நாடி சாத்திரம்

“உண்மையாய் கண்கள்குறிப் பதைக்கேள் வாதம்

உற்றவிழி கறுத்துநொந்து நீருங் காணும்

தண்மையிலாப் பித்தரோகி யின்றன் கண்கள்

சார்பாகப் பசுமைசிவப் பேறுங் காணும்

வண்மையிலா வையரோகி விழிகள் தானும்

வளமான வெண்மைநிற மேதா நாதம்

திண்மையிலாத் தொந்தரோகி யின்றன் கண்கள்

தீட்டுவாய் பலநிறமென் றறைய லாமே"

- கண்ணுசாமி பரம்பரை வைத்தியம்

In Vatha disease, the tears is darkened,

In Azhal disease they are yellow,

In Iyya disease they are whitish in colour and In Thontha disease the tears are multi colored. In Vatha disease there will be excessive tears (Epiphora). In disturbance of all the three humuors, eyes would be inflammed and reddish.

“கண்கறுத்து நீரோடில் காலாம் நடுவாகில்
கண்பசக்கும் சொக்கும் கடையாகில் - கண்பீளை
சாடி வெளுக்குமே சன்னிவாதம் பித்தமுமென்
றோடியகா மாலை பசக்கும்”

- அகத்தியர் வைத்திய சிந்தாமனி வெண்பா - 4000

As per Agathiyar Vaithiya Chinthaamani Venba - 4000, In vitiated Vali eyes turn black and tears shed. In vitiated Azhal humour, Mukkutram and in jaundice yellowish discoloration occurs. In vitiated Iyyam, the eyes turn white.

6. MOZHI (Examination of Voice)

“பார்ப்பதான் வாதரோகி யின்றன் வார்த்தை
பக்குவமாய்ச் சமசத்த மாயிருக்கும்
சேர்ப்பதுதான் பித்தரோகியின்றன் வார்த்தை செப்பக்கோள
பெலத்துமே யுறத்திருக்கும்
ஏற்பதுதான் ஐயரோகி யின்றன் வார்த்தை
யெளிதாகச் சிறுத்திருக்குமியல்பிதாகும்
கேசற்கவே யிம்மூன்றுந் தொந்தமாகில்
கூசாமற் பலவிதமாய் பேசுவாரே”

- கண்ணுசாமி பரம்பரை வைத்தியம்

“மாமயிலே சத்தமது அறிய வேண்டில்
வாதரோகிசம தொனியாய் வார்த்தை பேசும்
ஈமமுள்ள பித்தந்தான் இறைந்த கூறும்
இயம்பிடும் சிலேத்தும ரோகிக்கீனசத்தம்
நாமுரைத்தோம் தொந்த ரோகிக்குத் தானிந்த

நால்விதமாய் மொழிந்த சத்தம் நயந்து காணே"

பதினெண் சித்தர் நாடி சாத்திரம்

According to Kannusamy Parambarai Vaithiyam and Pathinen Siddhar Naadi Sasthiram, in vitiation of Vali, Azhal and Iyyam, the voice would be normal, high pitched and shrill or low pitched respectively. By the voice, the strength of the body can be assessed.

7. Malam (Examination of feces)

"கறுத்தமல பந்தமலங் காலாகும் பித்தம்

சிறுத்தமுட் டிணம்செம்மை சேரும் - பொறுத்தொருக்கால் சீதமலந்
தில்லையுமாம் சேர்ந்தபல ரோகியாம்

மீதமலம் எண்ணிறமுமே"

- அகத்தியர் வைத்திய சிந்தாமணி வெண்பா - 4000

As per Agathiyar Vaithiya Chinthamani Venba - 4000, In vitiated Vali, the stool is hard and black. In vitiated Azhal, it is hot and red. In vitiated Iyyam, it is cool and watery.

"ஓக்குமேவாத நோய் மலத்தைப் பார்க்கில்

உகந்தமலம் கறுகியே கறுத்திருக்கும்

மிக்கபித்த நோய்மலத்தை யுற்றுப் பார்க்கில்

மிகுந்தசிவப்புடன் பசுமை தானுந் தோற்றும்

மக்குவளை மனேகே ளைய ரோகம்

மலமதுதான் வெண்மைனிற மாயிருக்கும்

பக்குவமா யிம்மூன்றுந் தொந்திப் பாகில்

பகருமின் நிறங்கள்வகை பரிந்து காணும்"

- கண்ணுசாமி பரம்பரை வைத்தியம்

In exacerbated Vali, faeces are hard, dry and black in colour. In Azhal vitiation, it is yellow. In Iyyam, disturbance it is pale. In Thondham, it is a mixture of all colours.

8. Moothiram (Examination of Urine)

“ஓங்கிய வாதத்தோர்க்கு நீர்விழுங் குணந்தா நுரைக்கிற
பூங்கொடி கறுத்துநொந்து சிறுத்துடன் பொருமி வீழும்
பாங்குடன் பித்தத்தோர்க்கும் பசியநீர் சிவந்து காட்டி
ஏங்கவே கறுக்கதாக எரித்துடன் கடுத்து வீழும்
வீழுமே சிலேற்பனத்தோர் நீர்க்குணம் விளம்பக் கேளாய்
நாளுமே வெளத்துறைந்து நலம்பெற வீழுங் கண்டாய்
வாள்விழி மானேதொந்த ரோகமா னிடர்க்குத் தானே
தாளுநீர் பலநிறந்தா னெனவே சாற்றி னோமே”

கண்ணுசாமி பரம்பரை வைத்தியம்

For patients suffering from Vatha diseases, the urine will be scanty and dysuria. For patients suffering from Pitha diseases the urine will be greenish red in colour and there will be burning micturition. In Kaba diseases the urine will be white, in Thontha diseases urine will be various in color.

தேரையர் நீர்க்குறி நெய்க்குறி

"அருந்துமா நிரதமும் அவிரோதமாய்
அஃகல் அலர்தல் அகாலவூன் தவிர்ந்தழற்
குற்றளவருந்தி உறங்கி வைகறை
ஆடிக் கலசத் தாவியே காதுபெய்
தொருமுகூர்த்தக் கலைக்குட்படு நீரின்
நிறக்குறி நெய்க்குறி நிறுமித்தல் கடனே"

- தேரையர் நீர்க்குறி நெய்க்குறி

Sage Theraiyar, one of the renowned authors of Siddha medicine described urine examinations and stages of health. He had explained about the color and consistency of the urine in vitiated humor and diseases (Neerkkuri). He also emphasized about the spreading nature of a single drop of oil on the surface of the urine indicating the imbalance of specific dosha and prognosis of disease (Neikkuri).

Neerkkuri:

"வந்த நீர்க்கரிஎடை மணம் நுரை எஞ்சலென்
றைந்தியலுளவை யறைகுது முறையே"

- தேரையர் நீர்க்குறி நெய்க்குறி

Five characters of urine have to be examined. They are color, consistency, odour, froth and deposits.

Color of the urine:

"பீதம் செம்மைபை கருமை வெண்மையென்
றோதைங்கொழுமையை யொத்துகு நீரே"

- தேரையர் நீர்க்குறி நெய்க்குறி

The color of the urine is classified into 5 types, yellow, red, green, black and white color. Normal urine is straw yellow colored and mildly aromatic. The time of the day and food taken will have an impact on the color of the urine.

Neikkuri:

It is a diagnostic procedure in which a drop of gingelly oil is dripped on the surface of urine sample (patient's urine) collected in a bowl made of glass or porcelain and observed its mode of spreading pattern.

"அரவென நீண்டினஃதே வாதம்
ஆழி போல்பரவின் அஃதே பித்தம்
முத்தொத்து நிற்கின் மொழிவதென் கபமே"

- தேரையர் நீர்க்குறி நெய்க்குறி

The spreading pattern of oil drop is the indicative of Vali, Azhal, and Iyyam diseases.

- Aravu (Snake pattern of spread) indicates Vali disease,
- Aazhi (Ring pattern of spread) indicates Azhal disease,
- Muthu (Pearl pattern of spread) indicates Iyya disease.

In Neikkuri the rapid spread of oil drop, pearl beaded and sieve type of spreading pattern indicates incurable state of the disease. From this, we can assess the prognosis by the Neikkuri.

MANIKKADAI NOOL - Agathiya soodamanikayaru soothiram (WRIST CIRCUMETRIC SIGN):

“கமலக்கை மணிக்கையில் கயறு சூத்திரம்

விமலனே நோக்கியே வேடமாமுனி

திமிலாம் பிணியது சேரச் செப்பியே

அமலனாமுனிக்கு முன்னருளிச் செய்ததே”

- பதினெண் சித்தர் நாடி நூல்

According to the Pathinen Siddhar Naadi Nool, Manikadai Nool is also helpful in diagnosis. This Manikkadai Nool is a parameter to diagnose the disease by measuring the circumference of the wrist by means of a thread and then expressing it in terms of patient's finger breadths. By this measurement the disease can be diagnosed.

Manikadai Nool inference:

When the Manikkadai Nool measurement is 11 fbs, the person will be stout and he will live a healthy life for many years. When the Manikkadai Nool measures between 4 & 6, it indicates poor prognosis of disease and the severity of the illness will be high and it leads to death.

Measurement Possible conditions

- 10 fbs Pricking pain in chest and limbs, gastritis and ulcer result.
- 9 3/4 fbs Bubo, abcess and dry cough will be resulted.
- 9 1/2 fbs Odema, increased body heat, burning sensation of eye, fever, ailment of urinary tract & anorexia.
- 9 1/4 fbs Dysuria, insomnia, sinusitis and burning sensation of Eye.
- 9 fbs Impaired hearing, pain around waist, thigh pain, unable to walk.
- 8 3/4 fbs Increased body heat, skin disease due to toxins, abdominal discomfort, cataract, sinusitis.
- 8 1/2 fbs Leucorrhoea, venereal disorder, skin diseases, hernia and infertility will occur.
- 8 1/4 fbs Stout and painful body. Headache, sinusitis and toxins induced cough.

- 8 fbs Abdominal discomfort, gastritis, anorexia & venereal diseases. →
- 7 3/4 fbs Piles, burning sensation of limbs, headache, numbness occur. Within 2 years cervical adenitis and epistaxis results.
- 7 1/2 fbs Osteoporosis, urinary disorder, abdominal discomfort, burning sensation of eyes, increased body temperature. Within 6 days all the joints of the limbs presents a swelling.
- 7 1/4 fbs Lumbar pain, increased Pitha in head, anemia, eye pain, odema and somnolence
- 7 fbs Pitham ascends to head, haemetemesis, tuberculosis, burning sensation of limbs and constipation.
- 6 3/4 fbs Eye ache, dizziness, testis disorder. Within 3 years it causes anuria, pain and burning sensation over limbs, facial sweating results.
- 6 1/2 fbs Thirst, anorexia, increased body heat and Vatham results.
- 6 1/4 fbs Diarrhoea, belching, vomiting and mucous dysentery.
- 6 fbs Reduced weight, phlegm in chest. It results in death within 20 days.
- 5 3/4 fbs Delirium, dizziness, loss of consciousness. It results in death even if the patient takes gruel diet.
- 5 1/2 fbs Severity of illness is increased. Toxins spread to the head. Tooth darkens. Patient will die in 10 days.
- 5 1/4 fbs Patient seems to be sleepy and death results on the next day.
- 5 fbs Pallor and dryness of the body. Kabam engorges the throat and the person will die.
- 4 3/4 fbs Dryness of tongue and tremor present. Patient will die in 7 days.
- 4 1/2 fbs Shrunken eyes, edema will present and death results in 9 days.
- 4 1/4 fbs Tremor, weakness of limbs and darkening of face occurs. Finally death results in two days.
- 4 fbs Pedal edema will be present. Patient will die in 5 days.

3. D. REVIEW OF LITERATURE – NEERKKURI NEIKKURI

நீர்க்குறி:

“தர்க்கசாத் திரிகலானோர் தங்களிற் றேர்ந்து நோயின்
வர்க்கமா தன்னா லறிவது மயக்க மென்றே
உற்றநீர்ப் பரீட்சை யாய்ந்தே யுணர்த்தின ரிதற்க்கு நேராய்
மற்றொரு விதிநூலில்லை மருத்துவக் கலைவல் லோர்க்கே”

- அங்காதி பாதம்

In order to shed off the ambiguity in the diagnosis of disease through pulse perception. The exponents have charted out a method called Neerkuri - an incomparable method of diagnosis.

நிறக்குறி நெய்க்குறி - நீர் இலக்கணம் :

“அருந்துமாறிரதமும் அவிரோதமதாய்
அஃகல் அலர்தல் அகாலவூன் தவிர்ந்தழற்
குற்றலவருந்தி உறங்கி வைகறை
ஆடிக்கலசத் தாவியே காது பெய்
தொருமுகூர்த்தக் கலைக்குட்படு நீரின்
நிறக்குறி நெய்க்குறி நிருமித்தல் கடனே”

On the day before the urine test one should take food, consisting of all the six tastes in a harmonious blend at the regular time based on one's digestive fire (Appetite), after a sound overnight sleep, Urine should be collected in a crystal bowl and the test should be done before 90 minutes from dawn.

நீரின் பொதுக்குணம் -General features of urine:

“வந்த நீர்க்கரி எடை மணம் நுரை ஏஞ்சலென்
றைந்தியளுலவவை யறைகுது முறையே”

The following are the features of urine:

1. நிறம் (Color)
2. எடை (Density)
3. நுரை (Froth)
4. மணம் (Odour)
5. எஞ்சல் (Deposits)

நிறத் தொகை - Different colors of urine:

“பீதம் செம்மைடைங் கருமை வெண்மையென்
றோதைங்கொழுமையை யொத்துகு நீரே”

The urine may be of the colors,

1. Yellow
2. Red
3. Green
4. Black
5. White

SUBDIVISIONS IN EACH COLOUR:

“அரிசனத்தாறும் அருணத்து நான்கும்
அரிதத்தைந்தும் அஞ்சனத்தொரு நான்கும்
வெண்மையுள் இரண்டுமாய் விள்ளுஞ் சுருதியே”

1. மஞ்சள் - 6
2. சிவப்பு - 4
3. பச்சை - 5
4. கருப்பு - 4
5. வெண்மை - 4

NEIKKURI:

“ஐக்குறி கொடுவட வானிழ லமர்ந்தோர்
கைக்குறி தெரித்த நங்கடவுளைத் துதித்தே
மெய்க்குறி நிறந்தொணி விழிநா விருமலம்
கைக்குறி முழுவதூஉங் கற்றார் தம்மினும்
பொய்க்குறி மெய்க்குறி புகலு மெவர்க்கும்
நெய்க்குறி யதனை யிந்நீணிலத் துரைப்பாம்”

Diagnosing diseases with the help of Neikkuri method (a method by putting a drop of gingelly oil on the surface of the patient’s urine)

The method and principle of putting gingelly oil drop:

“நிறக்குறிக் குரைத்த நிருமாண நீரிற்
சிறக்க வெண்ணெய்யோர் சிறுதுளி நடுவிடுத்
தென்றுறத் திறந்தொலி ஏகாத மைத்ததி
னின்றதிவலை போம் நெரிவிழியரிவும்
சென்றது புகலுஞ் செய்தியை யுணரே”

The urine should be collected properly according to the norms. It should be kept in a place where there is no wind which may cause the urine to stir. One drop of gingelly oil should be instilled on the center of the urine. The change that takes place in the urine should be observed carefully to diagnose the ailments.

The symptoms of Vatham indicated by Neikkuri:

வாதம் - வாயு + ஆகாயம் (இலேசு)
“அரவென நீண்டி னதே வாதம்”
“அணுகுநெய் பாம்பிற் காணில் அனில நோய்”

The oil drop spread like a Snake it is called Vatham.

- உடனடி பரவல்
- வேகமான பரவல்
- ஒழுங்கற்ற வடிவம்

The symptoms of Pitham indicated by Neikkuri:

பித்தம் - தீ (நடுநிலை)

“அழிபோற் பரவின் அதே பித்தம்”

“வட்டமாயின் தணிவிலாப் பித்த நோயாம்

The oil drop spread like a Ring it is called Pitham.

- சீரான வேகம்
- வட்டமான பரவல்
- ஒழுங்கான வடிவம்

The symptoms of Kapham indicated by Neikkuri:

கபம் - மண் + நீர் (பளு)

“முத்தொத்து நிற்கின் மொழிவதென் கபமே”

“முத்தேனில் ஐய நோய்தனே”

The oil drop spread like a Pearl it is called Kabam.

- நிலைத்தல்
- பரவாமை

The symptoms of Thontha Thodam indicated by Neikkuri:

“அரவிலாழியும் ஆழியில் அரவும்

அரவின் முத்தும் ஆழியில் முத்தும்

தோற்றில் தொந்த தோடங்களாமே”

If the drop changed into figures like ring in the snake, snake in the ring, pearl in the snake and pearl in the ring, it is considered as Thontha Thodam (Union of two humors)

The symptoms of Three humors (Mukkuttram) in Neikkuri:

“அழுந்து நெய்த்துளி அதுவுமும் மலத்தில்

எழுந்தகுறிகளெல்லா மொன்றில்

தோற்றுவது முத்தொட மென்றுன்னே.

If the oil drop drowns in the urine and all the shapes of Vatham, Pitham and Kapham are found in the drop of oil, it indicates derangement of three humors (Mukkuttram)

The symptoms of good and bad prognosis of Neikkuri:

“சல்லடைக் கண்போல் தனித்தனித் துவாராமாய்ச்
 சொல்லுமுன் அற்றிடில் தொடலென் கரமெனக்
 கௌதமர் உரைப்பினும் கபத்தால் கண்படும்
 தவியா வணங்கது சாத்தியம் என்பரே”

As per says Sage Gowthamar, If the drop of oil speedily spreads like a sieve with several hollow spots, the disease is not suitable. But Sage Theraiyar says that it is due to the power of kapham and this can be cured. This is unique peculiar quote for sage Theraiyar.

NEIKKURI ON HUMORAL BASIS:

| | |
|----------------------------|--|
| <p>VATHAM</p> | <ul style="list-style-type: none"> • அரவு போல் பரவல் - Like serpentine • உடனடி பரவல் – Oil spread at the moment • ஒழுங்கற்ற வடிவம்- Irregular shape • வேகம் மிகுதி – Fast or Rapidly spreading |
| <p>VATHA PITHAM</p> | <ul style="list-style-type: none"> • வேகமாக(அ)ஒழுங்கற்ற வடிவமாக பரவுதல் பின்பு அதனில் மோதிரம் (Rapidly spread or Irregular shape appears followed by ring pattern) |

| | |
|----------------------------|---|
| <p>VATHA KABAM</p> | <ul style="list-style-type: none"> • எண்ணெய் துளி விட்டவுடன் ஒழுங்கற்ற வடிவில் மிக மெதுவாக நின்று நின்று இறுதி வரை சென்றால் வாதகபம் • ஒழுங்கற்ற வடிவில் பரவி சல்லடை கண்ணாக நின்றுவிட்டாலும். • விட்ட துளி சரேல் என பரவி கடுகு போல் நின்றாலும். |
| <p>PITHAM</p> | <ul style="list-style-type: none"> • மோதிரம் போல் பரவல்- Oil spreading like Ring • உடனடி பரவல் - Oil spreading at the moment • ஒழுங்கான வடிவம் - regular or round shape • சீரான வேகம் - Moderate speed |
| <p>PITHA VATHAM</p> | <ul style="list-style-type: none"> • சீரான மித வேகத்தில் வட்ட பரவல் வந்த பின்பு ஒழுங்கற்ற வட்ட வடிவமாக பரவினாலும் (அ) வாதத்தின் நீட்சிகள் தோன்றினாலும் |
| <p>PITHA KABAM</p> | <ul style="list-style-type: none"> • பித்தத்தின் இயல்பான பரவல் வேகம் தடைபட்டு நிலைத்து நின்றாலும் • எண்ணெய் துளி விட்டவுடன் இயல்பான பரவல் வேகம் அதில் சல்லடை கண்ணாக தோன்றி நின்றுவிட்டாலும். |

| | |
|--------------------|--|
| KABAM | <ul style="list-style-type: none"> • பரவாதநிலை ,நிலைத்தல்- Slow spreading or not spreading • முத்து போல் நின்றல் - Like pearl pattern or Stands as a drop • சல்லடை கண் போல் பரவல்- Like sieve Pattern |
| KABA VATHAM | <ul style="list-style-type: none"> • முத்து போல் நீண்ட நேரம் இருந்து பின்பு ஒழுங்கற்ற வடிவமாக மாறுதல் • வடிவ மாற்றத்திற்கு சில நிமிடம் எடுத்து கொள்ளல் |
| KABA PITHAM | <ul style="list-style-type: none"> • முத்து போல் நீண்ட நேரம் இருந்து பின்பு மெதுவாக சீராக வட்ட வடிவமாக பரவல் • பரவல் சிறிது தூரம் மட்டும் ஒழுங்கான வடிவத்தில் பரவல். |

INCURABLE AND CURABLE STATE OF THE DISEASE

| CURABLE | INCURABLE |
|---|--|
| <ul style="list-style-type: none"> • Umbrella pattern of spread • Bud of Lotus Flower pattern of spread • Bud of jasmine Flower pattern of spread • Wild Elephant pattern of spread • Conch- shell pattern of spread | <ul style="list-style-type: none"> • Drop immerses into Urine • Cat pattern of spread • Mouse pattern of spread • Arrow pattern of spread • Crab pattern of spread • Bottle gourd pattern of spread • Hen pattern of spread |

| | |
|---|---|
| <ul style="list-style-type: none"> • Earth pattern of spread • Square shaped house pattern of spread • Shape of a throne • Ritual fire pattern of spread • Human being pattern of spread • Fish pattern of spread • Temple corridors pattern of spread • Veena (a string instrument) pattern of spread • Tree pattern of spread • Leaf of Bitter gourd pattern of spread • Bee pattern of spread | <ul style="list-style-type: none"> • Tiger and Lion pattern of spread • Horse pattern of spread • Monkey pattern of spread • Bull and Bear pattern of spread • Sword pattern of spread • Iron pestle pattern of spread • Pot and Trisoola pattern of spread • Betel leaf pattern of spread • A headless body pattern of spread • Scorpion pattern of spread • Tortoise pattern of spread etc., |
|---|---|

4. MODERN ASPECTS OF THE LIVER AND LIVER DISEASES

FUNCTIONAL ANATOMY:

Liver lobules which are cylindrical in shape are known as the basic functional unit of liver. They are about 0.8 to 2 millimetres in diameter and few millimetres long. There are approximately 50,000 to 100,000 lobules in a human liver. The liver consists of the right and left lobes, formed by the falciform ligament, ligamentum teres and ligamentum venosum. Each of the right and left lobes are further divided into eight segments and further into many lobules. However, when dealing with physiological aspect and pathological changes of liver, hepatic acinus is considered to be the functional unit. The direction of blood flow into the hepatic acinus is through the portal vein and hepatic artery and after nourishing the liver cells blood drains into the numerous hepatic venous tributaries. Conversely, the bile flows in the direction opposite to that of the blood flow. It flows into the inter lobular bile ducts through the biliary canaliculi. Liver contains a variety of cells such as hepatocytes, Kupffer cells, Stellate cells (the fat storing cells), endothelial cells, bile ductular cells etc.

LOCATION:

Liver is located in the right hypochondriac region of the abdomen beneath the right lower rib cage and just beneath the diaphragm and extends into the left hypochondriac region of the abdomen for a distance which differs from individual to individual. It is attached to the diaphragm, peritoneum, abdominal vessels, and upper gastrointestinal organs by various ligaments and also kept in position by these ligaments.

BLOOD SUPPLY TO THE LIVER:

Liver is supplied by both hepatic artery and portal vein and hence it is said to have a dual blood supply. For each minute about 1050 millilitres of blood rich in nutrients flow from the portal vein into the liver sinusoids. It constitutes about 80% of total blood supply of liver. In addition to that hepatic artery supplies about 300 millilitres of blood which is rich in oxygen to the sinusoids. It constitutes the remaining 20%. Thus, altogether liver receives about 1350 ml/min which is 27 percent of the cardiac output during resting condition. Also, under resting conditions liver forms about half of the total lymph formation of the body.

PRINCIPAL FUNCTIONS OF THE LIVER:

1. Formation and secretion of bile and its contents.
2. Nutrient and vitamin metabolism
3. Inactivation and detoxification function: Liver is known as the detoxifying factory of the body. It detoxifies and metabolizes various substances including toxins, steroids, and other hormones and thus enables their excretion. Liver cells possess an excellent detoxification system called the mixed function oxidase that detoxifies and alters a number of xenobiotics and protects the human from a multitude of potentially dangerous drugs. In certain chronic liver diseases like liver cirrhosis, the above said drug metabolism in liver may be affected by deficient hepatic blood flow or reduced activity of hepatic detoxifying enzymes. This modifies the intensity of therapeutic and toxicological effects.
4. Conjugation of lipophilic compounds like bilirubin, anions and cations so that they can be easily excreted in the bile or urine
5. Synthesis of acute phase proteins, albumin, clotting factors, carrier proteins, steroid binding and hormone binding proteins.
6. It is the largest reticuloendothelial organ in the body. Kupffer cells in liver removes infecting bacteria and bacterial products which enter the body from the gut. Approximately, only less than 1 percent of the bacteria reaching the liver via portal blood from the intestines enter into the systemic circulation. In this way blood is extensively modified chemically during its passage through the hepatic plates.
7. Stores vitamins (large amounts of vitamin A, D and B12 and smaller concentrations of vitamin K and folate) and minerals and release them when needed.
8. The Liver Functions as a Blood Reservoir: Liver can store large quantities of blood in its blood vessels. Normally 450 ml of blood, which is almost about 10 percent of the body's total blood volume, is present in both the hepatic veins and the hepatic sinuses. When the pressure in the right atrium increases it causes backpressure in the liver that leads to liver expansion, and 0.5 to 1 litre of extra blood is stored in the hepatic blood vessels.
9. Regulation of Liver Mass — Regeneration

The liver possesses an exceptional ability to regenerate itself even after a significant tissue loss either due to partial hepatectomy or liver injury, as long as the lesion is uncomplicated by viral infection or any other inflammation. This restoration of liver tissue to normalcy is significantly rapid and it needs only 5 to 7 days in rats.

10. Carbohydrate Metabolism:

In carbohydrate metabolism, the liver performs the following functions,

- ❖ large amounts of glycogen are stored in liver
- ❖ liver converts galactose and fructose into glucose
- ❖ Gluconeogenesis
- ❖ Liver helps to remove excess glucose from the blood by converting excess glucose into glycogen and stores it. When the blood glucose concentration begins to fall too low the above process reverse i.e., conversion of glycogen into glucose occurs. This ability of liver is called as glucostatic or glucose buffer function of the liver.

11. Fat Metabolism:

Even though most body cells perform fat metabolism, liver performs some unique parts of fat metabolism and thus play a main role.

- ❖ It oxidizes fatty acids and provides energy for most of the body functions
- ❖ It synthesizes larger amounts of cholesterol, phospholipids and lipoproteins
- ❖ Also, it synthesises fat from other sources like proteins and carbohydrates

12. Protein Metabolism

The following are functions of the liver in protein metabolism:

- ❖ Deamination of amino acids
- ❖ Formation of urea and help to remove ammonia from the body fluids
- ❖ Liver synthesizes most of the plasma proteins except immune globulins
- ❖ It converts one amino acid into another depending on the need and also synthesises other non-protein compounds from amino acids

13. The Liver forms the blood substances involved in blood coagulation.

ENTERO HEPATIC CIRCULATION

Enterohepatic circulation refers to the movement of bile salts from the liver to the small intestine and its vice versa. In the small intestines the bile salts help to digest fats and other related substances. Liver hepatocytes produce bile acids from cholesterol. These bile acids are delivered to the second part of duodenum. There are conjugated and bile salts are formed. When these bile salts reach proximal and distal ileum, they are reabsorbed into portal circulation. As the portal vein enters liver, the hepatocytes extract bile salts very efficiently and only a small amount of bile salts leave the liver and enter into the systemic circulation. Because of enterohepatic circulation each bile salt molecule is reused about 20 times before being excreted. Thus, enterohepatic circulation reduces the work load of liver.

LIVER DISEASES:

Liver diseases are generally classified as follows:

- ❖ Hepatocellular liver diseases
- ❖ Cholestatic (obstructive) liver diseases
- ❖ Mixed conditions.

Features of liver injury, inflammation, and necrosis are very much prominent in hepatocellular diseases. In cholestatic diseases, characteristics reflecting bile flow inhibition predominate. In the mixed pattern, signs and symptoms of both hepatocellular and cholestatic liver diseases are present e.g. Cholestatic forms of viral hepatitis and many other drug-induced liver problems.

HEPATOCELLULAR DISEASES:

- ❖ Viral hepatitis
- ❖ Alcoholic liver diseases

CHOLESTATIC LIVER DISEASES:

- ❖ Gallstone obstruction
- ❖ Malignancy

MIXED PATTERN:

- ❖ Cholestatic forms of viral hepatitis
- ❖ Drug induced liver diseases

5. REVIEW OF KALLEERAL NOI IN SIDDHA LITERATURE

KALLEERAL:

As per T.V. Saambasivam pillai, Liver is one of the internal organs of the body. It is dark red colour situated in main on the right upper side and towards the front of the abdominal cavity. It is the seat for the secretion of bile which is carried through two tubes into the bile duct. [6]

According to Agasthiyar Gunavaagam,

ஆற்றியே பகிர்தகண்ட விவரங் கேளு
அப்பனே மேல்வயிற்றின் வலது பக்கம்
தேற்றியே இருக்கின்ற உறுப்புக் கப்பா
தெளிவான பகிர்தகண்டம் என்றும் பேரே.

ஊனான மேல்புறந் தானுப்ப லாயும்
உள்ளபடி அடிப்புறந்தான் குடைவாய்க் காணும்
சீரான பழுவைத்தான் தூக்கிப் பார்த்தால்
சிறப்பாக நாலுபத்து பலமிருக்கும் பாரே.

புரடா நீளந்தான் பதினைந்தங்குலமே யாகும்
பண்பாக முன்னோரங் கூர்மையாகத் தோன்றும்
சீரடா பின்பக்கம் உருண்டிருக்கும் பாரு
சிறப்பான பக்கத் துறுப்புடன் கூடி.....

இன்னங்கேள் பகிர்தகண்டம் வெடிப்பி லப்பா
இதமான பித்தப்பை இருக்கும் பாரு.

- அகத்தியர் குணவாகடம் [7]

KALLEERAL NOI:

Kalleeral noi (Liver disease) is also named as *valappaateeral noi, maandha katti, kalmaandham, yakkudham*.

Causes of Kalleeral noi:

The disease may be caused due to the following factors such as,

- ❖ Excess dietary intake
- ❖ Excessive intake of alcohol
- ❖ The disease may also occur in children due to intolerance to food, milk etc.
- ❖ Sex with an affected person.
- ❖ This disease may be associated with the fever.

Signs and symptoms of Kalleeral noi:

- ❖ Bitter taste in mouth
- ❖ Excessive salivary secretion
- ❖ Indigestion
- ❖ Anorexia
- ❖ Bilious vomiting
- ❖ Atrophy of muscles of upper and lower limbs
- ❖ Abdominal distension
- ❖ Frequent fever
- ❖ Enlarged liver

Types of Kalleeral noi:

Liver disease classified into three types based on the three humours. Such as,

- ❖ Vatha kalleral Noi
- ❖ Pitha kalleral Noi
- ❖ Kaba kalleral Noi

Vatha kalleeral noi:

The aggravated pitham in the body combined with vatham and produces fever, blackish discoloration of skin or face, loss of body strength, abdominal distension, enlargement of lymph nodes in inguinal, cervical and axillary regions. As the disease

advances the potency of blood decreases and exhibits the symptoms such as pallor, swelling of upper and lower limbs.

Pitha kalleeral noi:

This disease mainly occurs due to excessive activity of pitha dosha. Hence due to excessive pitha dosha the normal function of the liver is lost and the accumulation of bile throughout the body causes the yellowish discolouration of the skin and mucous membrane followed by symptoms such as bitter taste, bilious vomiting, edema of limbs and anemia. In later stage, abdominal distension also occurs.

Kaba kalleeral noi:

In this type of liver disease excessive activity of pitha dosham will be associated with kapha dosham. Hence there will be gradual enlargement of liver and its size and shape can be palpated. This will be followed by high fever, vomiting, frequent diarrhoea, red coloured urine with diminished volume. In addition, jaundice and swelling of the body will also be present.

Humoral derangements:

According to Siddha principles, Mukkutram i.e., Vatham, Pitham and Kabam are the three vital factors which are responsible for the normal physiological condition of the body. If any one of these three humours deviate from its standard ratio i.e., 1:1/2:1/4 maathirai respectively it gives rise to various pathological changes in the body resulting in diseases. Thus, Kalleral noigal (Liver diseases) are caused by excessive activity of pitha dosha. This dosha is associated with other two vatham and kapham humours and paravukkaal which is a type of vatham that cause the spreading nature.

According to the ancient Siddha system, several internal as well as external factors continually influence the state of the three Doshams- Vatham (wind), Pitham (fire) and Kabam (water) inside our body and they account for the well-being of an individual. Alterations in diet, lifestyle and behavioural patterns instantly alter these subtle humours or Dhoshams. The appearance of any symptom of ill health is the first sign of the individual having lost some nature of sensitivity and balance in relation to the nature of constitution. ^[3]

According to Siddha literature, Kalleral Noi (Liver disease) will be associated with Jaundice (Kaamalai). The following are the salient features of Manjal Kaamalai (Jaundice) that are described below:

Kaamalai (Jaundice):

Kaamalai is also known as Pithu noi, Manjal kaamalai, Kaamalla, Kamila mentioned in Siddha literature.

In T.V. Sambasivam Pillai's Dictionary, (Volume II) Kaamalai is mentioned as Arcuatus morbus (arcuatus – bent or curved in an arched from like மரணல்) in old days. It is described as follows: it is the condition characterised by the yellow colouration of the skin, mucus membrane and fluids (urine etc) by the pile pigment. [6]

Nature of kaamalai:

Yellowish discoloration of urine, eye, tongue and whole body.

Causes of kaamalai:

Manjal kaamalai is a pitha disease which is caused due to aggravated Pitham humour. Pitham is the principle which mainly consists of the element fire. It increases due to accumulation of bilious fluid in the blood, muscles, skin, eyes and tongue due to excessive intake of bitter, sour, salty or spicy food, intake of food at irregular intervals and unnatural sexual intercourse. Jaundice is also caused by excessive grief, anger, arguments, excessive physical exercise, very hot weather and excessive exposure to sun. [3]

Children are chiefly attacked by this disease which is often due to mother's capricious appetite and longing for indigestible food or improper articles of diet such as ashes, mud etc during the period of their pregnancy. It is said that the born child is attacked with this disease, owing to feeble digestion arising from the obstruction of bile as a result of which yellow colour in several parts of the body becomes noticeable.

In adults the causes are different viz, working in metals like as tin, brass, lead, copper etc being exposed to the fumes of these metals, inhaling the air contaminated by the fumes of gingelly oil, ammonium chloride, orpiment etc or taking excess of bilious articles of food or by sedentary habits and mental work likely to aggravate the condition of bile or due to the obstruction of the bile duct etc.

விளம்பவே பாண்டுமுற்றி இருக்கும் போது
 மீறியே பித்தவத் துதினைப் புசித்தால்
 புலம்பவே மங்கையுடன் புணர்ச்சி செய்தால்
 பூண்டிருமே காமாலை யென்னும் ரோகம்
 தளம்பவே காமாலை பதின் மூன்றாகும்
 சார்வான பேரோடு குணாகு ணத்தை
 உளம்பவே அசாத்தியங் கள்தனை யெல்லாம்
 உரைக்கரிது உரைக்கின்றே னுற்றுக் கேளே.

யூகி வைத்திய சிந்தாமணி – 800 [8]

It shows clearly it is caused by eating, after an attack of anaemia such things are likely to produce much bile or by having sexual intercourse with women. [6]

Symptoms of kaamalai:

பருகவே உள்ளங்கால் லுள்ளங் கைகள்
 பகர்முகங் கண்ணுடம்பு மிக வெளுப்பு காணும்
 கருகவே கால்கைகள் ஓச்ச லாகும்
 கனமாக நடுக்கியே இளைப்புண் டாகும்
 சுருகவே மலந்தானும் வரண்டு கட்டும்
 தூயமுகம் மஞ்சளிட நிறம் தாகும்
 வெருகவே வீக்கமாய்க் களைப்புண் டாகும்
 மிகக்காது மந்தமொடு தலைகனப் புண்டாமே.

- யூகி வைத்திய சிந்தாமணி – 800 [8]

As per Yugi Vaithiya chinthamani, salivation due to food, burning sensation of epigastric region, pricking pain, belching, swelling of the abdomen (ascites), constipation.

- ❖ Excessive salivation
- ❖ Vomiting
- ❖ Bitterness
- ❖ Loss of appetite
- ❖ Indigestion of food
- ❖ Dryness of body
- ❖ Frog like skin
- ❖ Yellowish discolouration of eyes, nail, face and skin
- ❖ Pallor of foot, hand, face and eyes
- ❖ Fatigue

- ❖ Tremors
- ❖ Constipation
- ❖ Dark coloured stools
- ❖ Excessive sleep

Types of Kaamalai:

தளம்பவே காமாலை பதின் மூன்றாகும்.

- யூகி வைத்திய சிந்தாமணி - 800 [8]

உரைக்கவே ஊதுகா மாலை யோடு

உயர்ந்த வரட்காமாலை வாதக் காமாலை

புரைக்கவே பித்தகா மாலை யோடு

பேரான சிலேட்டும காமாலை யாகும்

வரைக்கவே வாதசி லேட்டும காமாலை

வகையான பைத்தியசி லேட்பக் காமாலை

துரைக்கவே தொந்த காமாலை யோடு

சூட்சுமமா மஞ்சட் காமாலை யாமே

மஞ்சளா மூகுகா மாலை யோடு

மருவுகின்ற செங்கமலக் காமாலை யாகும்

குஞ்சலாங் கும்ப காமாலை யோடு

கொடிய குன்மக்காமாலை பதின்மூ ன்றாகும்

தஞ்சமாங் காமாலை முற்சென் மத்தில்

தயையில்லாக் கோபத்தாற் சண்டை தன்னால்

பஞ்சலாம் பரமசிவன் தன்னைத் தானும்

பணியாத மூடருக்குப் பரவுந் தானே.

- யூகி வைத்திய சிந்தாமணி - 800 [8]

According to Yugi vaidya chindhamani, there are 13 types of kaamalai [3].

- ❖ Vadha Kaamalai
- ❖ Pitha Kaamalai
- ❖ Kaba Kaamalai
- ❖ Vadha Kaba Kaamalai,
- ❖ Pitha Kaba Kaamalai
- ❖ Mukkutra Kaamalai

- ❖ Perumanjal Kaamalai
- ❖ Azhagu Kaamalai
- ❖ Sengamala Kaamalai
- ❖ Kumba Kaamalai
- ❖ Gunma Kaamalai
- ❖ Oodhu Kaamalai
- ❖ Varal Kaamalai.

Vatha kaamalai:

வாறான வயிறுதனைப் பொருமி விக்கும்
 மலந்தானுங் கழியாது உடம்பு வீங்கும்
 பூறான புறங்காலு முகம தைக்கும்
 புகழ்கரும மொன்றையுந்தான் செய்ய வொட்டா
 ஊறான உடல்கடுக்கு மிகவி னைக்கும்
 உறுக்காது மிகவீங்குங் கண்ப ருக்கும்
 பாறான பசியில்லா துறக்க மாகும்
 பண்பான வாதகா மாலை யாமே.

யூகி வைத்திய சிந்தாமணி - 800 [8]

Bloating of abdomen, hiccup, constipation, oedema of the body, fatigue, swelling of face and ankle, body pain, anorexia, loss of appetite, insomnia, decreased eye vision.

Pitha kaamalai:

முலையா யுடம்புலர்த்து முறக்க மில்லை
 மகத்தான படுக்கைவிட் டேதுஞ் செய்யா
 சேலையாய்ச் சோறுமே செரியா மற்றான்
 சுடமெங்கும் வாயுவாய்த் தியக்க மாகும்
 பாலையா முச்சதுவு மிகவுண் டாகும்
 பருக்கையாய்க் கழியுமே வயிறு தானும்
 ஆலையாய் வயிற்றிரைச்ச லதிக மாகு
 மசதியாய்ப் பித்தகா மாலை யாமே.

- யூகி வைத்திய சிந்தாமணி - 800 [8]

Dryness of skin, insomnia, fatigue, indigestion, dyspnoea, recurrent diarrhoea, loss of strength in upper and lower limb.

Kaba kaamalai:

தாமென்ற சடத்தையே யறிவ ழிக்குந்
தாக்கான இருமலே மிகவுண் டாகும்
வேமென்ற தலைமுகமும் வியர்வை யாகு
மிடுக்கான நடைமுறையு மூச்சு மாகும்
பாமென்ற பாக்கருந்தில் மிகச்செ ருக்கும்
பண்பான விழிசிவக்கு முடல்ந டுக்கும்
நேமென்ற நெஞ்சுதான் மிகக்க னக்கும்
நெடிதுயிர்க்குஞ் சிலேட்டுமகா மாலை யாமே.

யூகி வைத்திய சிந்தாமணி - 800 [8]

Yellowish discoloration of body, continuous cough, sweating from head and face, difficult to walk, dyspnoea, redness of eyes, shivering of body, heaviness of chest, giddiness while eating betel nut.

Vatha kaba kaamalai:

துய்க்கு மனந் தனைத்தானுஞ் சீர்ண மாக்கா
செரிசுக மாகவொட்டாச் செரும லாகும்
முயிர்க்குமுக மூக்குகண் மிகவே வேர்க்கும்
முடுகியே வயிறிரைந்து பொருமிக் கொள்ளுங்
கயர்க்குநாக் குக்கண்ணு மிகவெ ளுக்கும்
கனமான நடையில் மூச்செறிய வைக்கும்
வியர்க்குமே நகமெல்லாம் வீக்க மாகும்
மிடுக்கான இருமலுண்டாம் வாத சிலேட்டம்.

- யூகி வைத்திய சிந்தாமணி - 800 [8]

The symptoms of Indigestion, sweating from body, nose, face, eyes, bitter taste in tongue, paleness in tongue and eyes, dyspnoea present while walk fast, cough, swollen nails.

Pitha kaba kaamalai:

உண்டாகி வாந்தியண்ணுஞ் செரும லாகு
மோயாமற் றலைவலிக்கு மனமுறுக்கும்
வண்டாகி வயிறுகழியுந் தாக முண்டா
மனமெல்லாம் புண்ணாகி மயக்க மாகுந்
துண்டாகி சாதமுப்பிச் சீர்ணி யாது
துய்முகமுங் காலொடு கைவெ ளுக்கும்

வெண்டாகி மேனியுமே யூதிக் காணு

மிகப்பித்த சிலேட்மகா மாலை யாமே.

- யூகி வைத்திய சிந்தாமணி - 800 [8]

The Symptoms of pitha iyya kaamalai are Vomiting with yellowish discoloration of the body, headache, white colour stools, indigestion, giddiness, oedema of the body, paleness of upper and lower limb.

Mukutra kaamalai:

ஆமென்ற வங்கமழன் றேயெ ரிக்கும்

அசதிவரு மடிக்கடிக்கு இரும லுண்டாந்

தாமென்ற தண்ணீர்தான் மிகத்த விக்கும்

சடமெங்கும் கடுப்பெடுக்கும் புளித்தேக் காகும்

போமென்ற நாவதுதான் மிகப்பு ளிக்கும்

புரையான பசியெடுக்குங் குளிருண் டாகும்

வேமென்ற அடிவயிறு வீங்கும் வேர்க்கும்

மிக்க தொந்த காமாலை விபரந் தானே.

- யூகி வைத்திய சிந்தாமணி - 800 [8]

The symptoms of thondha kaamalai are body become like emaciated, cough, polydipsia, hiccup, body pain, belching.

Oodhu kaamalai:

கனப்பாக கண்ணுமுகங் கசிவுண் டாகும்

கனவீக்க முடலெங்கு முளைவுண் டாகும்

அனப்பாக வழற்றலாய்த் தேகமுணர் வில்லை

அதிசயமாய் சீதவெப்பு தலைதி ருப்புந்

தினப்பாகத் தயக்கமொடு சிறுநீர் மஞ்சள்

தேகமெங்கும் வாடியே திமிருண் டாகும்

உனப்பாக உன்னாத லாயி ருக்கும்

ஊதுகா மாலையென உரைக்க லாமே.

- யூகி வைத்திய சிந்தாமணி - 800 [8]

The Symptoms of oodhu kaamalai are Sticky sweating from face, excess eye discharge, swollen body with pain, loss of sensation in the body, increased body heat alters the kabam humour, tiredness of the body.

Varattu kaamalai:

உரைக்கவே கால்கைகள் மிகவும் வற்றும்
ஊணவே கால்தவறு மசதி யாகும்
நிரைக்கவே நீலம்போல் மலமிறங்கும்
நீர்தானுஞ் சிவந்துமே நெருப்பாய்க் காணுங்
துரைக்கவே குலைநோ வென்னக் குத்துஞ்
சோறுருசி யில்லாது மாலைக் கண்ணும்
வரைக்கவே வடிவெல்லாங் கறுகிக் காணும்
மயங்குவறட் காமாலை வகுத்த வாறே.

- யூகி வைத்திய சிந்தாமணி - 800 [8]

The symptoms of varal kaamalai are Loss of sensation in hand and legs, bluish stools, reddish urine, burning sensation during micturition, blackish discoloration of the body, night blindness, sourness in tongue, swollen lower abdomen.

Perumanjal noi:

விபரமாய் மூத்திரந்தான் மஞ்ச ளாகும்
வீங்குமே சரீரமெங்கு நோவுண்டாகும்
யமுபரமாய் முகங்கால்கண் கையுண் ணாக்கும்
மொழிமஞ்ச ணிறமாகும் முகமி னுக்கும்
அபரமா யன்னத்தை யிறங் கொட்டாது
அழகையாய் மனஞ்சலிக்கு மூச்சுண் டாகுந்
தபரமாய் தாதுநட்ட மலமும் பந்தஞ்
சார்ந்த மஞ்சட் காமாலை தன்பே ராமே.

- யூகி வைத்திய சிந்தாமணி - 800 [8]

The symptoms of perumanjal noi are Yellowish urine, face, upper and lower limb, uvula, depression and dyspnoea, impotence, constipation.

Azhagu manjal noi:

பேரான கால்கையு மசதி யாகும்
பேர்புருவங் கண்கள் கழற்கொடிக் காய்போலப்
பாரான பச்சென்று தானி ருக்கும்
பருகுநீர் மஞ்சள் நிறமாய் விடுக்கும்
தீரான லிங்கத்து ளெரிப்பு மாகும்
செரிக்கவொட்டா தன்னத்தை சிதறி யுப்பும்
ஆரான வழல்போல வெதும்பு மேனி
அழகு காமாலையிட வாண்மை தானே.

- யூகி வைத்திய சிந்தாமணி - 800 [8]

The symptoms of azhagu kaamalai are Weakness of upper and lower limb, eyebrows, eye, greenish discoloration like nickernut, yellowish discoloration of urine, burning sensation in urinal orifice, bloating of abdomen due to indigestion, increased body heat.

Sengamala manjal noi:

ஆண்மை யில்லாத் தமரகத்தின் குணமுமாகும்
அங்க மெல்லாம் தளர்ச்சியுமாய்ச் சோம்ப லாகும்
தீண்மைசிறு நீர்சிவந்து மஞ்ச ளித்துச்
சிறுகியே சிறுநீர்தான் அறுக்கி விழும்
நாண்மையாய் நகங்களுடல் மிகவெ ளுத்து
நற்காயம் வற்றியே சுரமுண் டாகும்
ஊண்மையா யுண்ணாக்கு உமிழ்நீர் நாக்கும்
ஊறுமஞ்சள் செங்கமலக் காமாலை யாமே.

- யூகி வைத்திய சிந்தாமணி - 800 [8]

The symptoms of sengamala kaamalai are due to weakness of heart, fatigue present, less quantity of urine with reddish yellow in colour, paleness in body and nails, fever, tongue, uvula and body become yellow in colour.

Kumba manjal noi:

காமாலை யடிக்கடி க்குக்களையே யாகும்
கனமாக உடம்பு சிறுநீரே மஞ்சள்
வேமாலை நேரத்தில் வியர்வை யாகும்
மேனோக்கும் வாதந்தான் கண்சி வக்கும்
பூமாலை போலவே துவண்டு போகும்
புகழான மயிலுறக்கம் போலே யாகும்
கோமாலை மலந்தானுங் குதுக்கென் றாகும்
கொடிய கும்பகாமாலைக் குணமி தாமே.

- யூகி வைத்திய சிந்தாமணி - 800 [8]

The symptoms of kumba kaamalai are yellowish discoloration of urine, sweating present during evening, like peacock the patient sleep while standing, patient become fatigue like garland.

Gunma manjal noi:

குணமானவாய் வெளுப்பு கண்தான் பச்சைக்
கொடுமுத்ர மஞ்சளித்துக் குழம்பு மாகும்

அணமான வன்னந்தான் செரிக்கும் போது
அடிவயிற்றில் வலியுண்டாகும் வாந்தி யாகும்
மணமான தொன்றுமே யறிந்தி டாது
மயிலுறக்க மிரைப் பிருமல் மூச்சு மாகும்
பிணமான துபோலக் கிடைகி டக்கும்
பிரளுமே குன்மகா மாலை தானே.

- யூகி வைத்திய சிந்தாமணி - 800 [8]

The symptoms of gunma kaamalai are paleness of mouth with yellowish urine, while digestion of food, defecation present with pain in lower abdomen, anosmia, loss of movements like cadaver or rolling the body due to intolerable pain.

Curable kaamalai:

Azhal kaamalai, majal kaamalai, iyya kaamalai, oodhu kaamalai, varal kaamalai, vali iyya kaamalai, azhal iya kaamalai which will be treatable.

Not curable kaamalai:

Kumba kaamalai, gunma kamaalai, mukkutra kaamalai, vali kaamalai, sengamala kaamalai, azhagu kaamalai are difficult to treat.

Types of kaamalai scattered in various Siddha literatures:

In Agastiyar 2000, Jaundice is classified into 8 types [9] - Seven are based on difference in three humours, another one is based on the primary disease. They are,

- ❖ Vadha Kaamalai,
- ❖ Pitha Kaamalai,
- ❖ Silethuma Kaamalai.
- ❖ Pitha Silethuma Kaamalai
- ❖ Vadha Silathuma Kaamalai
- ❖ Sannibatha Kaamalai
- ❖ Pitha Vatha Kaamalai
- ❖ Sobai Kaamalai.

In Vaidya Sara Sankiragam Jaundice is classified into 5 types [10]. They are,

- ❖ Manjal Kaamalai

- ❖ Varal Kaamalai
- ❖ Vatha Kaamalai
- ❖ Pitha Kaamalai
- ❖ Iyya Kaamalai.

In Bala vagadam, Jaundice is classified into three types ^[11]. They are,

- ❖ Oodhu Kaamalai
- ❖ Manjal Kaamalai
- ❖ Varal Kaamalai.

As per Agasthiyar Gunavaagadam, Kaamalai is classified into 13 types. ^[7]

துஞ்சடிக்கும் காமாலை பதின்மூன்றாகும்.

Humoral derangement of Kaamalai:

The phrases mentioned in various Siddha literatures.

கூறிடவே பித்தமது மீறிந் றானால்

கொடுங்காந்த

போமேதான் காமாலை பித்த வெட்டை

- அகத்தியர் நாடி

தானமுள்ள சேத்துமந்தா னிளகில் வெப்பு

சயமீளை இருமல்

ஏனமுறுங் காமாலை பாண்டு சோபை

ஏழுசுரங்கள் பலதுக்கம் விடமுண்டாமே.

- சதக நாடி

பண்பான பித்தத்தில் சேத்தும நாடி

பரிசித்தா ரத்திசுர மிளைப்பு ஈளை

கண்காது நயனமலம் நீரு மஞ்சள்

கனவயிறு பொருமல் மஞ்சள்நோய் கண்ணோவு

சதக நாடி

இடமான சேத்துமத்தில் பித்த நாடி

எழுந்தணுகில் விடமுடனே வீக்க முண்டாம்

திடமான குளிர் காய்ச்சல் மஞ்சள் நோவுத்

தேகத்தி லுளைச்சலிளைப் பிருமல் வாந்தி

- சதக நாடி

தொனிப்பான பித்தத்தில் சீதளங் கூடல்

தொந்தித்தால்

பனிப்பான குளிர்காய்ச்சல் விடபா ரூடம்

பாங்குடனே காமாலை சோபை வீக்கம்

- சதக நாடி

Derangement of pitha, kaba, pitha kaba and kaba pitha humour can cause the Kaamalai.

பாண்டு பிரமேகம் பன்வாத சூலைகுன்மம்

வேண்டா சயஞ்சன்னி வெண்சோபை – நீண்ட

அதிநீரே காமாலை யானபிணி தம்மு

ளதி சாரமா காதறி.

- கண்ணுசாமியம்

Jaundice associated with diarrhoea may be difficult to treat.

தொகுத்திட்ட நீரிழிவு மேக சூலை

சுரவீக்கஞ் சந்நிவலி தோட மாந்தம்

மிகுத்திட்ட கிராணியதி சாரம்

விடபாகந் திரள்பாண்டு சோகைகா மாலை

வகுத்திட்ட பெரும்பாடு மஞ்சள் நோவு

- சதக நாடி

The patient with the symptoms of Jaundice associated with dyspnoea and hiccup, couldn't recover from the disease.

சொல்லுகின்ற விடபாகம் வீக்கஞ் சோகை

சூலைவலி அழல்வாத நீரிழிவு மேகம்

அல்லல்படு மிளைப்பிருமல் சுவாச காசம்

அதிசயஞ்

வீறான குன்மமத்தி சுரங் காமாலை

- சதக நாடி

Jaundice patient associated with the symptoms of abdominal pain may cause the mortality.

Siruneer – Neerkuri:

வான்மீக மெழிற்குண் மைக்குண முறினது
தான் காமாலை நோய் தருமத்தின் நெனில்
பித்த நோயேனும் பிறக்கப் பணிக்குமே.

- தேரையர் நீர்க்குறி நெய்க்குறி

Saffron with black colour urine indicates jaundice or pith disease.

மந்திரி நிறமாய் வரப்படு நீரும்
உந்திய எருவையை ஒத்துகு நீரும்
பித்துகாமா லைகளால் பிறந்தனவெனச்
சித்திய வித்தியா தரமது செப்புமே.

- சித்திய வித்தியாதரம்

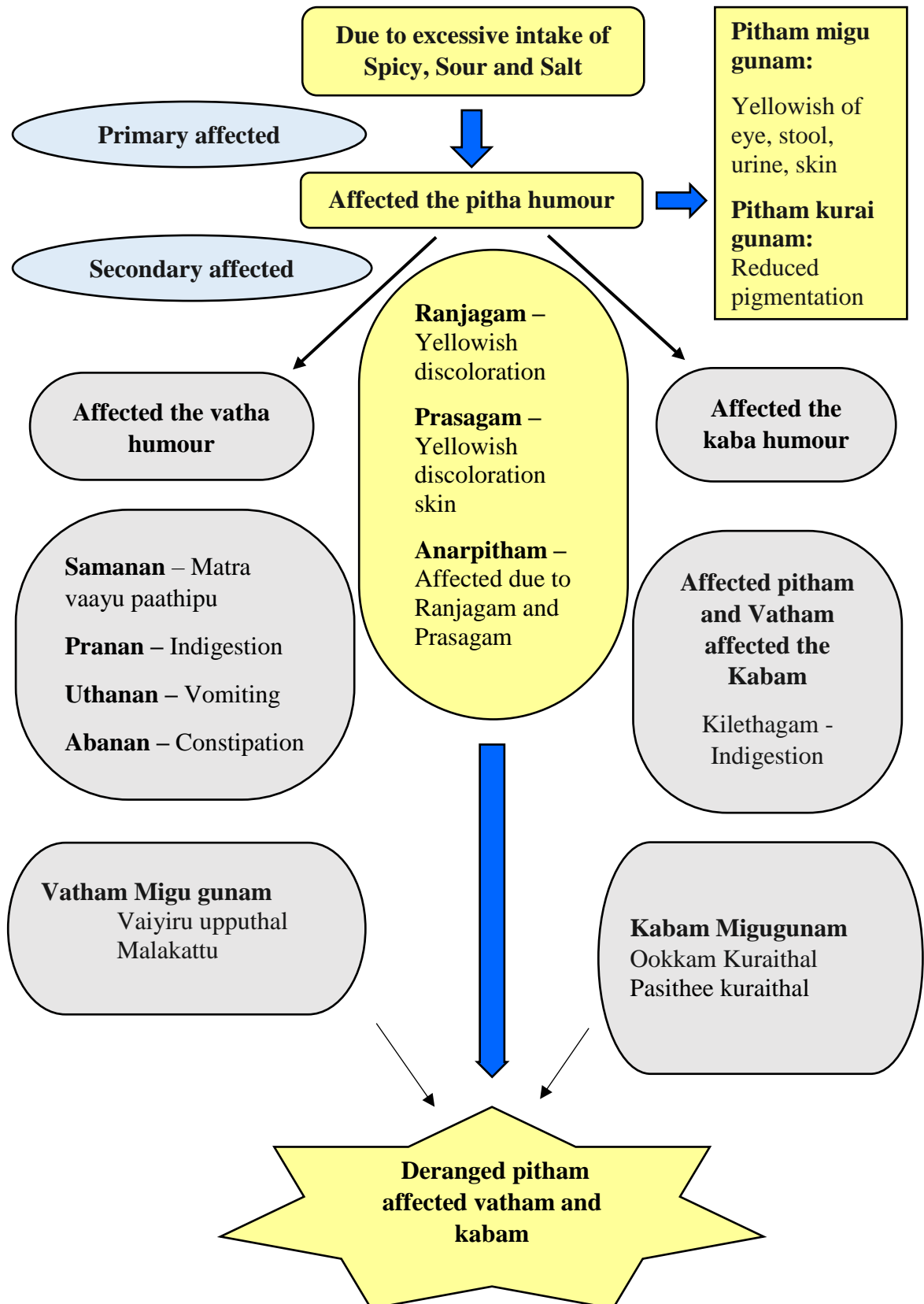
Yellow and blood like red colour urine indicates disease caused by pitha kaamalai.

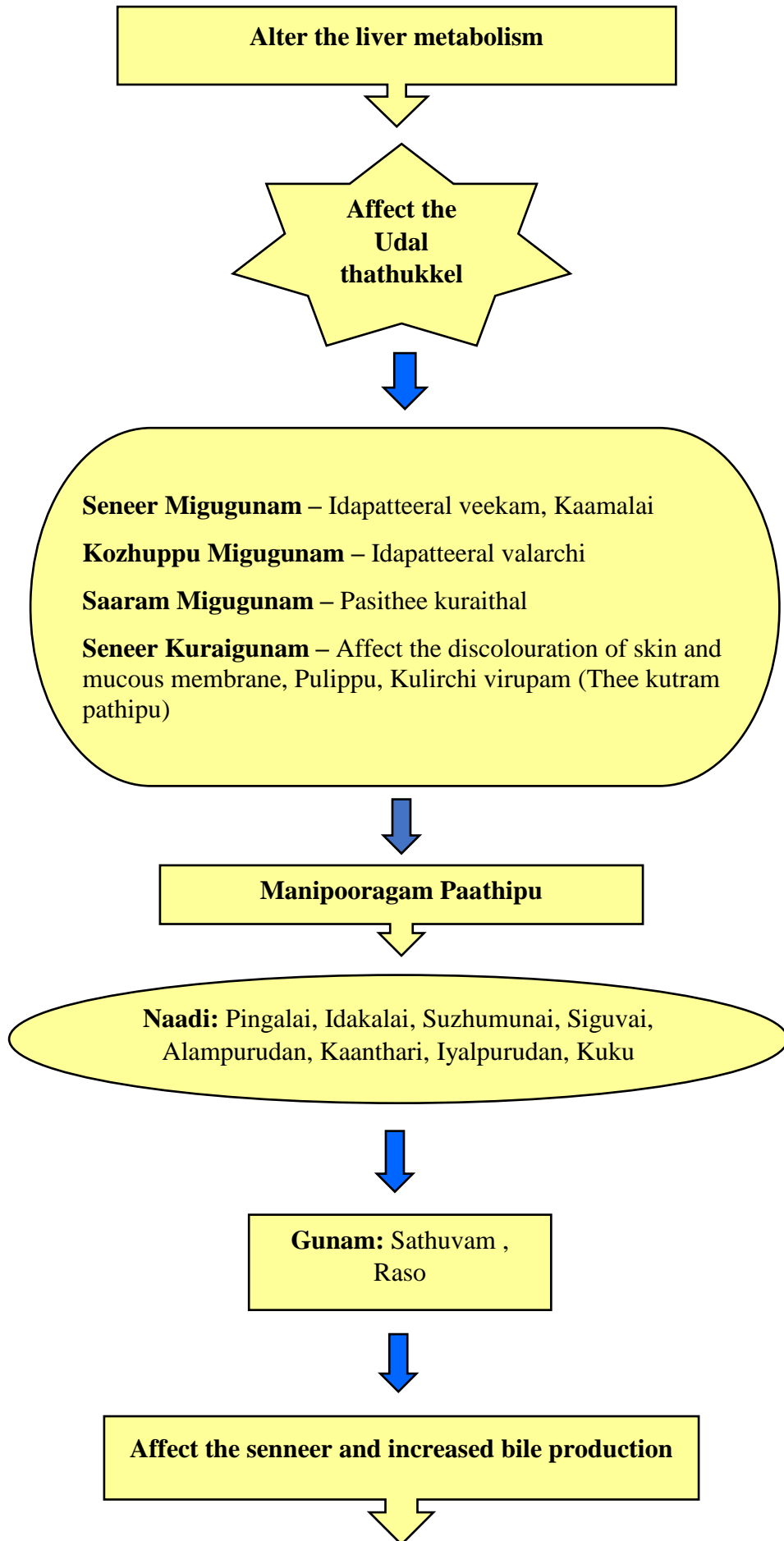
அந்நுரை பீதம் கருமை செம்மை
மன்னுறு நிறந்தரின் வருங்காமாலையென்
றுன்னிப் புரப்பர் ஒப்பில் பிடகரே.

Frothy urine with yellow, black and red colour urine indicates the jaundice.

5. PATHOGENESIS OF KALLEERAL NOI

As Liver disease is selected for the study, its pathogenesis has been explained below,



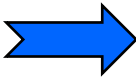


Yellowish discolouration of skin and mucous membrane due to the accumulation of bile pigment



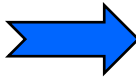
KALLEERAL NOI

Excessive salivation



Humor: Pitham
Naadi: Pinkalai
Iymporigal: Vaai
Mukkutram: Pitham migu gunam
Udalthathukal: All the 7 thathus got affected one by one.

Vomiting



Humor: Pitham + vatham
Naadi: Pinkalai + Idakalai
Mukkutram: Pitham migugunam
Udalthathukal: All the 7 thathus got affected one by one

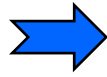
Bitterness



Humor: Kabam + Pitham
Naadi: Suzhumunai + Pingalai
Iymporigal: Naa
Mukkutram: Kabam kurai gunam, Pitham migu gunam
Udal thathukal: All the 7 thathus got affected one by one



**Loss of
appetite**



Humor: Pitham + Kabam

Naadi: Pinakalai + Suzhumunai

Muklutram: Pitham Kuraigunam

Udalthathukal: All the 7 thathus got affected one by one



**Indigestion
of food**

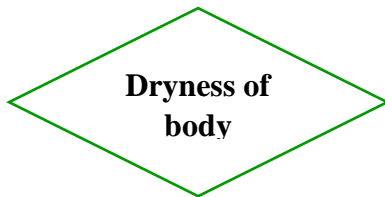


Humor: Pitham + Kabam

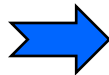
Naadi: Pinakalai + Suzhumunai

Muklutram: Pitham Kuraigunam

Udalthathukal: All the 7 thathus got affected one by one



**Dryness of
body**



Humor: Vatham (Viyanan) + Pitham (Prasagam)

Naadi: Idakalai + Pinkalai

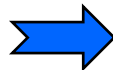
Iymporigal: Mei

Muklutram: Vaatham migugunam

Udalthathukal: All the 7 thathus got affected one by one



**Frog Like
Skin**



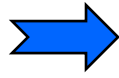
Humor: Vatham (Viyanan) + Pitham (Prasagam)

Naadi: Idakalai + Pinkalai

Iymporigal: Mei

Muklutram: Vaatham migugunam

Udalthathukal: All the 7 thathus got affected one by one

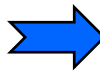
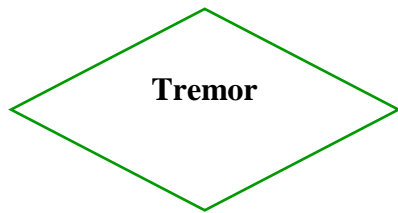


Humor: Kabam + Vatham

Naadi: Suzhumunai + Idakalai

Mukkutram: Kabam migugunam,
Vatham kuraigunam

Udalthathukal: All the 7 thathus got
affected one by one



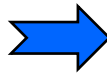
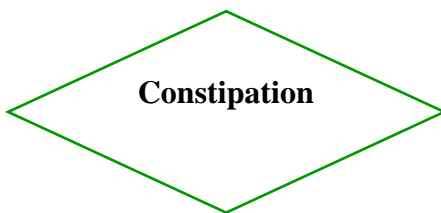
Humor: Vatham

Naadi: Idakalai

Iymporigal: Mei

Mukkutaram: Vatham migugunam

Udalthathukal: All the 7 thathus got
affected one by one



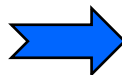
Humor: Vatham

Naadi: Idakalai

Kanmenthiriyam: Eruvaai

Mukkutram: Vatham migugunam

Udalthathukal: All the 7 thathus got
affected one by one



Humor: Vatham

Naadi: Idakalai

Kanmenthiriyam: Eruvaai

Mukkutram: Vatham migugunam

Udalthathukal: All the 7 thathus got
affected one by one.

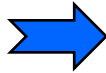
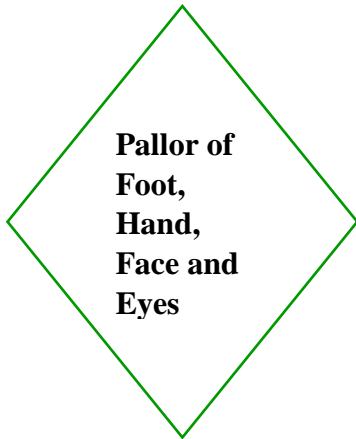


Humor: Kabam + Pitham

Naadi: Suzhumunai + Pingalai

Mukkutaram: Kabam migugunam,
Pitham kuraigunam

Udalthathukal: All the 7 thathus got
affected one by one



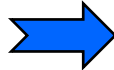
Humor: Kabam + Pitham

Naadi: Suzhumunai + Pinkalai

Iymporigal: Mei, Kan

Mukkutram: Pitham Kuraigunam

Udalthathukal: All the 7 thathus got
affected one by one



Humor: Pitham

Naadi: Pinkalai

Iymporigal: Mei, Kan

Mukkutram: Pitham migugunam

Udalthathukal: All the 7 thathus got
affected one by one

7. LINE OF TREATMENT

The Siddha treatment is not only for removal of disease, but for the prevention and improving the body condition. This is said as follows.

1. Kaappu (Prevention)
2. Neekkam (Treatment)
3. Niraivu (Restoration)

Siddha system has unequivocally stated that even during the time of conception, some defects creep into the fertilized embryo. The defects form the basis for the manifestation of certain constitutional diseases later on during the existence of the individual. The disease for which no known cause is given designated as diseases of idiopathic origin or hereditary disorders. In *Siddha* system such diseases are described as *Karma Noikal*.

1. Kaappu (Prevention)

பிணியணுகா விதி

"திண்ண மிரண்டுள்ளே சிக்க வடக்காமற்

பெண்ணின்பா லொன்றைப் பெருக்காமல் - உண்ணுங்கால்

நீர்சுருக்கி மோர்பெருக்கி நெய்யுருக்கி யுண்பவர் தம்

பேருரைக்கிற் போமே பிணி".

- பதார்த்த குணசிந்தாமணி.

In siddha system of medicine there are many ways to prevent disease by changing the lifestyle. It is well explained in Theraiyar Pinianuga vidhi.

2. Neekkam (Treatment)

The Three Uyir Thathus which are responsible for organization, regularization and integration of the bodily structures and their physiological functions are always kept in a state of equilibrium by word, thought, deed and food of the individual. The general aetiological factors for constitutional discomfort are said to be incompatible diet, mental and physical activities. So, it is essential to know the disease and the cause for the onset of the disease, before treating the patient so also to the nature of the patient, the severity of illness, the season and time of the occurrence of the diseases must be observed.

CLINICAL MANAGEMENT OF DISEASE CONDITION (LINE OF TREATMENT)

Patient needs good discussion, motivation and persuasion to accept the eventuality of disease and prepare for a lifestyle that provides optimization of metabolic status. In suitable effective medicinal preparations have to be administered in the beginning itself to neutralize and eliminate this disease. Siddhars aimed at bringing the *mukkutram* in equilibrium in the treatment of disease. Hence, liver disorders occur due to the vitiation of pitham and vatham. Pitham humour is formed due to fire element. So, to restore and maintain the balance of trithodam in the body, initially vamanam (emesis) and kazhichal (purgation) should be given.

Therapeutic emesis (vamanam)

“வமனத்தால் பித்தம் தாழும்”

Vamanam is the therapeutic vomiting which is a medicated emesis. This is an emesis treatment done through oral route to eliminate excess mucus by means of therapeutic vomiting. It has therapeutic effect in Pitham dominating conditions and has purification action in disease conditions as well as in healthy individuals to maintain general health.

Here, in liver disorders, Pitham is mainly deranged. Emetic medication is given to normalize the vitiated Pitham and eliminate other toxic products of metabolism.

Therapeutic purgation (viresanam)

“விரேசனத்தால் வாதம் தாழும்”

Viresanam (purgation) which eliminates excessive vitiated *vatham and pitham* from the body through the anal route. *Viresanam* is a purification therapy to detox the body and mind. *Viresanam* is a controlled process that gathers toxins from many Pitha locations in the body, concentrates it in the small intestine and then discharges it.

Vatham humour is formed due to combination of Earth and Air elements. Basic characteristics of pitham are oily, sharp, hot and light which are affected during

development of the disease. While the characters of vatham humour are dryness, lagu, hardness. So, we need to treat the disease by using food and medication with opposite characters namely heaviness, cool and soft nature. Foods that are great to balance the pitta are sweet, bitter and astringent in taste. Then the medication is prescribed in such a way that it will restore all the other humours in the body.

Diet:

1. Consume more leafy green veggies.
2. Add garlic to your food.
3. Add vitamin C to your diet.
4. Avoid excessive salty and sugary foods.
5. Avoid excessive consumption of red meats.
6. Avoid eating processed flours and grains.

Do's

1. Easily digestible foods must be taken.
2. Maintain a healthy weight.
3. Exercise regularly.
4. Drink plenty of water.
5. Cook vegetables by steaming or pan-fried.

Don't s

1. Avoid the use of illicit drugs.
2. Avoid contaminated needles.
3. Avoid smoking and alcohol.
4. Avoid Bingeing on fatty foods.
5. Do not eat high-calorie junk food often.

3. NIRAIVU (RESTORATION)

Patient needs good discussion and motivation and persuasion to accept the eventuality of the nature of the disease and prepare for a lifestyle that provides optimization

of metabolic status. In suitable effective medicinal preparations have to be administered in the beginning itself to neutralize and eliminate this disease.

Siddhars aimed at bringing the three dosham in equilibrium in the treatment of disease. Siddhars prescribed a minimum dosage initially and then increased the dose gradually. There are thousand preparations for Pitham and Vatham and for its complications in the form of Kudineer, Chooranam, Ilaam, Parpam and chenduram which is found in various Siddha text books. Siddha system lays a great importance on the observation of rules regarding diet in everyday life because the Siddha system has rightly realized, that the basic factor of the body is food.

8. MATERIALS & METHODS

1. REGISTRATION:

The clinical protocol of this study has been approved by Institutional Ethical committee of National institute of Siddha, Chennai – 47, India. **IEC No: NIS/IEC/14/2018-19/20**, and it was also registered in Clinical Trial Registry of India. **CTRI No: CTRI/2019/04/018815**.

2. STUDY TYPE:

Observational study

3. STUDY PLAN:

Activity / observation:

| | | |
|-----------------------------------|---|----------------|
| 1. Informed written consent | : | On Day 0 |
| 2. Demographic Data | : | On Day 0 |
| 3. History taking | : | On Day 0 |
| 4. Physical examination | : | On Day 0 |
| 5. Laboratory investigations | : | On Day 0 |
| 6. Inclusion / Exclusion criteria | : | On Day 0 |
| 7. Performing Neikkuri | : | On Day 1, 2, 3 |
| 8. Documentation | : | On Day 1, 2, 3 |

3. STUDY PLACE:

OPD & IPD,
Ayothidoss Pandithar hospital,
National Institute of Siddha,
Chennai - 600047.

4. SAMPLE SIZE:

- Kalleeral noi (Liver disease) patients : 20
- Healthy volunteers : 10
- Total : 30

5. SELECTION CRITERIA:

5.1 INCLUSION CRITERIA

- Age:15-70 Years
- Gender- All (Male, Female, Transgender)
- Patient having the following signs and symptoms
 1. Yellowish discoloration of skin and mucus membrane
 2. Abdominal pain in right upper quadrant
 3. Dark urine
 4. Weight loss
 5. Loss of appetite
- Patients who have already diagnosed with liver disease / abnormal LFT

Patient who fulfil any 2 clinical criteria will be included in study.

5.2 EXCLUSION CRITERIA:

- Patient who is not willing for Neerkuri & Neikkuri examination.
- Any serious illness

6.INVESTIGATIONS:

Establishing the diagnostic characteristics of “*kalleral noi*” (*Liver disease*) through

6.1 Eight fold examinations:

Naadi

- Naadi nithanam
- Naadi nadai

Meikuri (Physical Signs)

- Veppam
- Viyarvai
- Thodu vali

Naa (Tongue)

- Maa padithal
- Niram
- suvai
- Vaineer ooral
- Vedippu

Niram (Complexion)

- Karuppu
- Manjal
- Veluppu

Mozhi (Voice)

- Sama oli,
- Urattha oli,
- Thazhntha oli

Vizhi (Eyes)

- Niram
- Kanneer vadithal
- Erichal
- Peelai seruthal

Malam (Stools)

- Niram
- Sikkal
- Kalichal
- Sirutthal
- Seetham

Moothiram (Urine)

Neerkuri

- Niram
- Manam
- Edai
- Nurai
- Enjal

6.2 Manikkadainool:

Manikkadainool is a parameter to diagnose the disease by measuring the circumference of the wrist by means of thread and then expressing it in terms of patient's finger breadths.

6.3 Modern:

Complete blood count

Liver function test

Urine

Albumin

Sugar

Deposits

Special Investigation:

USG Abdomen

HBsAg confirmation

HBsAg (viral load) - if possible

7. METHODOLOGY OF NEIKKURI PROCEDURE:

Source of Oil:

Oil was procured in a mill from freshly ground gingelly seeds in stone grinder (Chekku) without any additives being added to avoid variations in the reactions. Because the presently marketed Gingelly oils are treated with additives for which reason, I have chosen the above method of additive free preparation.

BOWL -Glass bowl

Structure of the bowl:

Base- flat

Mouth –wide

Method of oil Instilling:

Distance between the bowl & the oil stick is 3-4 cm.

Below 3cm, the stick was inadvertently touching the bowl, above 4cm, the oil was dispersed due to air or it may cause ripples over the surface of the urine sample interfering with the results of the examination.

Diet Pattern:

Quality- balanced food with appropriate proportion of all six tastes

Quantity- up to the level of his appetite

Sleep Pattern

Sound sleep

Collection of Urine

(a) Time period –early morning (4am-6am) for IP & OP patients

(b) After the collection of urine sample, the neikkuri performed within one and half hour.

Neikkuri Picture:

(Photo documentation with standard Digital imaging)

Three slides of picture will be taken

1. At the moment after dropping of oil.

2. After 1 minute.
3. After 3 minutes.

Procedure:

- Collection of urine sample for Neikkuri in a sterile glass bowl. Then an instil drop of gingelly oil using a stick and observe the nature of spreading of oil in urine for 3 minutes.
- Photo documentation with standard digital imaging.
- Complete urine analysis.
- The above Neikkuri procedure is repeated (except urine analysis) for next two consecutive days.
- Neikkuri has been done parallelly in three different bowels for the same sample.

8. STUDY ENROLLMENT

- In the study, patients reporting at the OPD of Ayothidoss Pandithar Siddha Hospital with the clinical symptoms of “Kalleeral noi” such as Hepatitis and jaundice was referred to the Research group. Those patients were screened using the screening proforma (Form-I) and examined clinically for enrolling in the study based on the inclusion and exclusion criteria. Based on the inclusion criteria the patient was included first and excluded from the study on the same day if they hit the exclusion criteria.
- The patients who are going to be enrolled was informed (Form IV-A) about the study, and the objectives of the study in the language and terms understandable for them.
- After ascertaining the patient’s willingness, a written informed consent was obtained from them in the consent form (Form IV).
- All these patients were mentioned with unique registration card in which patients’ Registration number of the study, Address, Phone number and Doctors phone number etc. was given, so as to report to research group easily if any complication arises.
- Complete clinical history, complaints and duration, examination findings all were recorded in the prescribed proforma.

9. DATA COLLECTION FORMS:

Required information was collected from each patient by using following forms.

- **Form –I** Screening and selection Proforma
- **Form –I A** History Proforma on enrolment
- **Form II** Clinical Assessment on enrolment
- **Form–III** Laboratory investigations on enrolment, during the study
- **Form –IV** Consent form (Vernacular and English versions)
- **Form –IV A** Information sheet (Vernacular and English versions)

10. DATA MANAGEMENT:

- After enrolling the patient in the study, a separate file for each patient was opened and all forms was filed in the file. Patient No. was entered on the top of file for easy identification and arranged in a separate rack at the concerned OPD unit. Whenever study patient visits OPD during the study period, the respective patient file will be taken and necessary recordings was made at the case record form or other suitable form.
- The Data recordings was monitored for completion and compliance of patients by HOD.
- Any missed data found in during the study, it was collected from the patient, but the time related data will not be recorded retrospectively
- All collected data was entered using MS access/ excel software onto computer.

11. STATISTICAL ANALYSIS:

All collected data was entered into computer using MS Access / MS Excel Software by the investigator. The data was analysed using STATA Software. The level of significance was 0.05. Descriptive analysis was made and necessary tables / graphs generated to understand the profile of patients included in the study. The Statistical analysis for significance of different diagnostic Neerkuri – Neikkuri was done. Student ‘t’ test and chi-square test were proposed to be performed for quantitative and qualitative data.

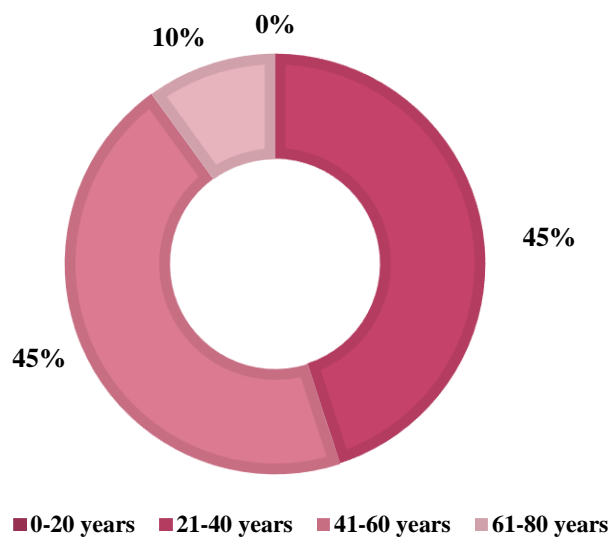
9. OBSERVATIONS AND RESULTS

AGE DISTRIBUTION

Table- 9.1 Age Distribution

| S.no | Age Distribution | Cases | Percentage |
|------|------------------|-----------|-------------|
| 1. | 0-20 years | 0 | 0 |
| 2. | 21-40 years | 9 | 45% |
| 3. | 41-60 years | 9 | 45% |
| 4. | 61-80 years | 2 | 10% |
| 5. | Total | 20 | 100% |

Fig 9. 1. Age Distribution



Observation:

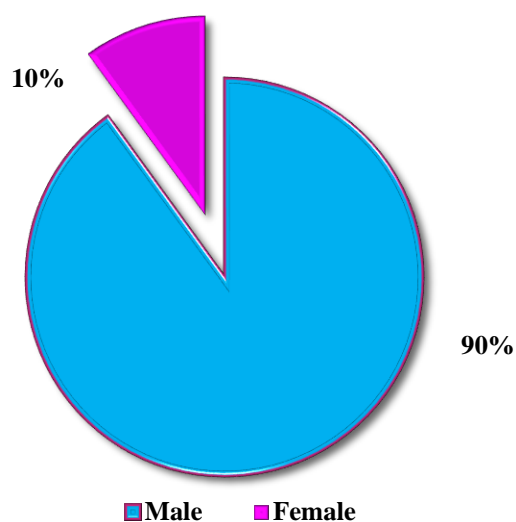
Among 20 cases, 9 cases that is 45% belonged to the category of age group 21 – 40 and 41 – 60 years. Only 10% cases belonged to the category of age group 61 – 80 years. None belonged to the category of 0 - 20years.

GENDER OF THE PATIENTS

Table –9.2 Gender of the patients

| S.no | Gender | Cases | Percentage |
|------|--------------|-----------|-------------|
| 1. | Male | 18 | 90% |
| 2. | Female | 2 | 10% |
| 3. | Total | 20 | 100% |

Fig 9. 2. Gender of the patients



Observation:

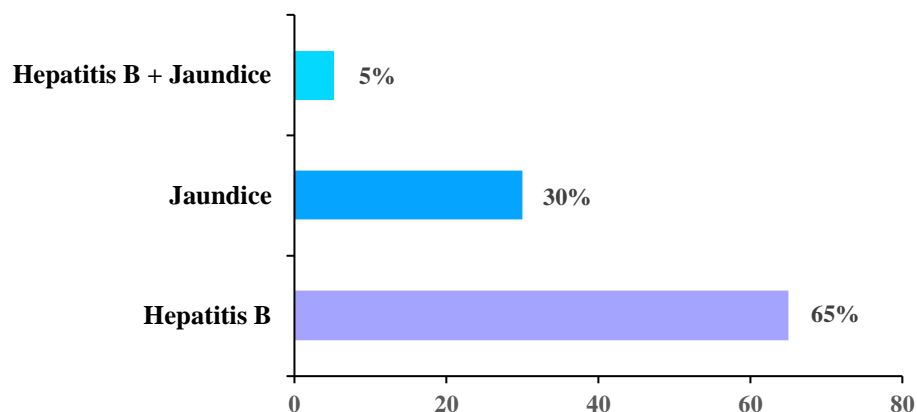
Among twenty cases, 18 cases that is 90% of cases were males and 2 cases that is 10% of cases were females.

ETIOLOGY OF KALLEERAL NOI:

Table –9.3 Etiology of Kalleeral noi

| S.no | Etiology | No. of cases | Percentage |
|------|------------------|--------------|-------------|
| 1. | Hepatitis B | 13 | 65% |
| 2. | Jaundice | 6 | 30% |
| 3. | Hep B + Jaundice | 1 | 5% |
| 4. | Total | 20 | 100% |

Fig 9.3. Etiology of Kalleeral noi



Observation:

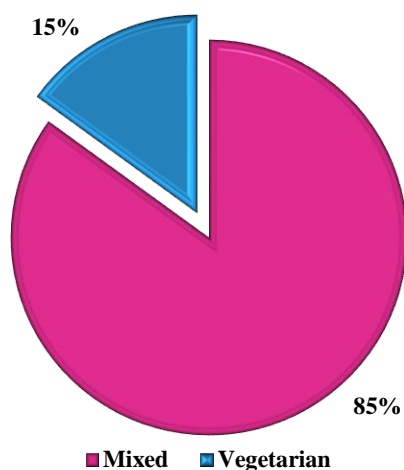
Among twenty cases, 65% cases were affected with Hepatitis B. 30% cases were affected with jaundice and 5% cases that is 1 patient was affected with both hepatitis B and jaundice.

FOOD HABITS:

Table –9. 4. Food Habits

| S.no | Food habits | No. of cases | Percentage |
|------|--------------|--------------|-------------|
| 1. | Mixed | 17 | 85% |
| 2. | Veg | 3 | 15% |
| 3. | Total | 20 | 100% |

Fig 9. 4. Food Habits



Observation

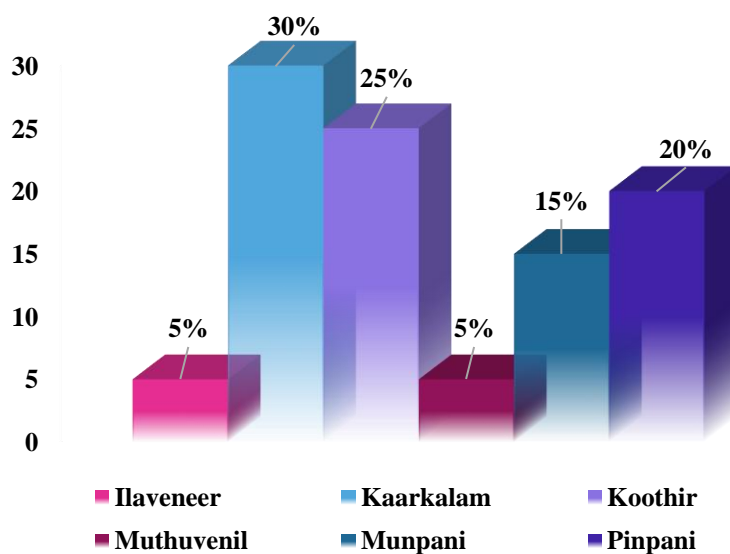
Among 20 cases, 17 cases that is 85% of cases were having mixed diet and only 3 cases that is 15% cases were vegetarian.

NOI UTRA KAALAM

Table 9.5. Noi Utra kalam

| S.no | Noiutra kalam | Cases | Percentage |
|------|---------------|-----------|-------------|
| 1. | kaar | 6 | 50% |
| 2. | koothir | 5 | 25% |
| 3. | Ilavenir | 1 | 5% |
| 4. | Muthuvenil | 1 | 5% |
| 5. | Munpani | 3 | 15% |
| 6. | Pinpani | 4 | 20% |
| 7. | Total | 20 | 100% |

Fig 9. 5. Noi ultra kalam



Observation

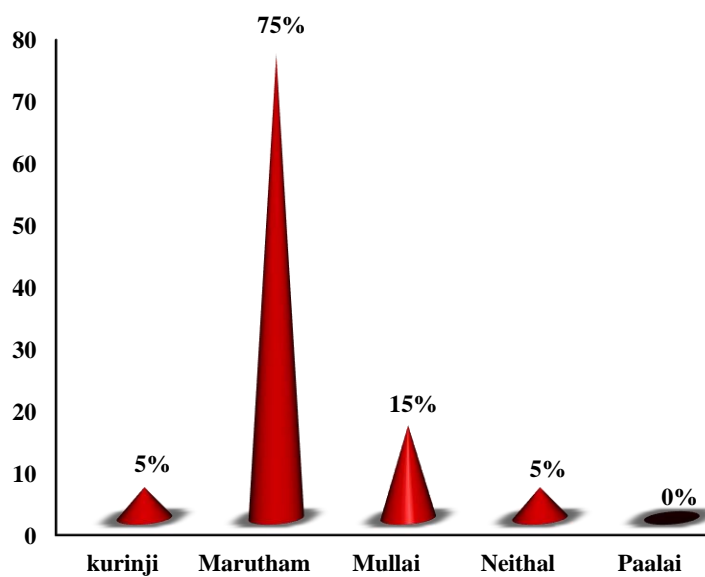
Among 20 cases, 5% of cases were affected in ilaveneer kalam, 30% cases were affected in kaar kalam, 25% cases were affected in koothir kalam, 5% cases were affected in Muthuvenil kalam, 15% cases affected in munpani kalam, 20% of cases were affected in Pinpani kalam.

NOI UTRA NILAM

Table- 9.6. Noi Utra Nilam

| S.no | Nilam | No. of cases | Percentage |
|------|--------------|--------------|-------------|
| 1. | Kurunji | 1 | 5% |
| 2. | Mullai | 3 | 15% |
| 3. | Marutham | 15 | 75% |
| 4. | Neithal | 1 | 5% |
| 5. | Paalai | 0 | 0% |
| 6. | Total | 20 | 100% |

Fig 9. 6. Noi ultra Nilam



Observation

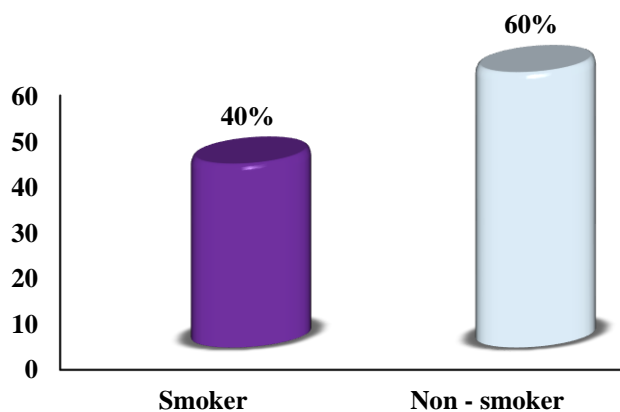
Among 20 cases, 1 patient i.e 5% are from Kurunji, 15 patients i.e 75% are from marutham, 3 patients i.e 15% are from Mullai and 1 patient from Neithal. i.e. 5% patients.

PERSONAL HABITS:

Table – 9.7 Personal Habits

| S. No | Personal Habit | Cases | Percentage |
|-------|----------------|-----------|-------------|
| 1. | Smoker | 8 | 40% |
| 2. | Non-Smoker | 12 | 60% |
| 3. | Total | 20 | 100% |

Fig 9.7. Personal habits



Observation:

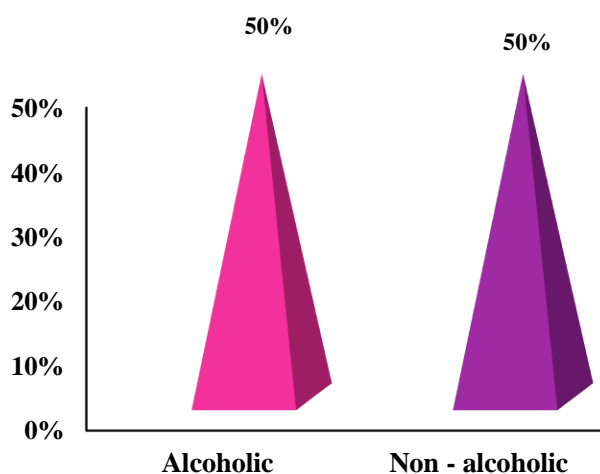
Among 20 cases, 8 cases i.e 40% had past history of smoking.

Past history of Alcoholism:

Table -9. 8 Past history of Alcoholism

| S.no | Past history of alcoholism | No of cases | Percentage |
|------|----------------------------|-------------|-------------|
| 1. | Alcoholic | 10 | 50% |
| 2. | Non- Alcoholic | 10 | 50% |
| 3. | Total | 20 | 100% |

Fig. 9.8. Past history of Alcoholism



Observation:

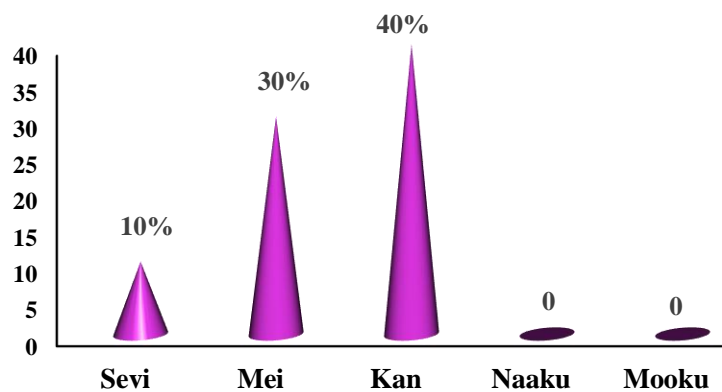
Among 20 cases, 10 cases i.e 50% had past history of alcoholic.

GNAENTHIRIYANGAL:

Table – 9.9. Gnanenthiriyangal

| S.No. | Gnanenthiriyangal | No. of cases | Percentage |
|-------|-------------------|--------------|------------|
| 1. | Sevi | 2 | 10% |
| 2. | Mei | 6 | 30% |
| 3. | Kan | 8 | 40% |
| 4. | Naaku | 0 | 0 |
| 5. | Mooku | 0 | 0 |

Fig – 9.9. Gnanenthiriyangal



Observation

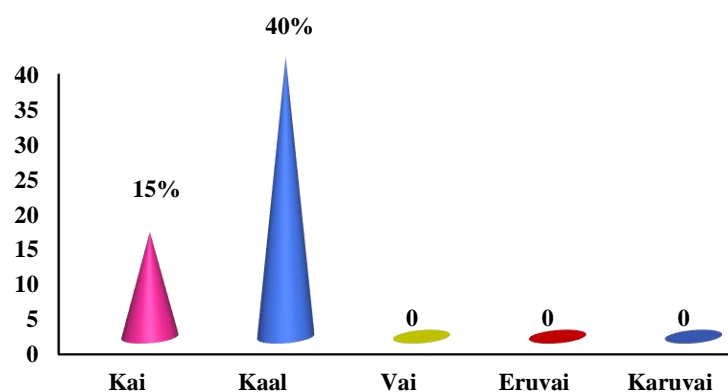
Among 20 cases, 10% patients were affected with sevi, Mei was affected in 30% patients and Kan was affected in 40% patients.

KANMENTHIRIYANGAL:

Table – 9.10 Kanmenthiriyangal

| S.no | Kanmenthiriyangal | No. of cases | Percentage |
|------|-------------------|--------------|------------|
| 1. | Kai | 3 | 15% |
| 2. | Kaal | 8 | 40% |
| 3. | Vai | 0 | 0 |
| 4. | Eruvai | 0 | 0 |
| 5. | Karuvai | 0 | 0 |

Fig – 9.10 Kanmenthiriyangal



Observation

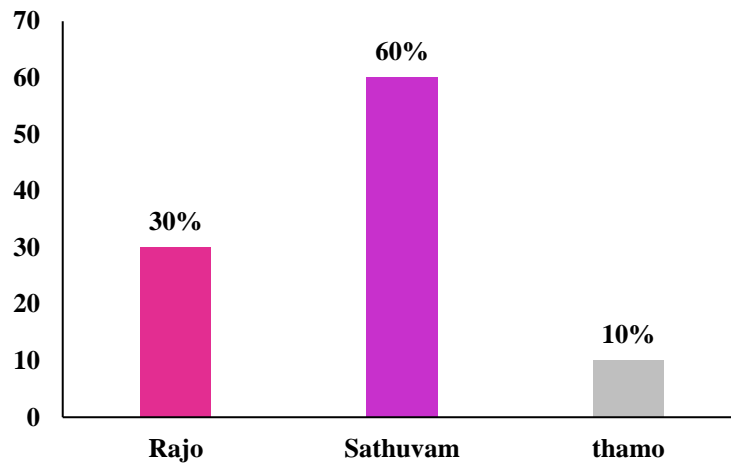
Among 20 cases, kai was affected in 15% (3) patients, kaal was affected in 40% (8) patients.

GUNAM:

Table – 9.11 Gunam

| S. No | Gunam | Cases | Percentage |
|-------|--------------|-----------|-------------|
| 1. | Sathuvam | 12 | 60% |
| 2. | Raso gunam | 6 | 30% |
| 3. | Thamo gunam | 2 | 10% |
| 4. | Total | 20 | 100% |

Fig 9.11. Gunam



Observation

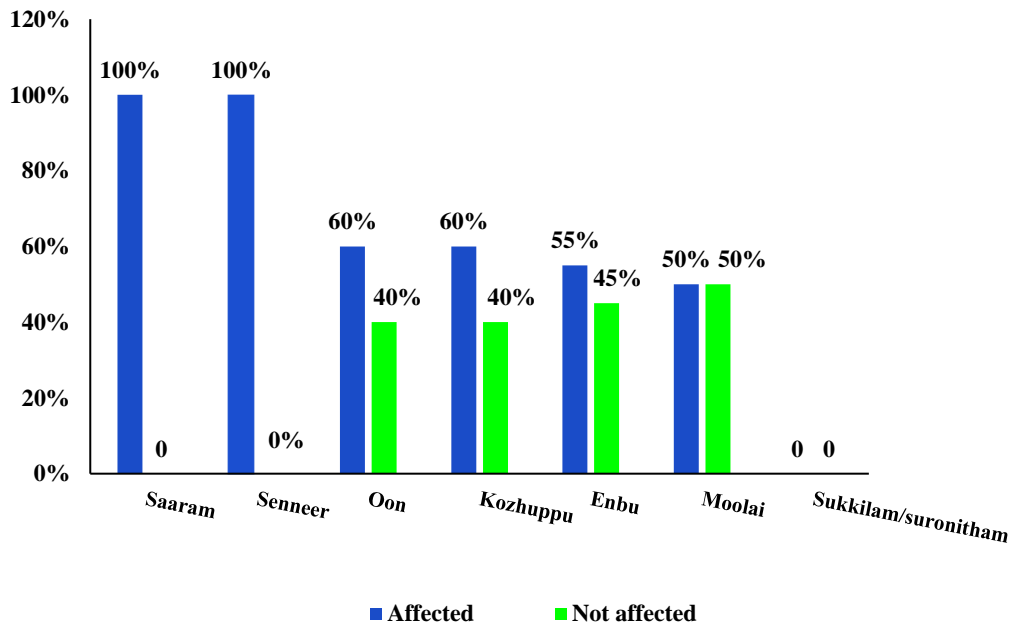
Among 20 cases, 12 patients i.e. 60% have sathuva gunam, 6 patients i.e 30% have rajo gunam and 2 patients i.e 10% have thamo gunam.

UDAL THATHUKKAL:

Table – 9.12 Udal thathukkal

| S.NO | Udal thathukkal | No. of cases Affected | Percentage | Cases not affected | Percentage |
|------|-----------------------|-----------------------|------------|--------------------|------------|
| 1. | Saaram | 20 | 100% | 0 | 0% |
| 2. | Senneer | 20 | 100% | 0 | 0% |
| 3. | Oon | 12 | 60% | 8 | 40% |
| 4. | Kozhuppu | 12 | 60% | 8 | 40% |
| 5. | Enbu | 11 | 55% | 9 | 45% |
| 6. | Moolai | 10 | 50% | 10 | 50% |
| 7. | Sukkilam / suronitham | 0 | 0 | 0 | 0 |

Fig 9.12 Udal thaathukkal



Observation:

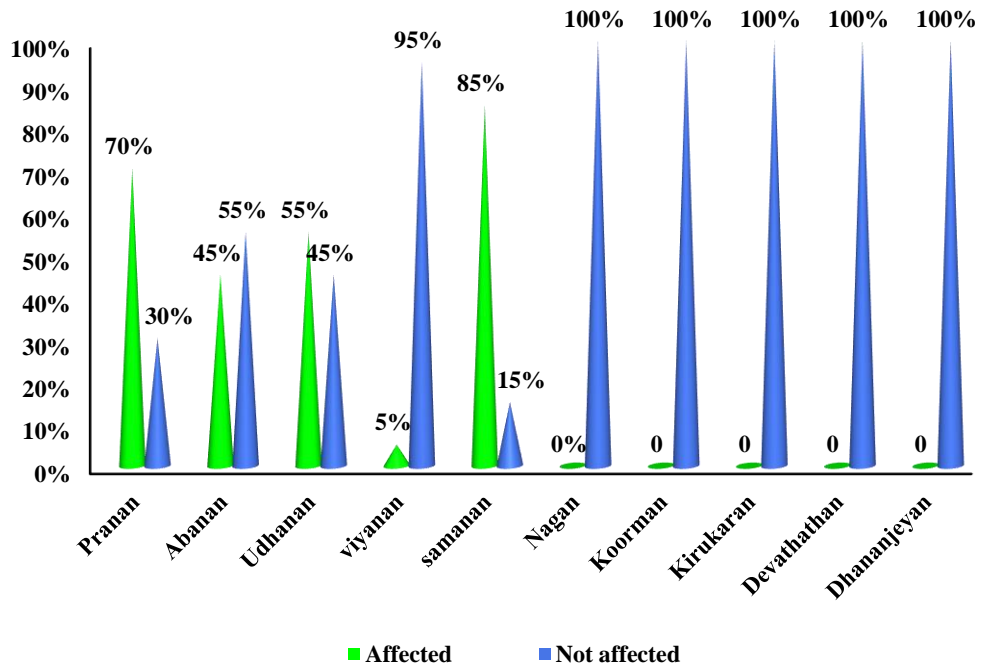
Out of 20 cases, all the patients (100%) were affected with Saaram. Senneer was affected in 18 cases (90%) and not affected in 2 cases (10%). Oon was affected in 12 cases (60%) and not affected in 8 cases (40%). Kozhuppu was affected 12 cases (60%) and not affected in 8 (40%) cases. Enbu was affected 11 cases (55%) and not affected in 9 cases. Moolai was affected in 10 cases (50%) and not affected in 10 cases (50%). Sukkilam/ Suronitham was not affected in any of the cases of this study.

UYIR THATHUKKAL – VATHAM

Table – 9.13. Uyir Thathukkal

| S.NO | Vali | Affected | Percentage | Not affected | Percentage |
|------|--------------|----------|------------|--------------|------------|
| 1. | Pranan | 14 | 70% | 6 | 30% |
| 2. | Abanan | 9 | 45% | 11 | 55% |
| 3. | Udhanan | 11 | 55% | 9 | 45% |
| 4. | Viyanan | 1 | 5% | 19 | 95% |
| 5. | Samanan | 17 | 85% | 3 | 15% |
| 6. | Nagan | 0 | 0% | 20 | 100% |
| 7. | Koorman | 0 | 0% | 20 | 100% |
| 8. | Kirukaran | 0 | 0% | 20 | 100% |
| 9. | Devadaththan | 0 | 0% | 20 | 100% |
| 10. | Dhananjayan | 0 | 0% | 20 | 100% |

Fig – 9.13. Uyir Thathukkal - Vatham

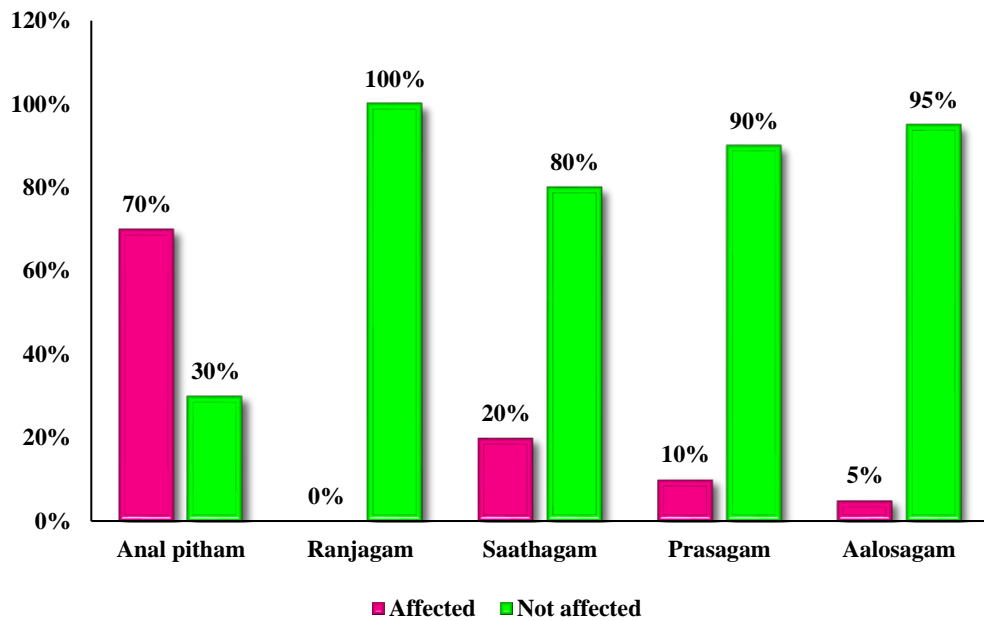


UYIR THATHUKKAL – AZHAL

Table – 9.14. Uyir Thathukkal - Azhal

| S.NO | Azhal | No.of cases Affected | Percentage | Cases no affected | Percentage |
|------|-------------|----------------------|------------|-------------------|------------|
| 1. | Anal pitham | 14 | 70% | 6 | 30% |
| 2. | Ranjakam | 0 | 0% | 20 | 100% |
| 3. | Saathagam | 4 | 20% | 16 | 80% |
| 4. | Prasakam | 2 | 10% | 18 | 90% |
| 5. | Aalosakam | 1 | 5% | 19 | 95% |

Fig – 9.14. Uyir Thathukkal - Pitham



Observation

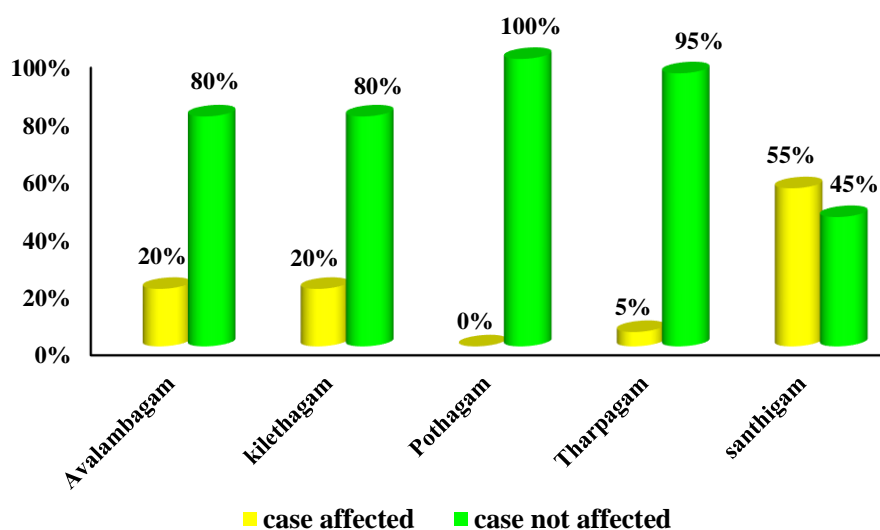
Out of 20 cases, in 14 cases (70%) Paasagam was affected and 4 cases (20%) Saathakam was affected and in 2 cases (10%) Prasakam was affected and in 1 case (5%) Alosagam was affected.

UYIR THATHUKKAL – IYYAM

Table – 9.15. Iyyam

| S.NO | Iyyam | No. of cases Affected | Percentage | Cases not affected | Percentage |
|------|-------------|-----------------------|------------|--------------------|------------|
| 1. | Avalambagam | 4 | 20% | 16 | 80% |
| 2. | Kilethagam | 4 | 20% | 16 | 80% |
| 3. | Bothagam | 0 | 0% | 20 | 100% |
| 4. | Tharpagam | 1 | 5% | 19 | 95% |
| 5. | Santhigam | 9 | 55% | 11 | 45% |

Fig – 9.15. Uyir Thathukkal - Iyyam



Observation

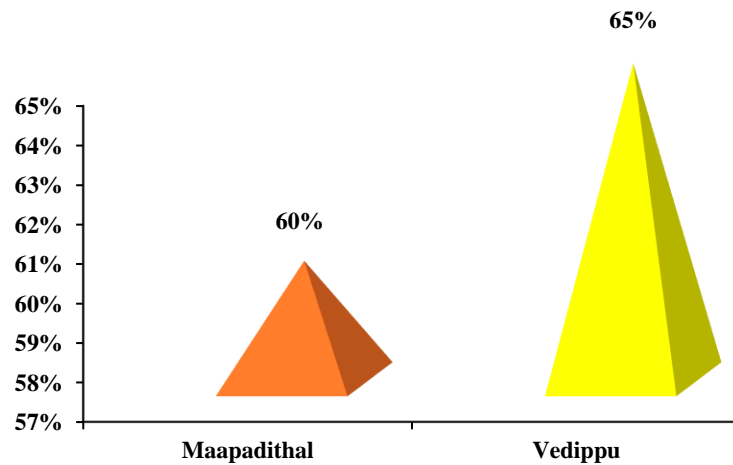
Out of 20 cases, in 4 cases (20%) Avalambagam was affected and in 4 cases (20%) kilethagam was affected and in 1 case (5%) Tharpagam was affected and in 9 cases (55%) Santhigam was affected.

ENVAGAI THERVUGAL

Table- 9. 16 -Naa

| Naa | | No. of cases | Percentage |
|-------------|-------------|--------------|------------|
| Thanmai | Maapadithal | 12 | 60% |
| | Vedippu | 13 | 65% |
| Niram | Karuppu | 1 | 5% |
| | Manjal | 15 | 75% |
| | Veluppu | 4 | 20% |
| Vaineeroral | Increased | 0 | 0% |
| | Reduced | 5 | 25% |
| | Iyalbu | 15 | 75% |

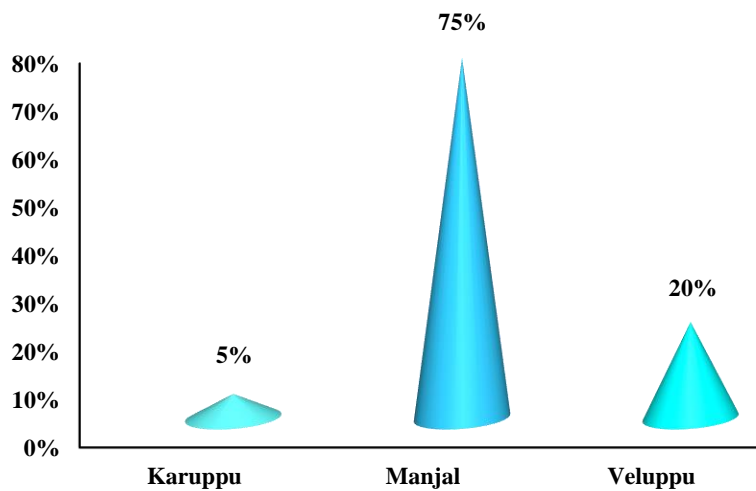
Fig 9. 16. Naa Thanmai



Observation

Out of 20 patients, Maa padithal was seen in 12 cases (60%) and Vedippu was seen in 13 cases (65%).

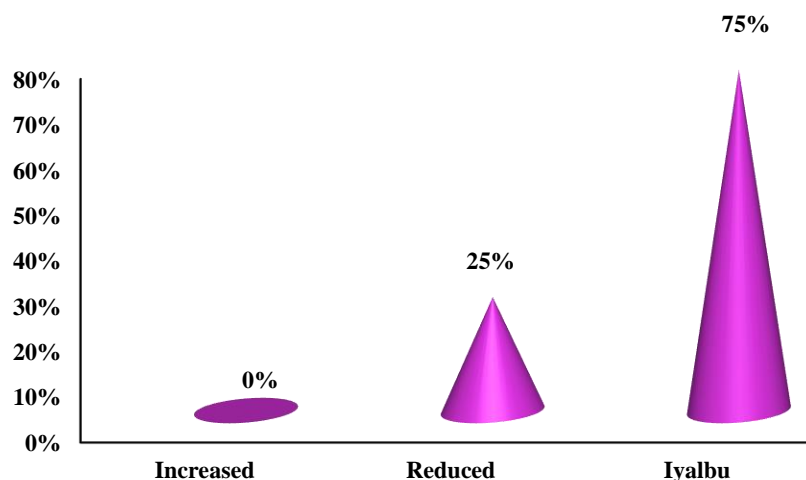
Fig 9. 17. Naa Niram



Observation

Among 20 cases, 1 patient (5%) had black discoloration in tongue and in 15 cases (75%) had yellow discoloration in tongue and white discoloration seen in cases of 4 patients (20%).

Fig 9. 18. Salivation



Observation

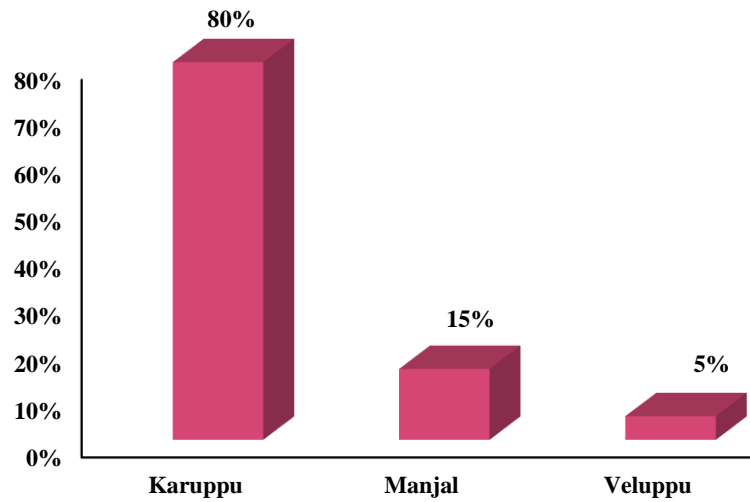
Among 20 cases, in 5 case salivation is reduced (25%), 15 cases (75%) were have normal salivation

NIRAM, MOZHI & VIZHI:

Table- 9. 17. Niram, Mozhi and Vizhi

| Niram, Mozhi and Vizhi | | Kalleeral noi Cases | Percentage |
|------------------------|-----------------|---------------------|------------|
| Niram | Karuppu | 16 | 80% |
| | Manjal | 3 | 15% |
| | Veluppu | 1 | 5% |
| Mozhi | Sama oli | 18 | 90% |
| | Uratha oli | 1 | 5% |
| | Thazhantha oli | 1 | 5% |
| Vizhi-Niram | Karuppu | 0 | 0% |
| | Manjal | 8 | 40% |
| | Sivappu | 0 | 0% |
| | Veluppu | 0 | 0% |
| | Iyalbu | 12 | 60% |
| Vizhiyin Thanmai | Kanneer | 3 | 15% |
| | Kan erichchal | 5 | 25% |
| | Peelai seruthal | 1 | 5% |
| | Iyalbu | 11 | 55% |

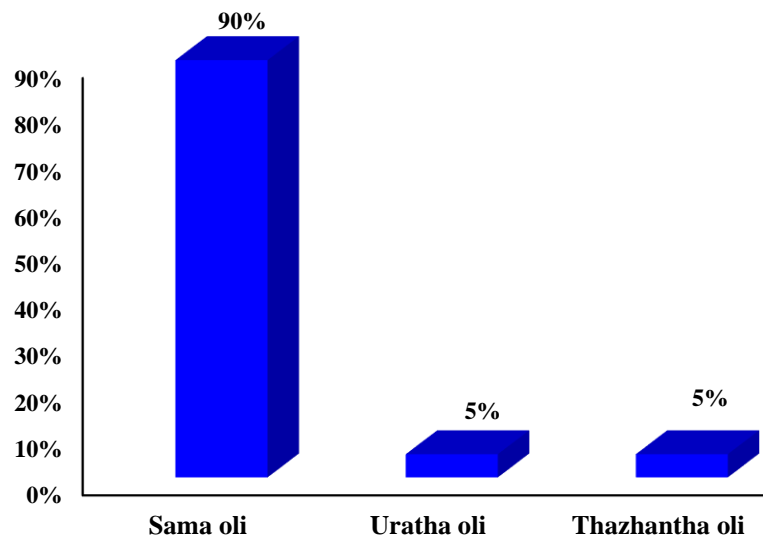
Fig 9. 19. Niram



Observation

Among 20 cases, 16 patients (80%) are black in colour and 3 patients (15%) are yellow in colour and 1 patient (5%) are white in colour.

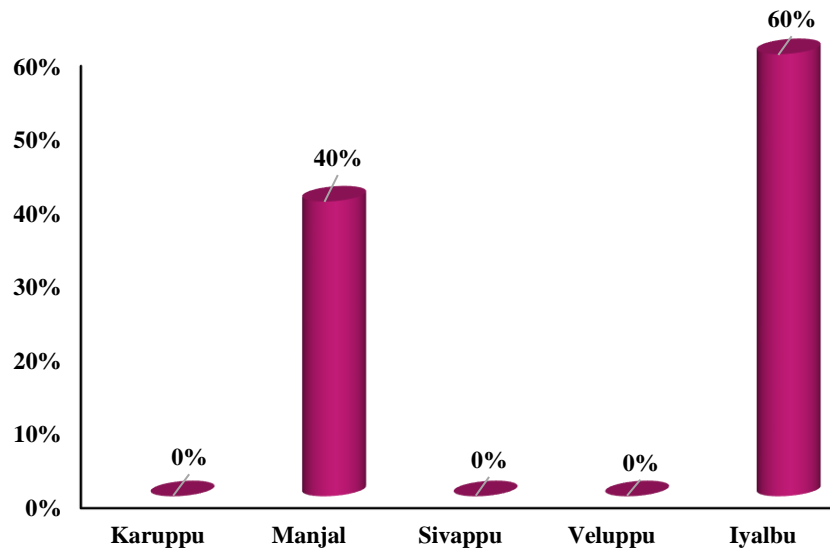
Fig 9. 20. Mozhi



Observation

Among 20 patients, 18 cases (90%) had Sama oli, 1 patient (5%) had both Uratha oli and Thazhantha oli.

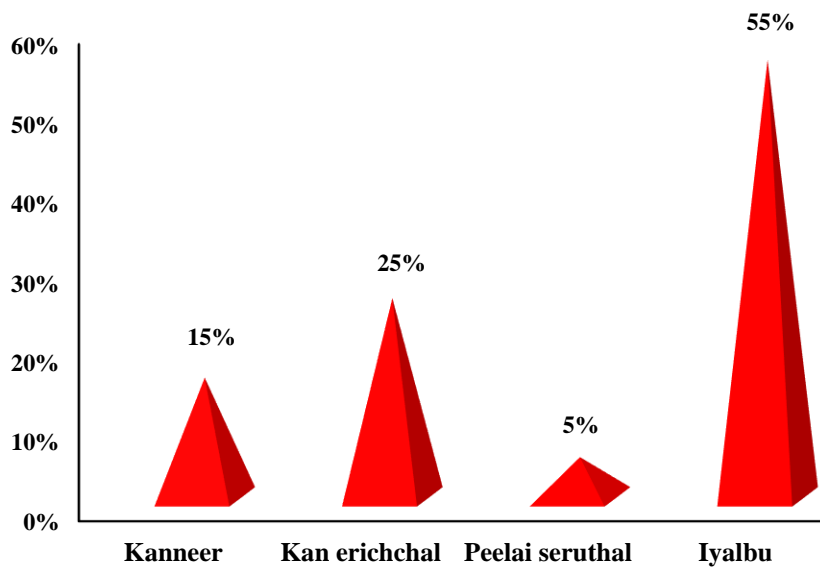
Fig 9. 21. Vizhiyin niram



Observation

Among 20 cases, 8 cases (40%) had yellow discoloration of eyes and 12 cases (60%) had normal eyes.

Fig 9. 22. Vizhiyin Thanmai



Observation

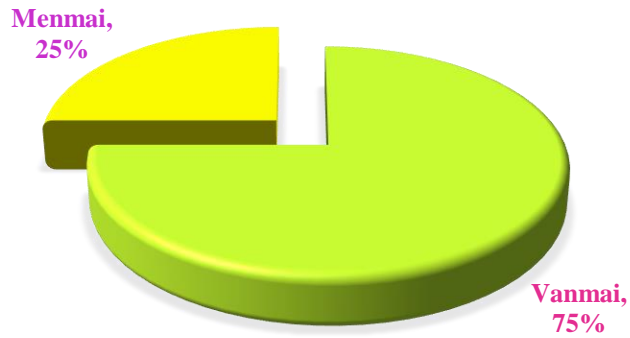
Among 20 cases, 3 cases (15%) had decreased kanneer and 5 cases (3.33%) had kan erichchal and 1 case (3.33%) had Peelai seruthal.

NAADI

Table- 9. 18. Naadi

| Naadi | | Kalleeral noi No of cases | Percentage |
|-------------------------------------|--------------|------------------------------|-------------|
| Naadi nithanam (pulse appraisal) | Vanmai | 15 | 75% |
| | Menmai | 5 | 25% |
| | Total | 20 | 100% |
| Naadi panbu (pulse character) | Kathithal | 8 | 40% |
| | Puranadai | 12 | 60% |
| | Total | 20 | 100% |
| Naadi Nadai (pulse play) | VathaPitham | 8 | 40% |
| | Vatha Kabam | 2 | 10% |
| | Pitha Vatham | 8 | 40% |
| | Pitha Kabam | 1 | 5% |
| | Kaba Vatham | 1 | 5% |
| | Kaba Pitham | 0 | 0% |
| | Total | 20 | 100% |

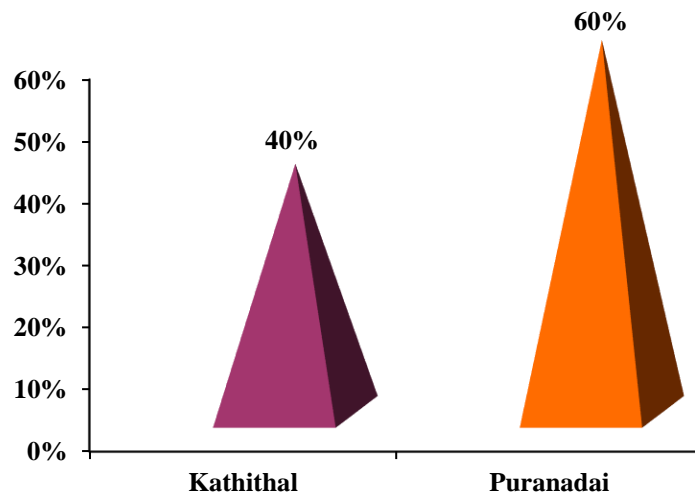
Fig 9.23 Naadi Nithanam



Observation

Among 20 cases, 15 patients (75%) have Vanmai pulse and 5 patients (25%) have Menmai pulse.

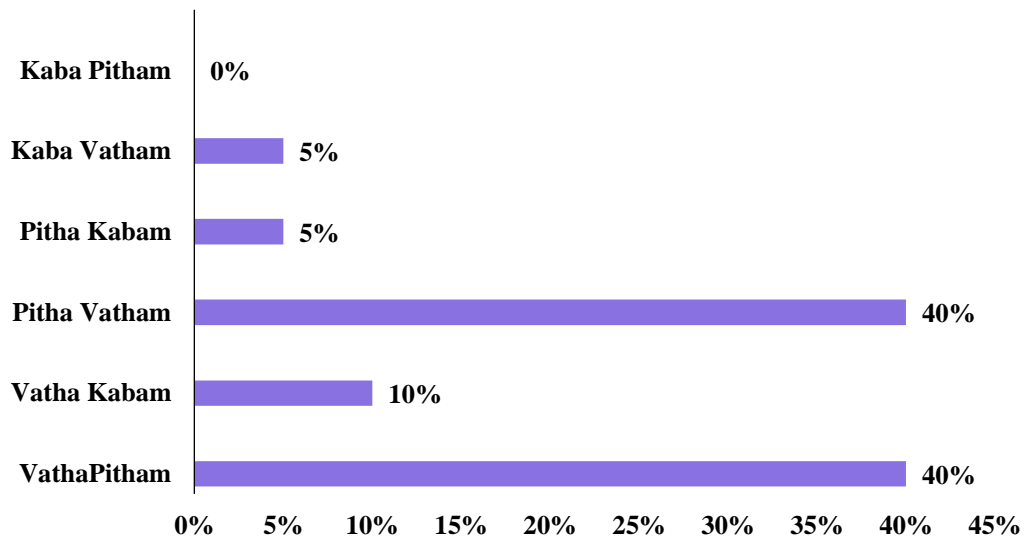
Fig - 9. 24. Naadi panbu



Observation

Among 20 cases, 8 patients (40%) have character of pulse is Kathithal and 12 patients (60%) have Puranadai character in pulse.

Fig 9.25. Naadi nadai



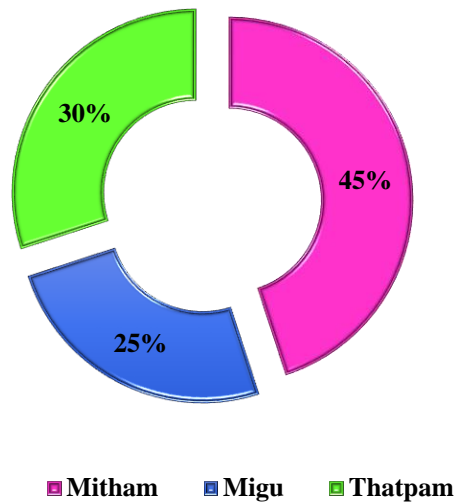
Observation

Among 20 cases, 8 patients (40%) have Vatha Pitham, 2 cases (10%) have Vatha Kabam 8 cases (40%) have Pitha Vatham, 1 patient (5%) have Pitha Kabam and 1 Patient (5%) Kaba Vatham.

Table- 9.19. Sparisam

| Meikkuri | | Kalleeral noi No. of cases | Percentage |
|-----------------|---------------|---------------------------------------|-------------------|
| Veppam | Mitham | 9 | 45% |
| | Migu | 5 | 25% |
| | Thatpam | 6 | 30% |
| | Total | 20 | 100% |
| Viyarvai | Increased | 2 | 10% |
| | Reduced | 0 | 0% |
| | Normal | 18 | 90% |
| | Total | 20 | 100% |
| Thanmai | Thodu vali | 1 | 5% |
| | Udal Varatchi | 0 | 0% |
| | Normal | 19 | 95% |
| | Total | 20 | 100% |

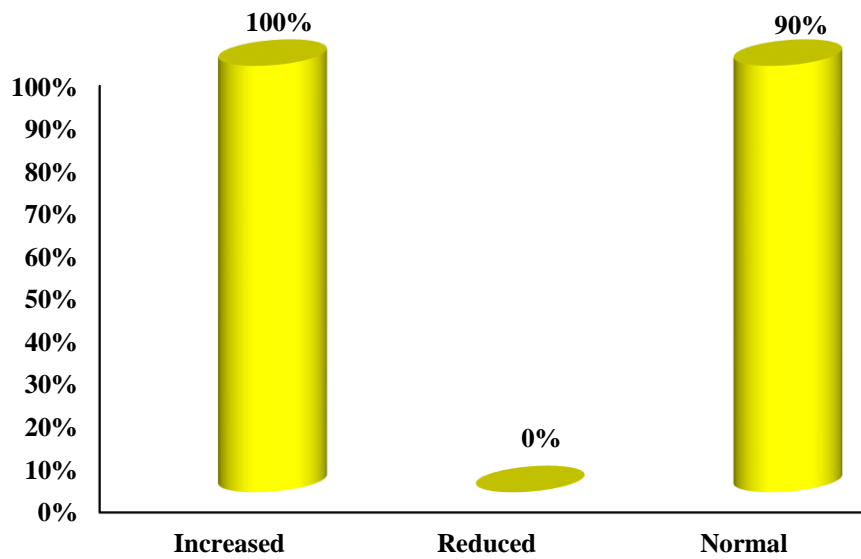
Fig 9.26 Veppam



Observation

Among 20 cases, 9 patients (45%) have Mitha Veppam and 5 patients (25%) have Migu veppam, 6 patients (30%) have Thatpa sparisam.

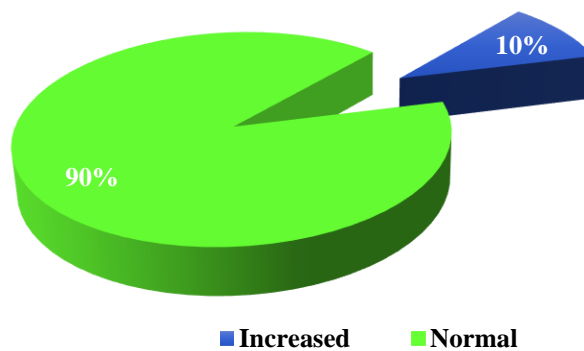
Fig 9.27. Viyarvai



Observation

Out of 20 patients sweating was excessive in 2 cases (10%) and normal in 18 cases (90%).

Fig-9.28. Viyarvai



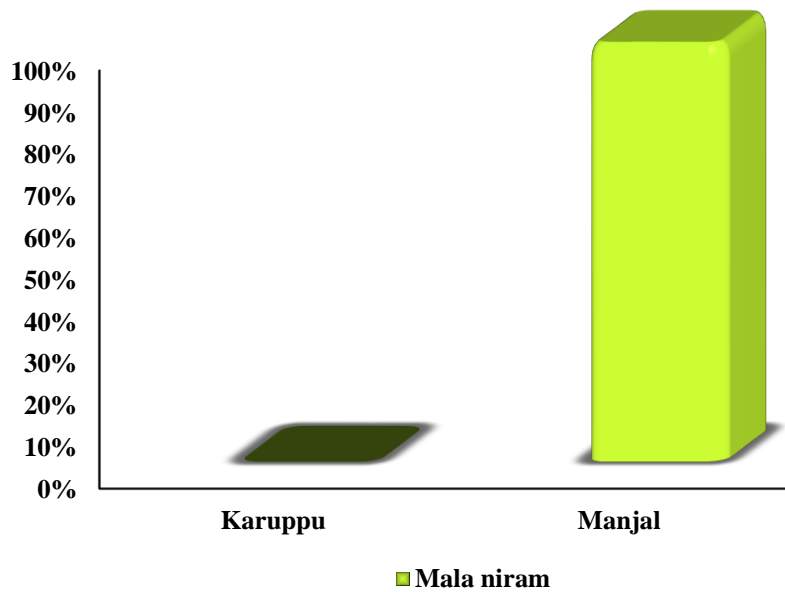
Observation

Out of 20 patients sweating was excessive in 2 cases (10%) and normal in 18 cases (90%).

Table – 9.20. Malam

| Malam | | Kalleeral noi No. of cases | Percentage |
|--------------|-------------|---------------------------------------|-------------------|
| Niram | Karuppu | 0 | 0% |
| | Manjal | 20 | 100% |
| Thanmai | Mala Sikkal | 10 | 50% |
| | Siruthal | 5 | 25% |
| | Kalichal | 0 | 0% |
| | Seetham | 0 | 0% |
| | Venmai | 1 | 5% |

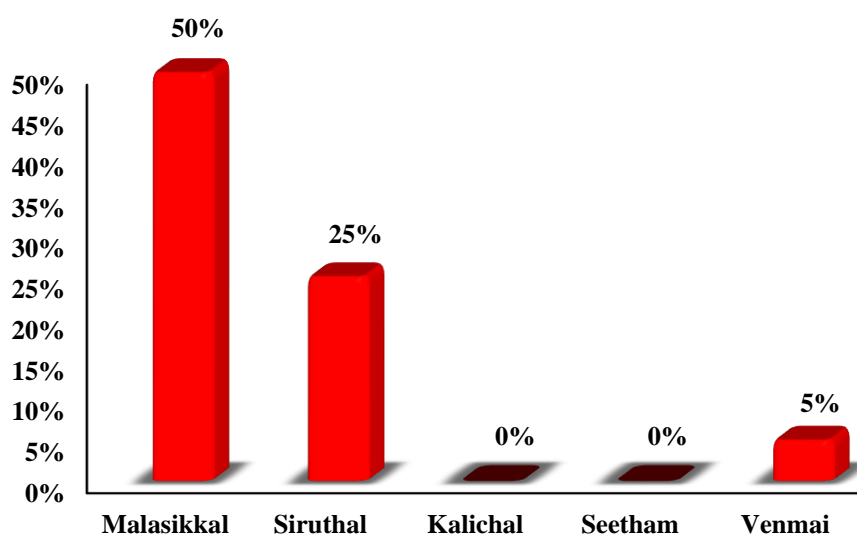
Fig 9. 29. Mala Niram



Observation

Out of 20 cases, all the patient has yellowish coloured stools.

Fig 9.30. Malam Thanmai



Observation

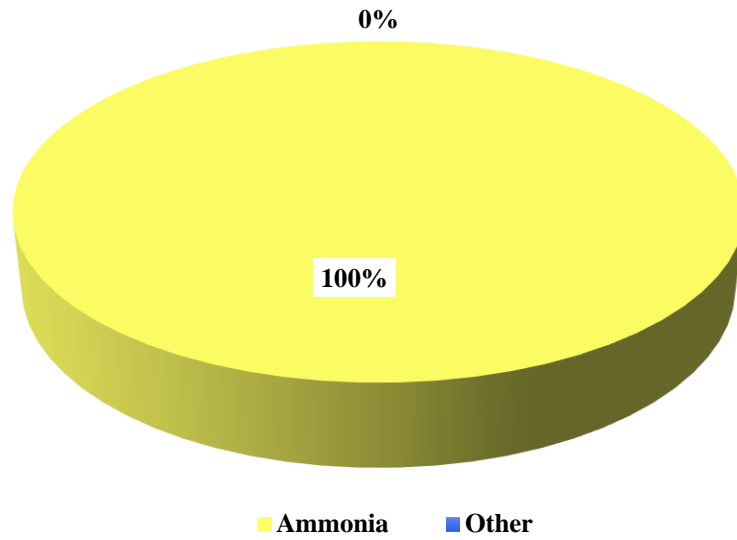
Out of 20 cases, only 10 cases (50%) of them had mala sikkal (constipation), 5 cases (25%) had poorly formed stools and 1 case (5%) had vemmai stools.

MOOTHIRAM

Table- 9.21. Moothiram

| Neerkuri | | Kalleeral noi | |
|------------|---------------------------|---------------|------------|
| | | No. of cases | Percentage |
| Neer Manam | Ammoniacal (theenattram) | 20 | 100% |
| Neer Niram | Pale yellow (semmanjal) | 0 | 0% |
| | Yellow (manjal) | 20 | 100% |
| | Colourless(niramatrathu) | 0 | 0% |
| | Dark brown (arakku niram) | 0 | 0% |
| Nurai | Absent | 20 | 100% |
| | Present | 0 | 0% |
| Edai | Normal | 20 | 100% |
| | High | 0 | 0% |
| Enjal | Absent | 20 | 100% |
| | Present | 0 | 0% |

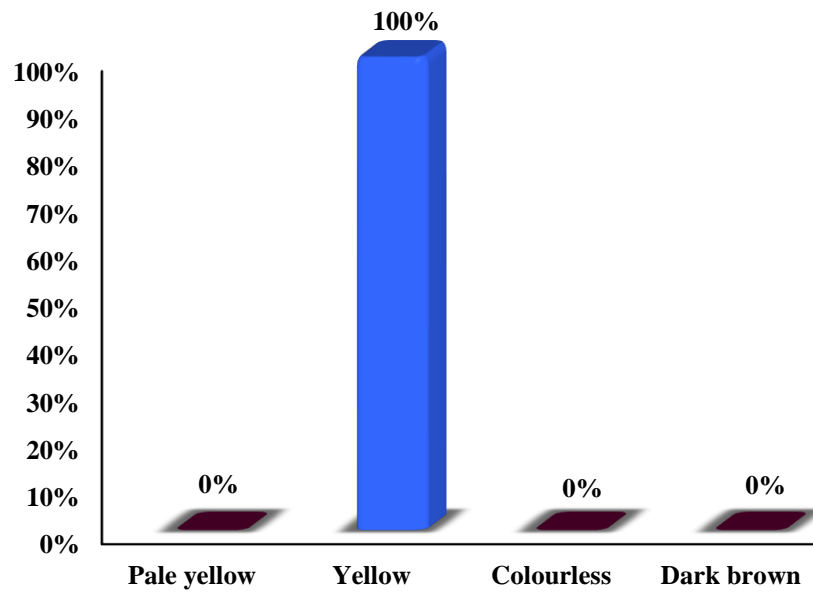
Fig 9. 31. Neer manam



Observation

Out of 20 cases, every patient had ammonia odour urine.

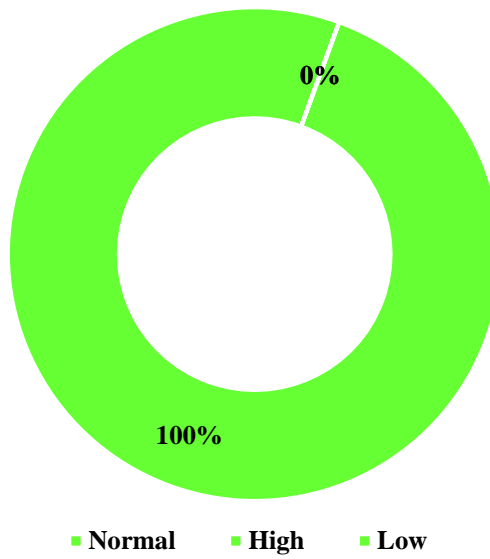
Fig 9.32. Neer Niram



Observation

Out of 20 cases, all the patient has yellow colour urine.

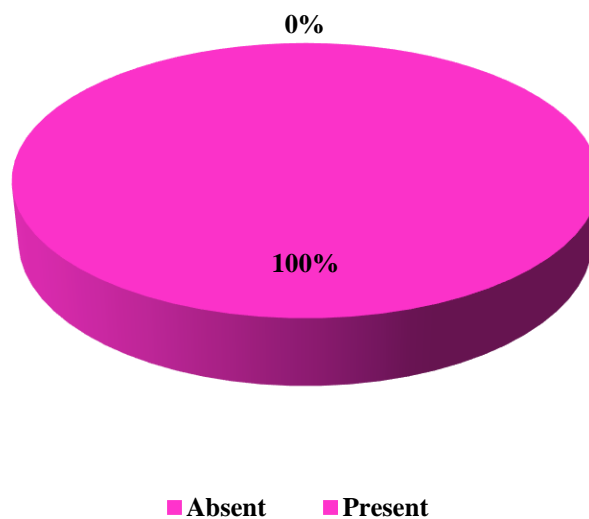
Fig 9.33. Edai



Observation

Among 20 cases, every patient had normal specific gravity of urine

Fig 9.34. Enjal

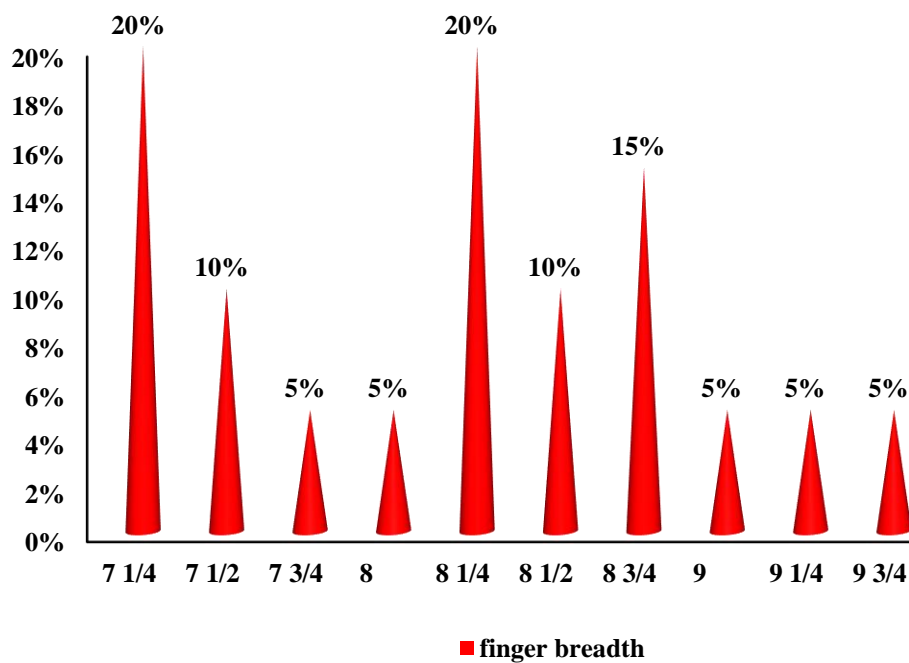


MANIKADAI NOOL

Table- 9.22. Manikadai nool

| S.NO | Manikadai nool (Viralkadai) | No. of cases | Percentage |
|------|--------------------------------|--------------|-------------|
| 1. | 7 ¼ | 4 | 20% |
| 2. | 7 ½ | 2 | 10% |
| 3. | 7 ¾ | 1 | 5% |
| 4. | 8 | 1 | 5% |
| 5. | 8 ¼ | 4 | 20% |
| 6. | 8 ½ | 2 | 10% |
| 7. | 8 ¾ | 3 | 15% |
| 8. | 9 | 1 | 5% |
| 9. | 9 ¼ | 1 | 5% |
| 10. | 9 ¾ | 1 | 5% |
| 11. | Total | 20 | 100% |

Fig 9.35. Manikkadai nool



Observation

Out of 20 cases, 4 cases (20%) had 7 ¼ finger breadth. 2 cases (10%) had 7 ½ finger breadth. 1 case (5%) had 7 ¾ finger breadth and 1 case (5%) had 8 finger breadth. 4 cases (20%) had 8 ¼ and 2 cases (10%) had 8 ¾ finger breadth. 1 case (5%) had 9 finger breadth and 1 case (5%) had 9 ¼ finger breadth and 9 ¾ finger breadth.

NEIKKURI:

Table- 9.23. OBSERVATION – DAY 1

| Pattern | 5 sec | 8 min | 16 min | 24 min |
|------------------|-------|-------|--------|--------|
| Vatha kabam | 0% | 5% | 0% | 0% |
| Pitham | 95% | 30% | 15% | 10% |
| Pitha vatham | 0% | 0% | 5% | 0% |
| Pithathil pitham | 5% | 20% | 30% | 45% |
| Pitha kabam | 0% | 45% | 50% | 45% |

Fig - 9.36. NEIKKURI DAY -1

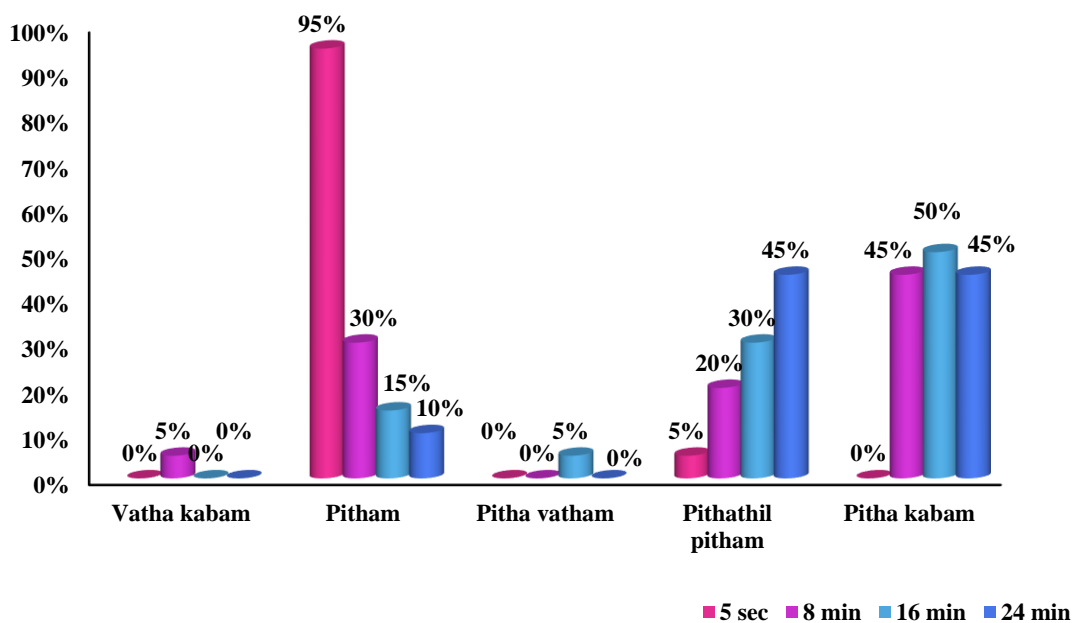


Table – 9.24.OBSERVATION – DAY 2

| Pattern | 5 sec | 8 min | 16 min | 24 min |
|-------------------------|--------------|--------------|---------------|---------------|
| Vatha pitham | 5% | 5% | 0% | 0% |
| Pitham | 80% | 25% | 20% | 20% |
| Pitha vatham | 0% | 5% | 5% | 5% |
| Pithathil pitham | 0% | 20% | 30% | 40% |
| Pitha kabam | 15% | 45% | 40% | 30% |
| Kabam | 0% | 0% | 5% | 5% |

Fig: 9.37. NEIKURI DAY -2

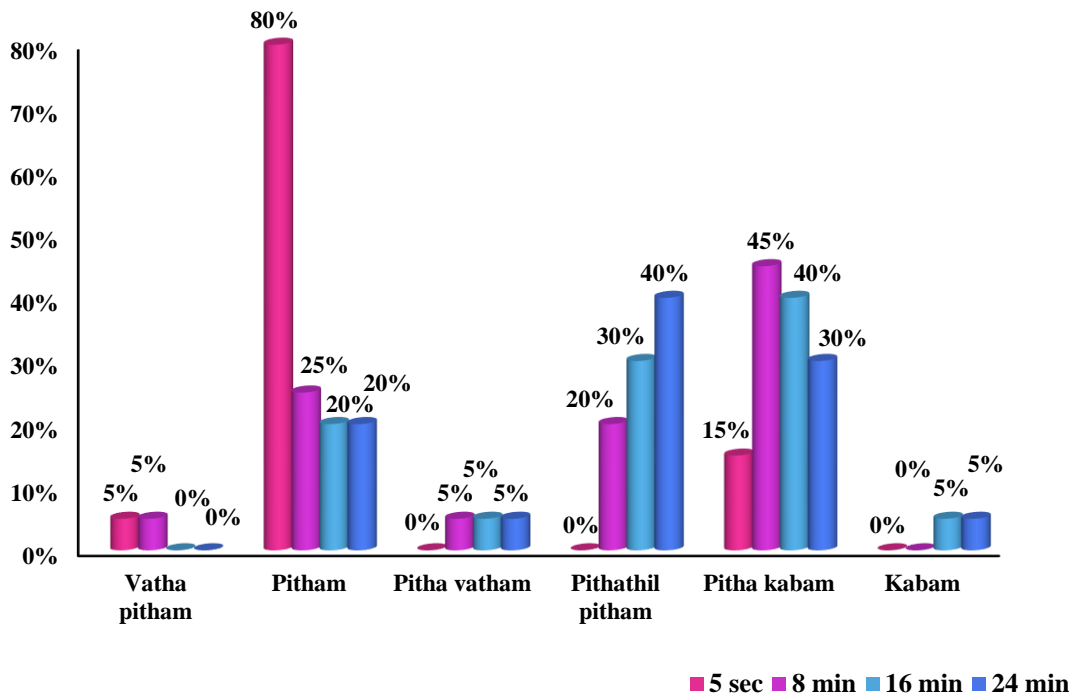
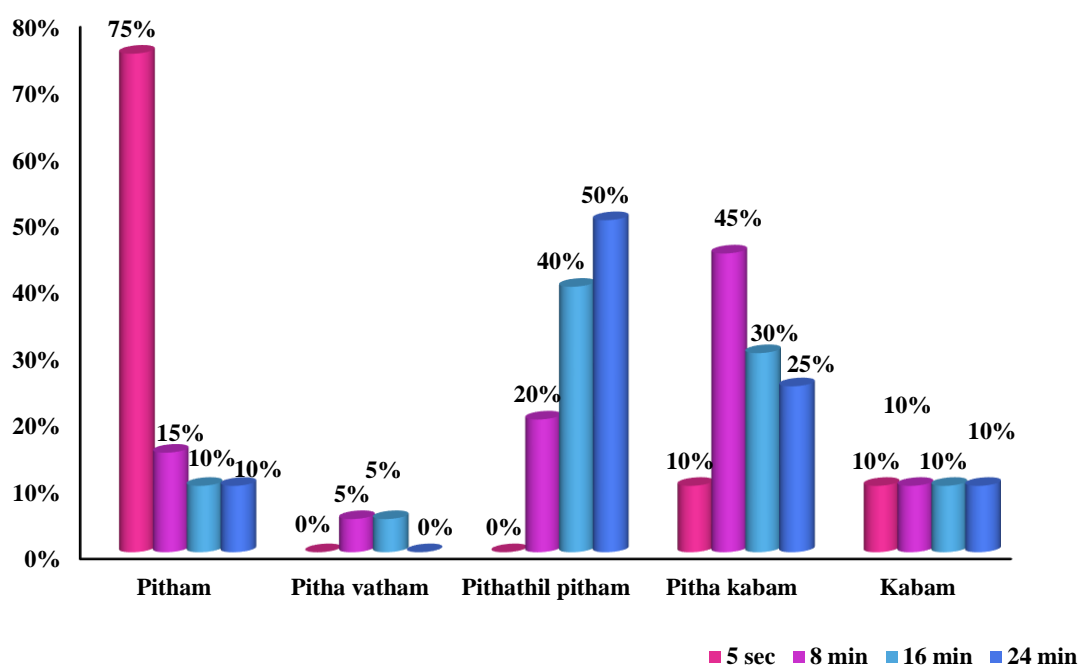


Table – 9.25. OBSERVATION – DAY 3

| Pattern | 5 sec | 8 min | 16 min | 24 min |
|-------------------------|--------------|--------------|---------------|---------------|
| Pitham | 75% | 15% | 10% | 10% |
| Pitha vatham | 0% | 5% | 5% | 0% |
| Pithathil pitham | 0% | 20% | 40% | 50% |
| Pitha kabam | 10% | 45% | 30% | 25% |
| Kabam | 10% | 10% | 10% | 10% |

Fig - 9.38 . NEIKKURI DAY -3



INFERENCE

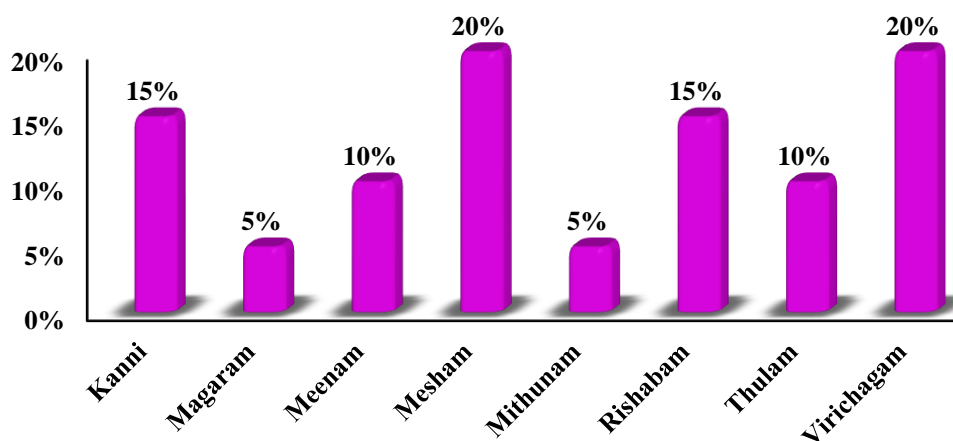
On observing the Neikkuri pattern, it is seen that *Pitham* has been manifested at 5 seconds at the percentage of 81.66%. *Pithathil pitham* has been observed in 20 minutes at percentage of 45%. *Kabam* and *kabapitham* is not seen much during observation. *Pithakabam* has been observed more at the percentage of 45% at 8 minutes and it is followed by *Pithathil pitham*.

RAASI:

Table – 9.26. Raasi

| S.No | Raasi | No of cases | Percentage |
|------|------------|-------------|------------|
| 1 | Kanni | 3 | 15% |
| 2 | Magaram | 1 | 5% |
| 3 | Meenam | 2 | 10% |
| 4 | Mesham | 4 | 20% |
| 5 | Mithunam | 1 | 5% |
| 6 | Rishabam | 3 | 15% |
| 7 | Thulam | 2 | 10% |
| 8 | Virichagam | 4 | 20% |

Fig 9.38. Raasi



Observation

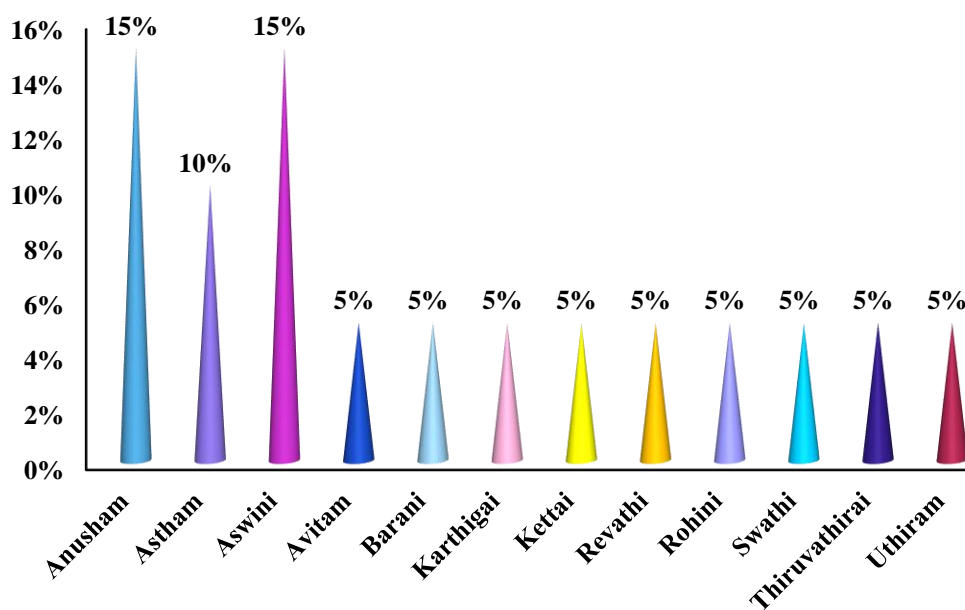
Out of 20 cases, 4 cases (20%) belongs to Mesham and Virichagam and 3 cases (15%) belongs to Kanni and Rishabam and 2 cases (10%) belongs to Meenam and Thulam and 1 cases (5%) belongs to Magaram and Mithunam

NATCHATHIRAM

Table – 9.27. Natchathiram

| S.No | Natchathiram | No of cases | Percentage |
|------|---------------|-------------|------------|
| 1 | Anusham | 3 | 15% |
| 2 | Astham | 2 | 10% |
| 3 | Aswini | 3 | 15% |
| 4 | Avitam | 1 | 5% |
| 5 | Barani | 1 | 5% |
| 6 | Karthigai | 1 | 5% |
| 7 | Kettai | 1 | 5% |
| 8 | Revathi | 2 | 5% |
| 9 | Rohini | 2 | 5% |
| 10 | Swathi | 2 | 5% |
| 11 | Thiruvathirai | 1 | 5% |
| 12 | Uthiram | 1 | 5% |

Fig 9.39. Natchathiram



Observation

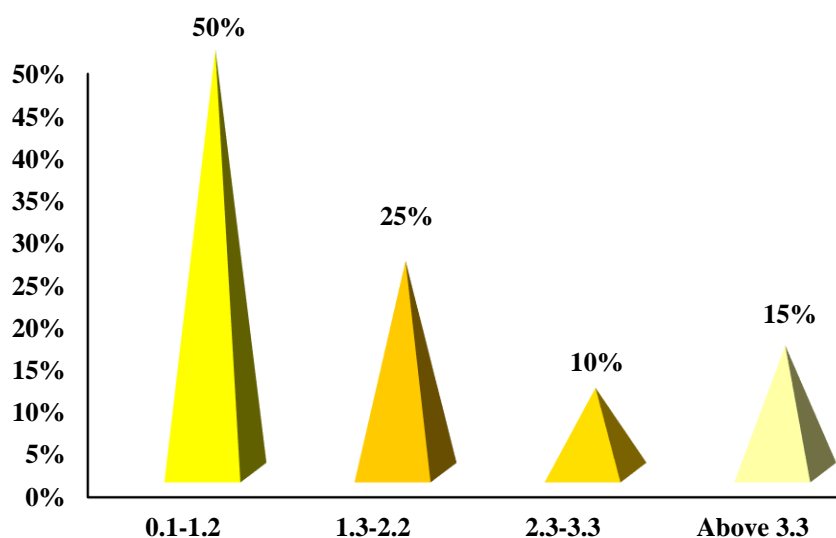
Out of 20 cases, 3 cases (15%) belongs to Anusham and Aswini and 2 case (10%) belongs to Astham and 1 case (5%) belongs to Avitam, Barani, Karthigal, Kettai, Revathi, Rohini, Swathi, Thiruvathirai and Uthiram

LABORATORY INVESTIGATION - BILIRUBIN

Table – 9.28. Total Bilirubin

| S.No | Total Bilirubin | No of cases | Percentage |
|------|-----------------|-------------|------------|
| 1 | 0.1-1.2 | 10 | 50% |
| 2 | 1.3-2.2 | 5 | 25% |
| 3 | 2.3-3.3 | 2 | 10% |
| 4 | Above 3.3 | 3 | 15% |

Fig 9.40. Total bilirubin















Observation

Out of 20 cases, 10 cases (50%) had within normal total bilirubin. 5 cases (25%) had 1.3- 2.2 gm/dl range of total bilirubin. 2 cases (10%) had 2.3-3.3 gm/dl range of total bilirubin and 3 cases (15%) had above 3.3 gm/dl of total bilirubin that means 1 patient had 3.9 gm/dl and 1 patient had 4.8 gm/dl and 1 patient had 9 gm/dl total bilirubin.

LABORATORY INVESTIGATION













| S. NO | OP. NO | Hb (gm/dl) | DC (%) | | | | | TC | RBC | ESR | | Blood sugar | | | T. Chol | HDL |
|-------|--------|------------|--------|------|-----|-----|-----|-------|------|--------|--------|-------------|-----|--------|---------|-----|
| | | | P | L | M | E | B | | | 30 min | 60 min | Fasting | PP | Random | | |
| 1 | M30420 | 13.3 | 46 | 37 | 10 | 5 | 2 | 15000 | 5.4 | 10 | 20 | 90 | 100 | | 150 | 31 |
| 2 | M12861 | 12.1 | 47 | 37 | 10 | 4 | 2 | 12000 | 5.7 | 10 | 20 | 140 | 240 | | 210 | 52 |
| 3 | K90834 | 12.1 | 52 | 23.2 | 10 | 1 | 1 | 29000 | 5.9 | 15 | 22 | 140 | 200 | | 239 | 30 |
| 4 | M15214 | 12 | 42 | 37 | 10 | 4 | 2 | 15000 | 5.7 | 20 | 30 | 146 | 199 | | 210 | 52 |
| 5 | L5944 | 14.1 | 44 | 32 | 10 | 5 | 2 | 8000 | 4.5 | 10 | 15 | 100 | 149 | | 225 | 30 |
| 6 | G74093 | 14.9 | 55 | 41 | 0.4 | 0.4 | 0.4 | 10000 | 4.9 | 6 | 12 | 0 | 0 | 99 | 181 | 40 |
| 7 | L77015 | 14.9 | 61 | 25 | 14 | 14 | 14 | 7000 | 6.05 | 10 | 15 | 0 | 0 | 83 | 238 | 59 |
| 8 | M35209 | 14.1 | 68 | 22 | 0.1 | 0.9 | 0.8 | 7900 | 4.5 | 10 | 20 | 83 | 157 | | 132 | 31 |
| 9 | M25447 | 13.4 | 75 | 20 | 0.5 | 0.5 | 0.5 | 12000 | 5.9 | 6 | 12 | 250 | 419 | | 207 | 46 |
| 10 | M18568 | 14.3 | 50 | 37 | 2.9 | 2 | 0.9 | 10000 | 5.4 | 10 | 20 | 92 | 99 | | 239 | 39 |
| 11 | M36499 | 9.6 | 41 | 19 | 2 | 9 | 0.7 | 9000 | 3.2 | 15 | 20 | 90 | 110 | | 269 | 72 |
| 12 | H12426 | 11.2 | 60 | 25.2 | 0.4 | 0.4 | 0.4 | 10000 | 4.4 | 14 | 20 | | | 79 | 209 | 62 |
| 13 | M18327 | 16.3 | 59 | 23.3 | 0.1 | 0.1 | 0.1 | 14000 | 4.2 | 15 | 25 | 95 | 100 | | 250 | 60 |
| 14 | K7521 | 14.1 | 68 | 23.3 | 5.2 | 4.2 | 1 | 10000 | 5.5 | 10 | 20 | | | 150 | 250 | 159 |
| 15 | M45983 | 10.7 | 49 | 46 | 0.5 | 0.5 | 0.5 | 7300 | 3.8 | 60 | 122 | 99 | 142 | | 160 | 51 |
| 16 | M05932 | 14.1 | 57 | 25 | 0.2 | 0.2 | 0.2 | 8200 | 4.4 | 15 | 20 | | | 100 | 200 | 120 |
| 17 | J60803 | 13.2 | 70 | 23.9 | 6.2 | 5.8 | 1.3 | 17000 | 4.2 | 15 | 20 | 90 | 100 | | 210 | 70 |
| 18 | M48800 | 14 | 69 | 25.5 | 6.2 | 4.8 | 1.2 | 8100 | 4.6 | 10 | 20 | | | 100 | 240 | 70 |
| 19 | M48861 | 16.3 | 37 | 31 | 4.4 | 1.3 | 0.5 | 8800 | 5.4 | 5 | 10 | | | 98 | 230 | 60 |
| 20 | L87312 | 13.6 | 56 | 35 | 5 | 5 | 5 | 12600 | 4.2 | 10 | 20 | 103 | 140 | | 208 | 60 |

| | | Blood urea | Sr. Cr | Liver function test | | | | | S. Protein | S. Alb | S. Glo | S. Cal | PT time | Uric acid | Urine | | |
|-----|-----|------------|--------|---------------------|--------------|--------------|------|------|------------|--------|--------|--------|---------|-----------|-------|-----|-------|
| LDL | TG | | | T. bilirubin | D. bilirubin | I. bilirubin | SGOT | SGPT | | | | | | | Alb | Sug | Dep |
| 83 | 290 | 24 | 0.8 | 1.2 | 0.4 | 0.2 | 32 | 37 | 6 | 3.5 | 2 | 9.1 | 14 | 3.4 | nil | nil | 6 - 7 |
| 83 | 219 | 26 | 0.8 | 1.2 | 0.3 | 0.4 | 40 | 42 | 6 | 3.6 | 2.1 | 9.2 | 15 | 3.4 | nil | nil | 2 - 3 |
| 139 | 340 | 19 | 1.2 | 2.2 | 0.7 | 1.2 | 39 | 43 | 6 | 3.5 | 1.9 | 8.9 | 14 | 3.2 | nil | nil | 3 - 4 |
| 83 | 217 | 26 | 0.8 | 1.3 | 2.3 | 1.8 | 40 | 42 | 6.1 | 3.6 | 2.1 | 9.2 | 12 | 3.4 | nil | nil | 2 - 3 |
| 135 | 240 | 19 | 1.2 | 4.8 | 1.5 | 1.2 | 35 | 43 | 6.3 | 3.5 | 1.9 | 8.9 | 15 | 3.4 | nil | nil | 1 - 4 |
| 129 | 239 | 7.9 | 1.9 | 3.9 | 0.85 | 1.25 | 79 | 75 | 9.8 | 3.5 | 4.7 | 9.2 | 14 | 7.5 | nil | nil | 1 - 2 |
| 110 | 239 | 21.7 | 0.77 | 1.23 | 0.35 | 0.4 | 18 | 11 | 7.5 | 4.6 | 2.9 | 9 | 14 | 3.12 | nil | nil | 3 - 4 |
| 86 | 73 | 14 | 1.3 | 0.9 | 1 | 0.3 | 45 | 40 | 9.3 | 3.5 | 2.9 | 9.15 | 12 | 6.5 | nil | nil | 2 - 3 |
| 113 | 232 | 27 | 1.09 | 1.09 | 0.2 | 0.5 | 45 | 45 | 6.7 | 5.5 | 3.5 | 8.9 | | 6.6 | nil | nil | 4 - 6 |
| 130 | 279 | 15 | 0.8 | 1.3 | 0.3 | 0.4 | 50 | 70 | 9.6 | 3.9 | 4.5 | 8.9 | 12 | 5.7 | nil | nil | 2 - 3 |
| 100 | 279 | 16 | 0.8 | 2.9 | 1.8 | 0.4 | 24 | 39 | 5.9 | 2.4 | 3.5 | 8.6 | 13 | 3.4 | nil | nil | 3 - 4 |
| 130 | 210 | 15 | 1 | 1.2 | 0.3 | 1 | 70 | 40 | 7.1 | 6 | 2 | 9.6 | 11.5 | 3.4 | nil | nil | 4 - 5 |
| 150 | 210 | 10 | 1.2 | 1.3 | 0.3 | 0.3 | 59 | 49 | 7.3 | 4.2 | 3.5 | 9.9 | 13.5 | 4.5 | nil | nil | 4 - 5 |
| 140 | 239 | 6 | 1 | 1.3 | 0.3 | 0.3 | 42 | 52 | 6 | 5.5 | 4 | 9.1 | 12.9 | 4.4 | nil | nil | 3 - 4 |
| 91 | 113 | 7 | 0.7 | 2.59 | 1.8 | 0.71 | | | 8.4 | 4.2 | 2.6 | 9.8 | | 3 | nil | nil | 1 - 2 |
| 150 | 210 | 45 | 0.9 | 1 | 0.2 | 0.7 | 30 | 40 | 8.9 | 4.5 | 2.8 | 9.1 | 12.5 | 4 | nil | nil | 3 - 4 |
| 170 | 200 | 16 | 0.9 | 1.2 | 0.3 | 0.4 | 29 | 30 | 7.3 | 4.5 | 3.5 | 9.9 | | 4.5 | nil | nil | 3 - 5 |
| 149 | 159 | 10 | 1 | 0.7 | 0.2 | 0.5 | 66 | 50 | 6.6 | 4.3 | 2.3 | 9.6 | 12 | 6 | nil | nil | 2 - 3 |
| 130 | 200 | 17 | 1 | 1.3 | 0.2 | 0.4 | 30 | 40 | 7 | 4.5 | 3 | 9 | | 4.1 | nil | nil | 2 - 3 |
| 127 | 173 | 17 | 0.9 | 0.6 | 0.2 | 0.4 | 23 | 18 | 4.5 | 7.2 | 4.5 | 9.5 | | 4.5 | nil | nil | 4 - 5 |

| CASE SERIAL NO: - 1 | | OP NO: - M 304020 | | AGE / GENDER: - 23 / M | |
|---------------------|---|---|--|---|--|
| DAYS / TIME PATTERN | 5 SECONDS | 8 MINUTES | 16 MINUTES | 24 MINUTES | |
| DAY 1 |  |  |  |  | |
| PATTERN/ KUTTRAM | Disc shape/ Pitha kutram | Disc shape/ Pitha kabam kutram | Disc shape/ Pitha kabam kutram | Disc shape with vacuole/ Pitha kabam kutram | |
| DAY 2 |  |  |  |  | |
| PATTERN/ KUTTRAM | Disc shape/ Pitha kutram | Round shape/ Pitha kabam | Round shape with vacuole / Pitha kabam | Round shape with vacuole / Pithathil Pitham | |
| DAY 3 |  |  |  |  | |
| PATTERN/ KUTTRAM | Disc shape/ Pitham | Round shape with vacuole / Pithathil Pitham | Round shape with vacuole / Pithathil Pitham | Round shape with vacuole / Pithathil Pitham | |













INTERPRETATION

This patient was a known case of hepatitis B. The Neikkuri pattern of all the three days observation shows elevation of pitham at the moment and then it changes its shape into pithathil pitham at the end of 24 minutes from the second and third day observation

| CASE SERIAL NO: - 2 | OP NO: - M 12861 | | AGE / GENDER: 57 / F | |
|---------------------|---|---|--|---|
| DAYS / TIME PATTERN | 5 SECOND | 8 MINUTES | 16 MINUTES | 24 MINUTES |
| DAY 1 |  |  |  |  |
| PATTERN/ KUTTRAM | Pearl shape/ Pitha Kuttram | Rhombous with vacuole shape/ Pithakabam | Irregular shape /Pithavatham | Irregular shape/ Pithathilpitham |
| DAY 2 |  |  |  |  |
| PATTERN/ KUTTRAM | Pearl shape/ Pitham | Pearl shape/ Pitham | Disc shape/ Pitham | Disc shape/ Pitham |
| DAY 3 |  |  |  |  |
| PATTERN/ KUTTRAM | Pearl shape/ Pitham | Disc shape/ Pitham | Disc shape/ Pitham | Disc shape/ Pitham |

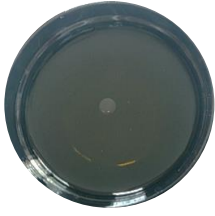








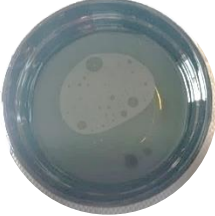


INTERPRETATION

This patient was a known case of Hepatitis B. The neikkuri pattern of all the days shows pitham at the moment which is slightly changes its shape into pitha vatham to pithathil pitham at the first day observation but in second and third day pitham shows till the end.

| CASE SERIAL NO: - 3 | | OP NO: K 90834 | | AGE / GENDER: - 39 / M | |
|----------------------------|---|---|--|---|--|
| DAYS / TIME PATTERN | 5 SECOND | 8 MINUTES | 16 MINUTES | 24 MINUTES | |
| DAY 1 |  |  |  |  | |
| PATTERN/ KUTTRAM | Disc shape/ Pitha kutram | Round shape/ Pithakabam kutram | Round shape with vacuole/ Pithakabam kutram | Pithathil pitham | |
| DAY 2 |  |  |  |  | |
| PATTERN/ KUTTRAM | Round shape with vacuole/ Pitha kabam kutram | Round shape with vacuole/ Pitha kabam kutram | Round shape with vacuole/ Pithathil pitham kutram | Round shape with vacuole/ Pithathil pitham kutram | |
| DAY 3 |  |  |  |  | |
| PATTERN/ KUTTRAM | Disc shape/ Pitha kutram | Round shape with vacuole/ Pitha kabam kutram | Round shape with vacuole/ Pithakabam kutram | Round shape with vacuole/ Pitha kabam kutram | |













INTERPRETATION

This patient was a known case of jaundice, the Neikkuri patten of the first and second day shows pithathil pitham. On the third day, observation changes its shape slightly as pithathil pitham at the end.

| CASE SERIAL NO: - 4 | | OP NO: - M 15214 | | AGE / GENDER: 54 / M | |
|---------------------|---|---|--|---|--|
| DAYS / TIME PATTERN | 5 SECOND | 8 MINUTES | 16 MINUTES | 24 MINUTES | |
| DAY 1 |  |  |  |  | |
| PATTERN/ KUTTRAM | Disc shape /Pitha kuttram | Round shape with vacuole/ pithakabam kuttram | Round shape with vacuole/ pithakabam kuttram | Round shape with vacuole/ pithakabam kuttram | |
| DAY 2 |  |  |  |  | |
| PATTERN/ KUTTRAM | Disc shape /Pitha kuttram | Oval shape /Pitha kabam kuttram | Oval shape /Pitha kabam kuttram | Oval shape with vacuole /Pitha kabam kuttram | |
| DAY 3 |  |  |  |  | |
| PATTERN/ KUTTRAM | Oval shape /Pitha kuttram | Oval shape with vacuole /Pitha kabam kuttram | Oval shape with vacuole /Pithathilpitham kuttram | Oval shape with vacuole /Pithathil pitham | |













INTERPRETATION

This patient was a known case of jaundice. The neikkuri pattern of the first and second day predominately shows pitha kabam, while the third day shows pithathil pitham at the end.

| CASE SERIAL NO: 5 | | OP NO: - L 59442 | | AGE / GENDER: - 29 / M | |
|---------------------|---|---|--|---|--|
| DAYS / TIME PATTERN | AT THE MOMENT | 8 MINUTES | 16 MINUTES | 24 MINUTES | |
| DAY 1 |  |  |  |  | |
| PATTERN/ KUTTRAM | Round shape with vacuole/ Pithathil Pitham | Round shape with vacuole/ Pithathil Pitham | Round shape with vacuole/ Pithathil Pitham | Round shape with vacuole/ Pithathil Pitham | |
| DAY 2 |  |  |  |  | |
| PATTERN/ KUTTRAM | Disc shape/ Pitha kutram | Round shape with vacuole/ Pithathil Pitham | pithathilpitham | Round shape with vacuole/ Pithathil Pitham | |
| DAY 3 |  |  |  |  | |
| PATTERN/ KUTTRAM | Disc shape/ Pitha kutram | Irregular shape with vacuole/ Pithathil vatham | Irregular shape with vacuole/ Pitha vatham | Round shape with vacuole/ Pithathil Pitham | |













INTERPRETATION

This patient was a known case of hepatitis B. The Neikkuri pattern of all three days shows pithathil pitham

| CASE SERIAL NO: - 6 | OP NO: - G 74093 | | AGE / GENDER: - 45 / M | |
|---------------------|---|---|--|---|
| DAYS / TIME PATTERN | 5 SECOND | 8 MINUTES | 16 MINUTES | 24 MINUTES |
| DAY 1 |  |  |  |  |
| PATTERN/ KUTTRAM | Disc shape/ Pitha kutram | Disc shape/ Pitha kutram | Disc shape/ Pitha kutram | Disc shape/ Pitha kutram |
| DAY 2 |  |  |  |  |
| PATTERN/ KUTTRAM | Irregular shape with vacuole/ pitha kabam | Irregular shape with vacuole/ pitha kabam | Irregular shape with vacuole/ pitha kabam | Irregular shape with vacuole/ pitha kabam |
| DAY 3 |  |  |  |  |
| PATTERN/ KUTTRAM | Disc shape/ Pitham kutram | Irregular shape with vacuole/pithathil pitham | Irregular shape with vacuole/ pithathil pitham | Irregular shape with vacuole/ pithathil pitham |

INTERPRETATION

This patient was a known case of jaundice, with HBsAg – positive, the neikkuri pattern on first day shows Pitham over a period of 24 minutes, second day shows Pitha kabam and third day shows Pithathil Pitham at the end.

| CASE SERIAL NO: - 7 | OP NO: - L 77015 | | | AGE / GENDER: - 25 / M | |
|-----------------------------|---|---|--|---|--|
| DAYS / TIME PATTERN | 5 SECOND | 8 MINUTES | 16 MINUTES | 24 MINUTES | |
| DAY 1 |  |  |  |  | |
| PATTERN/ KUTTRAM | Disc shape/ Pitha kutram | Irregular shape with vacuole/ Pithathilpitham | Irregular shape with vacuole/ Pithathil pitham | Irregular shape with / Pithathil pitham | |
| DAY 2 |  |  |  |  | |
| PATTERN/ KUTTRAM | Round shape/ Pitha kutram | Disc shape/ Pitha kabam kutram | Disc shape/ Pitha kabam kutram | Disc shape/ Pitha kabam kutram | |
| DAY 3 |  |  |  |  | |
| PATTERN/ KUTTRAM | Disc shape/ Pitha kutram | Irregular shape with sieve/ Pithakabam | Round shape with vacuole/ Pithathil pitham | Round shape with vacuole/ Pithathilpitham | |













INTERPRETATION

This patient was a known case of HBsAg positive. The Neikkuri pattern of the first and third day shows pithathil pitham humour predominantly and second day shows pithathil kabam.

| CASE SERIAL NO: - 8 | OP NO: - M 35209 | | AGE / GENDER: - 66 / M | |
|---------------------|---|---|--|---|
| DAYS / TIME PATTERN | 5 SECOND | 8 MINUTES | 16 MINUTES | 24 MINUTES |
| DAY 1 |  |  |  |  |
| PATTERN/ KUTTRAM | Disc shape/ Pitha kutram | Disc shape/ Pitha kutram | Disc shape/ Pitha kabam kutram | Disc shape/ Pitha kabam kutram |
| DAY 2 |  |  |  |  |
| PATTERN/ KUTTRAM | Disc shape/ Pitha kutram | Round shape with vacuole/pithathil pitham | Round shape with vacuole/ pithathil pitham | Round shape with vacuole/ pithathil pitham |
| DAY 3 |  |  |  |  |
| PATTERN/ KUTTRAM | Disc shape/ Pitha kutram | Disc shape/ kabam kutram | Disc shape/ kabam kutram | Disc shape/ kabam kutram |













INTERPRETATION

This patient was a known case of hepatitis B, the Neikkuri pattern of the first day shows pitha kabam, second day shows pithathil pitham and third day shows kabam.

| CASE SERIAL NO: - 9 | OP NO: - M 25447 | | AGE / GENDER: - 57 / M | |
|---------------------|---|---|--|---|
| DAYS / TIME PATTERN | 5 SECOND | 8 MINUTES | 16 MINUTES | 24 MINUTES |
| DAY 1 |  |  |  |  |
| PATTERN/ KUTTRAM | Disc shape/Pitha kutram | Oval shape with vacuole/Pitha kutram | Oval shape with vacuole/ Pitha kabam kutram | Oval shape with vacuole/ Pitha kabam kutram |
| DAY 2 |  |  |  |  |
| PATTERN/ KUTTRAM | Disc shape/Pitha kutram | Round shape with vacuole/ Pitha kutram | Round shape with vacuole/Pitha kutram | Round shape with vacuole/Pithathil pitham kutram |
| DAY 3 |  |  |  |  |
| PATTERN/ KUTTRAM | Pearl shape/Pitha kutram | Disc shape/Pitha kutram | Oval shape/Pitha kutram | Oval shape/Pitha kutram |













INTERPRETATION

This patient was a known case of Hepatitis B. The Neikkuri pattern of the first day shows pitha kabam, second day shows pithathil pitham and third day shows pitha kutram.

| CASE SERIAL NO: - 10 | OP NO: - M 18568 | | AGE / GENDER: - 25 / M | |
|----------------------|---|---|--|---|
| DAYS / TIME PATTERN | 5 SECOND | 8 MINUTES | 16 MINUTES | 24 MINUTES |
| DAY 1 |  |  |  |  |
| PATTERN/ KUTTRAM | Disc shape/ Pitha kutram | Disc shape/ Pitha kutram | Disc shape/ Pitha kutram | Disc shape with vacuole/ Pitha kabam |
| DAY 2 |  |  |  |  |
| PATTERN/ KUTTRAM | Disc shape/ Pitha kutram | Round shape with vacuole/ Pithathil Pitham | Round shape with vacuole/ Pithathil Pitham | Round shape with vacuole/ Pithathil Pitham |
| DAY 3 |  |  |  |  |
| PATTERN/ KUTTRAM | Pearl shape/ Pitham | Round shape with vacuole/ Pithathil pitham | Round shape with vacuole/ Pithathil pitham | Round shape with vacuole/ Pithathil pitham |


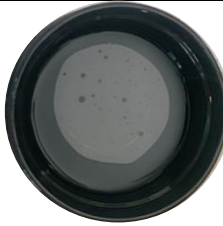
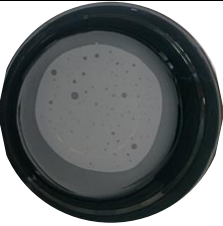









INTERPRETATION

This patient was a known case of hepatitis B. The Neikkuri pattern of all the first day shows pitha kabam, second and third shows pithathil pitham.

| CASE SERIAL NO: -11 | | OP NO: - M 36499 | | AGE / GENDER: - 47 / F | |
|---------------------|---|---|--|---|--|
| DAYS / TIME PATTERN | 5 SECONDS | 8 MINUTES | 16 MINUTES | 24 MINUTES | |
| DAY 1 |  |  |  |  | |
| PATTERN/ KUTTRAM | Round shape/Pitha kutram | Round shape with siven/Pitha kabam kutram | Round shape with sieve/ Pithathilpitham kutram | Round shape with sieve/ Pithathilpitham kutram | |
| DAY 2 |  |  |  |  | |
| PATTERN/ KUTTRAM | Round shape/Pitha kutram | Round shape with vacuole/Pitha kutram | Round shape with vacuole/Pitha kabam kutram | Round shape with vacuole/ Pithathil pitham kutram | |
| DAY 3 |  |  |  |  | |
| PATTERN/ KUTTRAM | Disc/Pitha kutram shape | Round shape with vacuole/ Pithakabam kutram | Round shape with vacuole/Pitha kabam kutram | Round shape with vacuole/Pitha kabamkutram | |









INTERPRETATION

This patient was a known case of jaundice, the Neikkuri pattern of first and second day observation shows elevation of pithathil pitham while the third day shows pithakabam.

| CASE SERIAL NO: - 12 | | OP NO: - H 12426 | | AGE / GENDER: - 46 / F | |
|----------------------|---|---|--|---|--|
| DAYS / TIME PATTERN | 5 SECOND | 8 MINUTES | 16 MINUTES | 24 MINUTES | |
| DAY 1 |  |  |  |  | |
| PATTERN/ KUTTRAM | Disc shape/ Pitha kutram | Round shape with sieve/ Piththil Pitham | Round shape with vacuole/ Piththil Pitham | Round shape with vacuole/ Piththil Pitham | |
| DAY 2 |  |  |  |  | |
| PATTERN/ KUTTRAM | Disc shape/ Pitha kutram | Disc shape/ Pitha kutram | Disc shape/ Pitha kutram | Disc shape with vacuole/ Pitha kutram | |
| DAY 3 |  |  |  |  | |
| PATTERN/ KUTTRAM | Pearl shape/ Kaba kutram | Pearl shape/ Kaba kutram | Pearl shape/ Kaba kutram | Pearl shape/ Kaba kutram | |













INTERPRETATION

This patient was a known case of Hepatitis B, the Neikkuri pattern of the first day observation Shows pithathil pitham changes into pitha kutram and the third day shows kabam over the period of 24 minutes.

| CASE SERIAL NO: - 13 | | OP NO: - M 18327 | | AGE / GENDER: - 52 / M | |
|----------------------|---|---|--|---|--|
| DAYS / TIME PATTERN | 5 SECONDS | 8 MINUTES | 16 MINUTES | 24 MINUTES | |
| DAY 1 |  |  |  |  | |
| PATTERN/ KUTTRAM | Disc shape/ Pitha kutram | Oval shape/ Pitha kutram | Triangle shape/ Pitha kutram | Triangle shape/ Pitha kutram | |
| DAY 2 |  |  |  |  | |
| PATTERN/ KUTTRAM | Disc shape/ Pitha kutram | pithavatham | pithavatham | Pithavatham | |
| DAY 3 | | | | | |
| PATTERN/ KUTTRAM | | | | | |













INTERPRETATION

This patient was a known case of hepatitis B, the Neikkuri pattern of first day shows pitham and slightly changes into pitha vatham

| CASE SERIAL NO: - 14 | | OP NO: - K 7521 | | AGE / GENDER: - 32 / M | |
|----------------------|---|---|--|---|--|
| DAYS / TIME PATTERN | 5 SECONDS | 8 MINUTES | 16 MINUTES | 24 MINUTES | |
| DAY 1 |  |  |  |  | |
| PATTERN/ KUTTRAM | Disc shape/ Pitha kutram | Pithakabam kutram | Pithakabam kutram | Pithakabam kutram | |
| DAY 2 |  |  |  |  | |
| PATTERN/ KUTTRAM | Disc shape/ Pitha kutram | Pitha kabam kutram | Pitha kabam kutram | Pitha kabam kutram | |
| DAY 3 |  |  |  |  | |
| PATTERN/ KUTTRAM | Disc shape/ Pitha kutram | Pithakabam kutram | Pithakabam kutram | Pithakabam kutram | |

INTERPRETATION

This patient was a known case of hepatitis B, the Neikkuri pattern shows of all the three days pitham at five second and the second day pattern changes into pitha kabam but in the third day observation changes into pitha kabam at the end.

| CASE SERIAL NO: - 15 | | OP NO: - M 45983 | | AGE / GENDER: - 36 / M | |
|----------------------|---|---|--|---|--|
| DAYS / TIME PATTERN | 5 SECOND | 8 MINUTES | 16 MINUTES | 24 MINUTES | |
| DAY 1 |  |  |  |  | |
| PATTERN/ KUTTRAM | Disc shape/ Pitha kutram | Round shape with sieve/ Pithathil kabam | Round shape with vacuole/ Pithathil Pitham | Round shape with vacuole/ Pithathil Pitham | |
| DAY 2 |  |  |  |  | |
| PATTERN/ KUTTRAM | Disc shape/ Pitha kutram | Oval shape/ Pitha kutram | Oval shape with vacuole/ Pithakabam | Oval shape with vacuole/ Pithakabam | |
| DAY 3 |  |  |  |  | |
| PATTERN/ KUTTRAM | Disc shape/ Pitha kutram | Disc shape/ Pitha kutram | Round shape with vacuole/ Pithathil Pitham | Round shape with vacuole/ Pithathil Pitham | |













INTERPRETATION

This patient was a known case of jaundice, the Neikkuri pattern of all the three observation shows pitham at the moment which then slightly changes into pithathil pitham at the end.

| CASE SERIAL NO: - 16 | OP NO: - J 60803 | | | AGE / GENDER: - 54 / M |
|----------------------|---|---|--|---|
| DAYS / TIME PATTERN | 5 SECONDS | 8 MINUTES | 16 MINUTES | 24 MINUTES |
| DAY 1 |  |  |  |  |
| PATTERN/ KUTTRAM | Disc shape/ Pitha kutram | Oval shape with sieve/ Pitha kabam | Oval shape with sieve/ Pitha kabam | Oval shape with sieve/ Pitha kabam |
| DAY 2 |  |  |  |  |
| PATTERN/ KUTTRAM | Irregular shape/ pithakabam kutram | Irregular shape with sieve/ pithakabam | Irregular shape with sieve/ pithakabam | Irregular shape with sieve/ pithakabam |
| DAY 3 |  |  |  |  |
| PATTERN/ KUTTRAM | Disc shape/ Pitha kutram | Mushroom shape with sieve/ pitha kabam | Half-moon shape with sieve/ pitha kabam | Half-moon shape with sieve/ pitha kabam |













INTERPRETATION

This patient was a known case of Hepatitis B, the Neikkuri pattern of all three days observation shows pitham into pitha kabam

| CASE SERIAL NO: - 17 | | OP NO: - M 05932 | | AGE / GENDER: - 28 / M | |
|---------------------------|---|---|--|---|--|
| DAYS / TIME PATTERN | 5 SECONDS | 8 MINUTES | 16 MINUTES | 24 MINUTES | |
| DAY 1 |  |  |  |  | |
| PATTERN/ KUTTRAM | Disc shape/ Pitha kutram | Round shape with sieve/ Piththil pitham | Round shape with sieve/ Piththil pitham | Ring shape /pithathilpitham | |
| DAY 2 |  |  |  |  | |
| PATTERN/ KUTTRAM | Round shape/ Pitha kutram | Round shape with vacuole/ Piththil pitham | Oval shape/ Pitha kutram | Oval shape/ Pitha kutram | |
| DAY 3 |  |  |  |  | |
| PATTERN/ KUTTRAM | Disc shape/ Pitha kutram | Oval shape/ Pitha kabam kutram | Oval shape/ Pitha kabam kutram | Oval shape/ Pitha kabam kutram | |










INTERPRETATION

This patient was a known case of Hepatitis B, the Neikkuri pattern of the three days shows pitham at the moment changes into pithathil kabam.

| CASE SERIAL NO: - 18 | OP NO: - M 48800 | AGE / GENDER: - 47 / M | | |
|---------------------------|---|---|--|---|
| DAYS / TIME PATTERN | 5 SECONDS | 8 MINUTES | 16 MINUTES | 24 MINUTES |
| DAY 1 |  |  |  |  |
| PATTERN/ KUTTRAM | Disc shape/ Pitha kutram | Round shape with sieve/ Pithakabam | Round shape with sieve/ Pithakabam | Round shape with sieve/ Pithakabam |
| DAY 2 |  |  |  |  |
| PATTERN/ KUTTRAM | Disc shape/ Pitha kutram | Round shape with sieve / Pithakabam | Round shape with vacuole/ Pithathil pitham | Round shape with vacuole/ Pithathil pitham |
| DAY 3 |  |  |  |  |
| PATTERN/ KUTTRAM | Oval shape with sieve/ Pithakabam | Oval shape with vacuole/ Pithathil pitham | Round shape with vacuole/ Pithathil pitham | Round shape with vacuole/ Pithathil pitham |













INTERPRETATION

This patient was a known case of Hepatitis B, the Neikkuri pattern of the three days shows pitham at the moment changes into pithathil pitham.

| CASE SERIAL NO: - 19 | | OP NO: - M48861 | | AGE / GENDER: - 39 / M | |
|----------------------|---|---|--|---|--|
| DAYS / TIME PATTERN | 5 SECOND | 8 MINUTES | 16 MINUTES | 24 MINUTES | |
| DAY 1 |  |  |  |  | |
| PATTERN/ KUTTRAM | Disc shape/ Pitha kutram | Round shape with sieve / Pithathil kabam | Round shape with vacuole / Pithathil Pitham | Round shape with vacuole / Pithathil Pitham | |
| DAY 2 |  |  |  |  | |
| PATTERN/ KUTTRAM | Disc shape/ Pitha kutram | Round shape with vacuole / Pithathil Pitham | Ring shape / Pithathil Pitham | Disc shape/ Pitha kutram | |
| DAY 3 |  |  |  |  | |
| PATTERN KUTTRAM | Oval shape /Pithakabam kuttram | Oval shape with vacuole /pitha kabam kuttram | Oval shape with sieve/pithathilpit ham kuttram | Oval shape with vacuole /Pithathil pitham | |

INTERPRETATION

This patient was a known case of hepatitis B, the Neikkuri pattern of the three days shows pitham at five second changes into pithathil pitham.

| CASE SERIAL NO: - 20 | | OP NO: - L 87312 | | AGE / GENDER: - 50 / M | |
|----------------------|---|---|--|---|--|
| DAYS / TIME PATTERN | 5 SECONDS | 8 MINUTES | 16 MINUTES | 24 MINUTES | |
| DAY 1 |  |  |  |  | |
| PATTERN/ KUTTRAM | Disc shape/ Pitha kutram | Irregular shape with sieve/ Vatha kabam | Irregular shape with sieve/ pithathil kabam | Irregular shape with sieve/ pithathilpitham | |
| DAY 2 |  |  |  |  | |
| PATTERN KUTTRAM | Irregular shape/ Vatha pitham kutram | Irregular shape/ Vatha pitham kutram | Pearl shape/ Kaba kutram | Pearl shape/ Kaba kutram | |
| DAY 3 |  |  |  |  | |
| PATTERN/ KUTTRAM | Disc shape/ Pitha kutram | Round shape with sieve / Pitha kabam | Round shape with sieve/ Pitha kabam | Round shape with sieve/ Pithathil Pitham | |

INTERPRETATION

This patient was a known case of hepatitis B, the Neikkuri pattern of 5 second shows pitham and end with pithathil pitham.

10. DISCUSSION

Kalleeral Noi in Siddha commonly denotes the whole of Liver diseases. In *Pothu Maruthuvam*, *Kalleeral noi* is classified into three categories – *Vali kalleeral noi*, *Azhal kalleeral noi* and *Iyya kalleeral noi*. To narrow down, in the liver diseases, *Kaamalai* (jaundice) is chosen among them. *Kaamalai* (Jaundice), also known as hyperbilirubinemia, is a yellowish discoloration of the body tissue resulting from the accumulation of an excess of bilirubin ^[12]. Deposition of bilirubin happens only when there is an excess of bilirubin, a sign of increased production or impaired excretion. Here, the investigator had chosen the patients affected with hepatitis B and jaundice to be included in this study.

Hepatitis B virus (HBV) infects more than 300 million people worldwide and is a common cause of liver disease and liver cancer ^[13]. HBV, a member of the *Hepadnaviridae* family, is a small DNA virus with unusual features similar to retroviruses. Acute HBV infection can be either asymptomatic or present with symptomatic acute hepatitis. Most adults infected with the virus recover, but 5%–10% are unable to clear the virus and become chronically infected. Many chronically infected persons have mild liver disease with little or no long-term morbidity or mortality ^[13].

A total of 20 patients were included in this study from the patients attended at OPD of National Institute of Siddha, Tambaram Sanatorium, Chennai with the conditions of Hepatitis B, jaundice and Hepatitis B along with jaundice. Table 9.1 shows highest prevalence of hepatitis and jaundice in the age group of 21 – 40 years and 41 – 60 years in this study. Kolou M et.al had studied the prevalence of HBV and stated that highest prevalence of HBV infection is in the age range of 20-29 years and 30-39 years in his study. Likewise, same result has been observed in this study. ^[14] Table 9.2 have revealed that prevalence of hepatitis B is higher (90%) in male than female. This result is similar to the results studied by Malewe kolou et.al ^[14]. Among patients with Hepatitis B infection (HBsAg positive) those without jaundice outnumbered those with jaundice in this study.

The Sample Registration Baseline Survey reveals that as of January 2014, 71 percent of Indians were non-vegetarians ^[15]. Among 20 cases, 17 cases (85%) of them

were non – vegetarian shown in Table 9.4. This is due to the greater number of patients belongs to the category of non-vegetarian in Tamilnadu. 75% of cases (15 Patients) were from *Marutha Nilam* have shown in Table 9.6. As per Siddha literature, *Marutha Nilam* is the best for living as there will not be occurrence of diseases. But the majority of cases were from *Marutha Nilam* and this may be due to life style modifications.

Among 20 cases, 60% of cases had past history of smoking and 10 cases i.e 50% of cases had past history of consuming liquor. The association of alcohol consumption with chronic hepatitis B in the progression of liver disease has been extensively studied. These studies revealed the increased incidence of hepatitis B and jaundice among the alcoholics [16]. Only *Mei* (30%) and *Kan* (40%) were affected more among *Gnanenthiriyam* in the patients with *kalleeral noi*. *Sevi* was affected in 10% cases. Among 20 cases, 20% cases were having normal *gnanenthiriyangal*. *Kan* was affected in these patients due to age related eye disorders. *Mei* affected patients correlates with the disease of *kalleeral noi*. *Kai* (15%) and *kaal* (40%) were affected in patients with *Kalleeral Noi*. This is not much evidenced with literature. (Table 9.10). Among 20 cases, patients with *sathuva gunam* were higher in this study compared with *raso gunam*. This result has shown in Table 9.11.

Saaram and *senneer* was affected universally 100% and 90% respectively. *Oon* and *kozhuppu* were affected in 60% cases. *Enbu* was affected in 55% cases and *moolai* in 50% cases. As per *Siddha* literature, *Udal Thathukkal* will get affected one by one during the course of disease, here *Saaram*, *Senneer*, *Oon*, *Kozhuppu*, *Enbu* and *Moolai* were affected in majority of cases justifying the literature which states that a physical constituent once affected all other constituents also get affected subsequently one after another.

Pranan was found to be affected in 14 cases (70%), *Abanan* was affected in 9 cases (45%). *Udhanan* was affected in 11 cases (55%). 1 patient (5%) was affected with *viyanan*. *Samanan* was affected in 17 cases (85%). *Pranan* and *Udhanan* helps in the action of digestion. *Abanan* helps in the expulsion of faeces and urine manifests as constipation. *Viyanan* helps in movement hence due to its derangement, movement restriction was seen in many cases. *Samanan* neutralizes other four *vayus*, since other *vayus* are affected *samanan* was also affected in 17 cases. *Nagan*, *koorman*, *kirukaran*, *devathathan* had not affected.

Paasagam (70%), *Saathagam* (20%), *Prasakam* (10%) and *aalosagam* (5%) were the affected components of *pitham*. *Paasaga pitham* which played major role in the digestion got affected. Anyone with disease will be having difficulty in doing desired activities, this was seen by the affected subjects also which is a feature of *Saathagam*.

Santhigam (55%), *Avalambagam* (20%), *kiledhagam* (20%) and *tharpagam* (5%) were the affected components of *Kabam*. Affection of *santhigam* is reflected as degenerative changes of joints. *Kiledhagam* plays major role in the digestion and since digestion is affected, *kiledhagam* is inferred to be affected. Eye irritation showed *tharpagam* is affected.

12 cases (60%) got *maa padidhal* in their tongue and 13 cases (65%) got *vedippu* in their tongue. There were significant changes in colour of the tongue because among 20 cases, 15 cases (75%) had yellowish discoloration. This colour changes shows that the characteristic changes of tongue in jaundice. While 4 cases (20%) had *veluppu* in tongue. Majority of patients had normal taste sensation and hence this does not seem to be much significant changes. Majority of patients have normal salivation, only 5 cases (25%) got reduced salivation due to associated diabetes mellitus. hence this is not much significant in this study to conclude about salivation.

Majority of patients (80%) had brownish complexion (*karumai*). Colour does not show much significant affections in this hospital-based study. Majority of patients had *Sama oli*. This may be due to derangement of *vatha* humour. Majority of patients i.e 60% had normal discoloration in eyes, 8 cases (40%) had yellowish discoloration of eyes. Yellowish discoloration of the eyes associated with *kalleeral noi*.

Majority of cases had *vatha pitha naadi* (40%) and *pitha vatha naadi* (40%). In the verse of *Sathaga Naadi*, *kalleeral noi* has been mentioned under *pitha nadi* and *vatha pitha naadi*, since *pitha* and *vatha pitham* is the basic cause for occurrence of this disease and it may be reason for these two *naadi* in majority of cases.

There was not much significance in stools as all twenty cases in this study had yellow discoloured faeces. Among 20 cases, 10 patients (50%) of cases had constipation.

Out of 20 cases, every patient had yellow coloured urine with normal specific gravity. The urine had normal ammonia like odour. According to Siddha literature, *Pitham* is the main factor in cause of the *kalleeral Noi*. In this study, *Neikkuri* was observed for all cases from 5 seconds to twenty minutes. *Pitha kabam* has been shown up at 5 seconds for three days at percentage of 8.33%. *Pitham* at 5 seconds has seen at the percentage of 81.66% it followed by *Pitha kabam* in the middle and ended with *Pithathil pitham*. Patients are under medications which neutralise the deranged humor. *Pitham* is predominantly seen in *neikkuri* due to the main cause of *kalleeral noi*. Moreover, liver belongs to the region of *pitham* and that also may be the reason for manifestation of *Pitham* in *Neikkuri*.

Majority of patients fell within the finger breadth of $8\frac{1}{2}$ and $7\frac{1}{2}$ (20%). It is stated in *Agathiyar Soodamani Kaiyiru Soothiram* that the $7\frac{1}{2}$ finger breadth of *manikkadai nool* have the possibility of Liver disorder like occurrence. Majority of cases belongs to *mesham raasi* (20%). 15% of cases belongs to *Anusham*. Among 20 cases, half of the cases i.e 10 (50%) patients had elevated bilirubin level while remaining half of the patients had normal total bilirubin due to their medication.

11.SUMMARY AND CONCLUSION

Neikkuri examination in *kalleeral noi* (Liver disorders) has revealed the involvement of uyir thathu or life force 'Pitham' and 'Pithakabam', which have been altered. This manifestation facilitates the detection of current status of the ailment and to treat it according to the deranged humours. Based on Neikkuri examination in this study, it was observed that a pattern of 'Pitham' has shown up at 5 seconds in 81.66% of samples. So, this humour which appeared first is considered as predominant one to be manifested in the pattern of Neikkuri. The next pattern developing from the original pattern reveals the secondary humour involved. In that group, the *Pitham* was followed by *Pithakabam* and ended in *Pithathil pitham*. The remaining cases in this study, 45% of samples showed Pithakabam humour at 8 minutes and followed by *Pithathil pitham* at 20 minutes.

This supports the literary saying '**Panbaana pithathil sethuma naadi parisithal..... Kanavayiru porumal manjal noi**'. and the remaining humour *Kabam* and *vatham* were not shown much in Neikkuri examination. Other diagnostic parameters such as *Naadi*, *Sparisam*, *Naa*, *Niram*, *Mozhi*, *Vizhi* and *Malam* do not show much significance as this study done in very small population. By this study, the author concludes that in the cases of *kalleeral Noi* (liver disorder) the humours *Pithakabam* and *Pitham* get affected and therefore get excreted through urine which has been detected through Neikkuri examination. And the remaining humour *vatha pitham* is felt predominantly in the *Naadi* examination. If the study would be conducted with a larger sample size, it will yield more significant results.

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**A STUDY ON NEERKURI NEIKKURI DIAGNOSTIC METHODOLOGY OF
SIDDHA SYSTEM IN KALLEERAL NOI (LIVER DISEASE)**

FORM I - SCREENING AND SELECTION PROFORMA

| | | | |
|----------------|----|--------|----|
| Case Serial No | | | |
| OP/IP No | | Bed No | |
| Name | | | |
| Age | | | |
| Gender | | | |
| Height | Cm | Weight | Kg |
| Marital Status | | | |
| Occupation | | | |
| Income | | | |
| Address | | | |
| | | | |
| | | | |
| | | | |
| Contact No | | | |
| Email ID | | | |

INCLUSION CRITERIA

| S.NO | DETAILS | YES | NO |
|-------------|---|------------|-----------|
| 1 | Age:15-70 Years | | |
| 2 | Yellowish discoloration of skin and mucus membrane | | |
| 3 | Abdominal pain in right upper quadrant | | |
| 4 | Dark urine | | |
| 5 | Weight loss | | |
| 6 | Patients who have already diagnosed with liver disease / abnormal LFT | | |

A patient diagnosed as liver disorder with who has fulfil at least 2 of the above mentioned complaints.

EXCLUSION CRITERIA

| S.NO | DETAILS | YES | NO |
|-------------|--|------------|-----------|
| 1 | Patient who is not willing for Neerkuri & Neikkuri examination | | |
| 2 | Patient with serious systemic illness | | |

Date :

Signature of PG Scholar

Signature of Faculty

FORM II - HISTORY PROFORMA

| | |
|--------------------|--|
| Case serial no | |
| OP/IP No | |
| Name | |
| Age | |
| Gender | |
| Date of birth | |
| Educational status | |

NATURE OF WORK:

| | |
|---------------------------------|--|
| Sedentary work | |
| Field work with physical labour | |
| Field work executive | |
| Nature of work | |

MONTHLY INCOME:

| | |
|--------------|--|
| Below 3000 | |
| 3000-5000 | |
| 5000-10000 | |
| 10000- 20000 | |
| Above 20000 | |

SOCIO ECONOMIC STATUS:

| | |
|--------------|--|
| Upper | |
| Upper middle | |
| Lower middle | |
| Upper Lower | |
| Lower | |

COMPLIANTS AND DURATION:

HISTORY OF PRESENT ILLNESS:

HISTORY OF PAST ILLNESS:

| DETAILS | YES | IF YES, DETAILS | NO |
|------------------|------------|------------------------|-----------|
| Diabetes | | | |
| Hypertension | | | |
| Cardiac Illness | | | |
| Dyslipidaemia | | | |
| Tuberculosis | | | |
| Bronchial Asthma | | | |
| Epilepsy | | | |
| Jaundice | | | |
| Trauma | | | |
| Surgery | | | |
| Drug Allergy | | | |
| Any Surgery | | | |

PERSONAL HISTORY:

Marital Status: Married / Unmarried

Children: Son____, Daughter_____

HABITS:

| DETAILS | YES | IF YES, DETAILS | NO |
|-------------------|-----|-----------------|----|
| Alcohol | | | |
| Smoking | | | |
| Tobacco | | | |
| Betel Nut Chewing | | | |
| Tea / Coffee | | | |
| Milk | | | |

DIET: Vegetarian / Mixed (Non-Veg +Veg)

MENSTRUAL CYCLE HISTORY:

Menstruation – Regular / Irregular

Duration of menstruation: _____ Days

Age of menarche: _____ Years

Attain menopause:

FAMILY HISTORY:

OTHERS :

Date :

Signature of PG Scholar

Signature of Faculty

FORM III-CLINICAL ASSESSMENT

| | |
|----------------|---|
| Case serial No | |
| OP/IP No | |
| Name | |
| Age | |
| Gender | Male Female Transgender |
| Date | |

VITAL SIGNS

| | |
|--------------------------|--|
| Temperature | |
| Pulse rate (/min) | |
| Heart rate (/min) | |
| Respiratory rate (/min) | |
| Blood pressure (mmHg) | |

GENERAL EXAMINATION

| | |
|--|--|
| Height (cms) | |
| Weight (kgs) | |
| BMI (weight in kgs/ height in m ²) | |
| Waist circumference (cms) | |
| Waist/hip ratio (whr) | |
| Pallor | |
| Icterus | |
| Cyanosis | |
| Clubbing | |
| Lymphadenopathy | |
| Pedal oedema | |
| JVP | |
| Abdominal distension | |

SYSTEMIC EXAMINATION

| | |
|-------------------------|--|
| Cardio vascular system | |
| Respiratory system | |
| Gastrointestinal system | |
| Central nervous system | |
| Uro genital system | |
| Endocrine system | |

SIDDHA SYSTEM OF EXAMINATION

1. NOIUTRAKAALAM:

| S.NO | KAALAM | |
|------|-------------------------------------|--|
| 1 | Kaarkaalam (Aug 15 – Oct 14) | |
| 2 | Koothirkaalam (Oct 15 – Dec 14) | |
| 3 | Munpanikaalam (Dec 15 – Feb 14) | |
| 4 | Pin Panikaalam (Feb 15 – Apr 14) | |
| 5 | Ilavenirkaalam (Apr 15 – June 14) | |
| 6 | Mudhuvenirkaalam (June 15 – Aug 14) | |

2. NOI UTRA NILAM:

| S.NO | NILAM | |
|------|-------------------------|--|
| 1 | Kurunji (Hilly Terrain) | |
| 2 | Mullai (Forest Range) | |
| 3 | Marutham (Plains) | |
| 4 | Neithal (Coastal Belt) | |
| 5 | Paalai (Desert) | |

3. IYMPORIGAL / IYMPULANGAL:

| S.NO | IYMPORIGAL | NORMAL | AFFECTED |
|------|---------------------|--------|----------|
| 1 | Mei (Skin) | | |
| 2 | Vaai (Mouth/Tongue) | | |
| 3 | Kan (Eyes) | | |
| 4 | Mookku (Nose) | | |
| 5 | Sevi (Ears) | | |

4. KANMENTHIRIYANGAL/KANMAVIDAYANGAL:

| S.NO | | NORMAL | AFFECTED |
|------|---------------------------|--------|----------|
| 1 | Kai (Hand) | | |
| 2 | Kaal (Leg) | | |
| 3 | Vaai (Mouth) | | |
| 4 | Eruvaai (Anal region) | | |
| 5 | Karuvaai (Genital region) | | |

5. GUNAM:

| | | |
|---|---------------|--|
| 1 | Sathuva gunam | |
| 2 | Rajo gunam | |
| 3 | Thamo gunam | |

6. UYIR THATHUKKAL:**a. VALI:**

| S.NO | | NORMAL | AFFECTED |
|------|----------------------------|--------|----------|
| 1 | Praanan (Heart centre) | | |
| 2 | Abaanan (Mooladhar centre) | | |

| | | | |
|----|---------------------------------------|--|--|
| 3 | Viyaanan (Throat centre) | | |
| 4 | Udhaanan (Forehead centre) | | |
| 5 | Samaanan (Navel centre) | | |
| 6 | Naagan (Higher intellectual function) | | |
| 7 | Koorman (Air of yawning) | | |
| 8 | Kirukaran (Air of salivation) | | |
| 9 | Devathathan (Air of laziness) | | |
| 10 | Dhananjeyan (Air that act on death) | | |

b. AZHAL:

| S.NO | | NORMAL | AFFECTED |
|------|----------------------------------|--------|----------|
| 1 | Anala Pitham (Gastric juice) | | |
| 2 | Ranjaga Pitham (Haemoglobin) | | |
| 3 | Saathaga Pitham (Life energy) | | |
| 4 | Aalosaga Pitham (Aqueous humour) | | |
| 5 | Praasaka Pitham (Bile) | | |

c. IYYAM:

| S.NO | | NORMAL | AFFECTED |
|------|---------------------------------|--------|----------|
| 1 | Avalambagam (Serum) | | |
| 2 | Kilethagam (Saliva) | | |
| 3 | Pothagam (Lymph) | | |
| 4 | Tharpagam (Cerebrospinal fluid) | | |
| 5 | Santhigam (Synovial fluid) | | |

d. MUKKUTRAM

a. VALI

| MIGU GUNAM | | KURAI KUNAM | |
|-----------------------------|--|----------------------------|--|
| Udal ilaitthal (Emaciation) | | Udal nothal (Body pain) | |

| | | | |
|---|--|--|--|
| Udal karutthal (Complexion –Blackish) | | Thazhntha kural (Feeble voice) | |
| Soodana porulkalil viruppam (Desire to take hot food) | | Thozhil kuntral (Diminished activity) | |
| Udal nadukkam (Shivering of body) | | Moorchai (Syncope) | |
| Vayiru uppal (Abdominal Distension) | | Iyyavalarchiyil kanum pinigal (Features resemblance like increased kabam) | |
| Malakkattu (Constipation) | | | |
| Thookkam kedal (Insomia) | | | |
| Vanmai kuraithal (Weakness) | | | |
| Iymporikalin vanmai kuraithal (Defect of sense organs) | | | |
| Thalai sutral (Giddiness) | | | |
| Ookkam inmai (Lake of interest) | | | |

b. AZHAL

| MIGU GUNAM | | KURAI KUNAM | |
|---|--|--|--|
| Thol manjal niramadaithal (Yellowish discolouration of skin) | | Manthakkini (Loss of appetite and in digestion) | |
| Kan manjal niramadaithal (Yellowish discolouration of eye) | | Kulirchi (Reduced surface temperature) | |
| Siruneer manjal niramadaithal (Yellow coloured urine) | | Nirakkuraivu (Pallor of skin and conjunctiva) | |
| Malam manjal niramadaithal (Yellowishness of Faeces) | | Iyarkkai Iyya valarchikku kedu undathal (Cause evil to natural kaba growth) | |

| | | | |
|---|--|--|--|
| Pasi miguthipadal (Increased appetite) | | | |
| Neervetkai miguthipadal (Increased thirst) | | | |
| Udal mutrum erichal undathal (Burning sensation over the body) | | | |
| Kuraintha thookkam (Sleep disturbance) | | | |

c. KABAM

| MIGU GUNAM | | KURAI KUNAM | |
|--|--|--|--|
| Vaineer oorai (Increased salivary secretion) | | Thalai sutral (Giddiness) | |
| Ookkam kuraithal (Reduced activeness) | | Keelkalil pasai neengi thalarchi adaithal (Dryness and weakness of the joint and prominence bones) | |
| Udal kanamaga thondral (Heaviness of the body) | | Nuraiyeeral illathathu pola thondral (Feeling of lightness in the chest) | |
| Udal venniramadaithal (Body colour - fair complexion) | | Athiga viyarvai, Thamaragathil padapadattha oli (Excessive sweat, palpitation of the heart) | |
| Udal kulirchiyadaithal (Chillness of the body) | | | |
| Akkini manthappadal (Reduced appetite) | | | |
| Eraippu (Eraippu) | | | |
| Miguthookkam (Increased sleep) | | | |

e. UDAL THATHUKKAL:

a. SAARAM: NORMAL / ABNORMAL

| INCREASED | | DECREASED | |
|---|--|---|--|
| Pasitheer kuraithal (Loss of appetite) | | Ilaippu (Loss of weight) | |
| Vaineer oorai (Excessive salivation) | | Vattam (Tiredness) | |
| Okkam kuraithal (Loss of perseverance) | | Thol surasurappu adaithal (Dryness of the skin) | |
| Udal kanamaga thondruvathudan Venniram adaiyum (Excessive heaviness white musculature) | | Peroli ketkaporamai (Diminished activity of the sense organs) | |
| Irumal, Iraippu, Miguthookkam (Cough, dyspnoea, excessive sleep) | | | |
| Udal mutrum ulla kattukal thalaral (Weakness in all joints of the body) | | | |

b. CENNEER: NORMAL / ABNORMAL

| INCREASED | | DECREASED | |
|--|--|--|--|
| Koppulungal undathal (Boils in different parts of the body) | | Pulippu kulirtchi porulkalil viruppam (Interested to take sour and cold food) | |
| Pasiyinmai (Anorexia) | | Varatchi (Dryness) | |
| Paithiyam (Mental disorder) | | Narambu thalarchi (Neuritis) | |
| Manneeral veekkam (Splenomegaly) | | Udal niram kuraithal (Pallor of the body) | |
| Soolai (Colic pain) | | | |

| | | | |
|---|--|--|--|
| Ratha pitham (Increased pressure) | | | |
| Sivantha kann, Sivantha thol (Reddish eye and skin) | | | |
| Kamalai (Jaundice) | | | |
| Siruneeril kuruthikanal (Haematuria) | | | |

c. OON:NORMAL / ABNORMAL

| INCREASED | | DECREASED | |
|--|--|---|--|
| Kazhutthil kanda maalai (Cervical lymphadenitis) | | Iymporikalukku sorvu (Impairment of the sense organs) | |
| Kiranthi (Venereal ulcer) | | Keelkalil noi undathal (Joint pain) | |
| Kannam, Vayiru, Thodai, Ankuri kandu kandaga veengal (Tumour in face, abdomen, thigh, genitalia) | | Thadai, Thodai, Ankuri surungal (Jaw, thigh and genitalia gets shortened) | |
| Kazhutthil oon athikarithu kanal (Hyper muscular in cervical region) | | | |

d. KOZHUPPU:NORMAL / ABNORMAL

| INCREASED | | DECREASED | |
|---|--|--|--|
| Kazhutthil kanda maalai (Cervical lymphadenitis) | | Iduppu vali (Pain in the hip region) | |
| Kiranthi (Venereal ulcer) | | Idappatteeral valarchi (Disease of the spleen) | |
| Kannam, Vayiru, Thodai, Ankuri kandu kandaga veengal (Lymph in face, abdomen, thigh, genitalia) | | | |

| | | | |
|---|--|--|--|
| Kazhuthil oon athikarithu kanal (Hyper muscular in the cervical region) | | | |
| Perumoochi (Dyspnea) | | | |
| Kalaippu (Loss of activity) | | | |

e. ENBU:NORMAL / ABNORMAL

| INCREASED | | DECREASED | |
|--|--|---|--|
| Enbukalum parkkalum miguthippadam (Growth in bones and teeth) | | Enbu santhukal nothal (Bones diseases) | |
| | | Parkkal kazhalal (Loosening of teeth) | |
| | | Nagam vedithal (Nails spitting) | |
| | | Mayir uthiral (Falling of hair) | |

f. MOOLAI: NORMAL / ABNORMAL

| INCREASED | | DECREASED | |
|---|--|--|--|
| Udal paarithal (Heaviness of the body) | | Enbukalil thulai vizhuthal (Osteoporosis) | |
| Kankanathal (Swollen eyes) | | Kankalil Irul kammal (Sunken eyes) | |
| Viral kanukkalin adiparuthal (Swollen phalanges chubby fingers) | | | |
| Siruneer kurainthu pothal (Oliguria) | | | |
| Arithil theerum pun (Non healing ulcer) | | | |

g. SUKKILAM/SURONITHAM: NORMAL / ABNORMAL

| INCREASED | | DECREASED | |
|--|--|---|--|
| Penkalin /Ankalin meethu athika viruppam (Infatuation and lust towards women /men) | | Venner /Suronitham kurainthu pothal (Failure in reproduction) | |
| Kalladaippu (Urinary calculi) | | Kuriyil kuthaludan vali (Pain in the genitalia) | |

f. YAAKKAI:

| VATHAM | | PITHAM | | KABAM | |
|--------------------------------------|--|---|--|--|--|
| Lean and lanky built | | Thin covering of bones and joints by soft tissue | | Plimpy joints and limbs | |
| Hefty proximities of limbs | | Always found with warmth, sweating and offensive body odour | | Broad forehead and chest | |
| Crackling sound of joints on walking | | Wrinkles in the skin | | Sparkling eyes with clear sight | |
| Dark and light admixed complexion | | Red and yellow admixed complexion | | Lolling walk | |
| Split hair | | Easily suffusing eyes due to heat and alcohol | | Immense strength despite poor eating | |
| Clear words | | Sparse hair with greying | | High tolerance to hunger, thirst and fear | |
| Scant affinity for cold foods items | | Intolerance to hunger, thirst and heat | | Exemplary character with good memory power | |
| Poor strength despite much eating | | Inclination towards perfumes like sandal | | More liking for sweet taste | |

| | | | | | |
|--------------------------------|--|------------------------------|--|-------------|--|
| Loss of libido | | Slender eye lashes | | Husky voice | |
| In generosity | | Pimples and moles are plenty | | | |
| Sleeping with eyes half closed | | | | | |

RESULTANT SOMATIC TYPE: _____

g. ENNAVAGAI THERVU (EIGHT-FOLD EXAMINATION)

a. NAADI

NAADI NITHANAM (PULSE APPRAISAL)

| | | |
|---|--------------------------------|--|
| Kaalam (Pulse Reading Season) | Kaarkaalam (Rainy Season) | |
| | Koothirkaalam (Autumn) | |
| | Munpanikaalam (Early Winter) | |
| | Pinpanikaalam (Late Winter) | |
| | Ilavenirkaalam (Early Summer) | |
| | Muthuvenirkaalam (Late Summer) | |
| Thesam (Climate of the patient's habitat) | Kulir (Temperate) | |
| | Veppam (Hot) | |
| Vayathu (Age) | 1 – 33 years | |
| | 34 – 66 years | |
| | 67 – 100 years | |
| Udal vanmai (general body condition) | Iyalbu (normal built) | |
| | Valivu (robust) | |
| | Melivu (lean) | |
| Vanmai (Expansile Nature) | Vanmai | |
| | Menmai | |

| | | | | |
|---------------------------------|-------------------------|-------------|-----------------------|------------|
| Panbu (Habit) | Thannadai (Playing in) | | Paduthal (Lying) | |
| | Puranadai (Playing Out) | | Kalatthal (Blending) | |
| | Illaitthal (Feeble) | | Munnokku (Advancing) | |
| | Kathithal (Swelling) | | Pinnokku (Flinching) | |
| | Kuthithal (Jumping) | | Pakkamnokku (Swering) | |
| | Thullal (Frisking) | | Suzhalal (Revalving) | |
| | Azhutthal (Ducking) | | | |
| NAADI NADAI (PULSE PLAY) | | | | |
| Vali | | Azhal | | Iyyam |
| Vali azhal | | Azhal vali | | Iyya vali |
| Vali ayyam | | Azhal iyyam | | Iyya azhal |

b. SPARISAM / MEIKURI (PHYSICAL SIGNS)

| VEPPAM(WARMTH) | | VIYARVAI (SWEAT) | | THODU VALI (TENDERNESS) | |
|-----------------------|--|-------------------------|--|--------------------------------|--|
| Mitham (Mild) | | Normal | | Present | |
| Migu (Moderate) | | Increased | | Absent | |
| Thatpam (Low) | | Reduced | | | |

c. NAA (TONGUE)

| | | |
|---------------------------------|-----------------|--|
| Maa Padinthuruthal (Coatedness) | Present | |
| | Absent | |
| Niram (Colour) | Karuppu(Dark) | |
| | Manjal (Yellow) | |

| | | |
|------------------------------|-----------------|--|
| | Veluppu (Pale) | |
| Suvai (Taste Sensation) | Pulippu (Sour) | |
| | Kaippu (Bitter) | |
| | Inippu (Sweet) | |
| Vedippu (Fissure) | Present | |
| | Absent | |
| Vaai Neer Ooral (Salivation) | Normal | |
| | Present | |
| | Absent | |

d. NIRAM (COMPLEXION)

| | | | | | |
|----------------|--|-----------------|--|----------------|--|
| Karuppu (Dark) | | Manjal (Yellow) | | Veluppu (Fair) | |
|----------------|--|-----------------|--|----------------|--|

e. MOZHI (VOICE)

| | | | | | |
|------------------------------|--|-------------------------------|--|---------------------------------|--|
| Sama Oli (Medium Pitched) | | Urattha Oli (High Pitched) | | Thazhantha Oli (Low Pitched) | |
|------------------------------|--|-------------------------------|--|---------------------------------|--|

f. VIZHI (EYES)

| | | |
|---------------------------|-------------------|--|
| Niram (Discolouration) | Karuppu (Dark) | |
| | Manjal (Yellow) | |
| | Sivappu (Red) | |
| | Veluppu (White) | |
| | No Discolouration | |
| Kanneer (Tears) | Normal | |
| | Increased | |
| | Reduced | |

| | | |
|------------------------------------|---------|--|
| Erichchal (Burning Sensation) | Present | |
| | Absent | |
| Peelai Seruthal (Mucus Excrements) | Present | |
| | Absent | |

g. MALAM (STOOLS)

| | | |
|--|-------------------|--|
| Niram (Colour) | Karuppu (Dark) | |
| | Manjal (Yellow) | |
| | Sivappu (Reddish) | |
| | Veluppu (Pale) | |
| Sikkal (Constipation) | Present | |
| | Absent | |
| Sirutthal (Poorly Formed Stools) | Present | |
| | Absent | |
| Kalichchal (Loose Watery Stools) | Present | |
| | Absent | |
| Seetham (Watery and Mucoid Excrements) | Present | |
| | Absent | |
| Vemmai (Warmth) | Present | |
| | Absent | |
| History of Habitual Constipation | Present | |
| | Absent | |
| Passing of Mucous | Yes | |
| | No | |

| | | |
|------------------|-----|--|
| Passing of Blood | Yes | |
| | No | |

h. MOOTHIRAM (URINE)

DAY I

NEER KURI (PHYSICAL CHARACTERISTICS)

| | | |
|--------------------------------|--|--|
| Niram (Colour) | Niramattrathu (Colourless) | |
| | Paalpondra cheezh (Milky Purulent) | |
| | Semmanjal (Orange) | |
| | Sivappu (Red) | |
| | Patchai (Greenish) | |
| | Adarthiyana Arakku (Dark Brown) | |
| | Prakasamana Sivappu (Bright Red) | |
| | Karuppu (Black) | |
| | Arakku Sivappu/ Manjal Brown Red Or Yellow) | |
| Manam (Odour) | Theenattram (Ammonical) | |
| | Pazha Manam (Fruity) | |
| | Others | |
| Edai (Specific Gravity) | Iyalbu (1.010 – 1.025- Normal) | |
| | Miga Thadithu Irangal (>1.025 – High Specific Gravity) | |
| | Laesathuvamaga Irangal (<1.010 – Low Specific Gravity) | |
| | Laesathuvam & Seeraga Irangal (1.010-1.012 – Low and Fixed Specific Gravity) | |
| Alavu (Volume) | Iyalbu (1.2 – 1.5lt/Day-Normal) | |

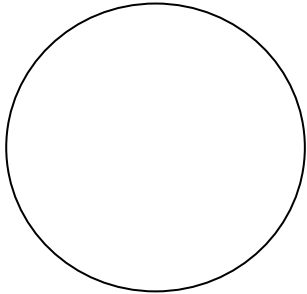
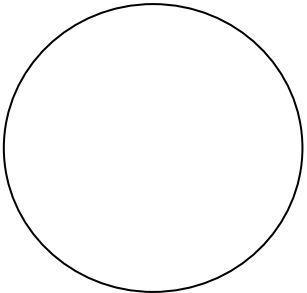
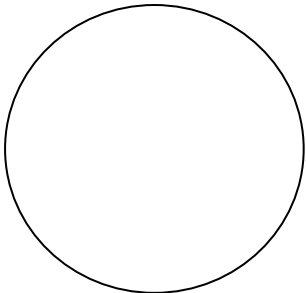
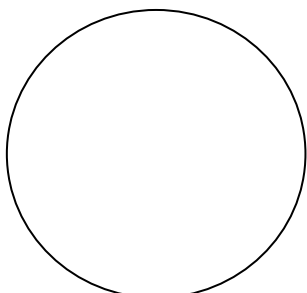
| | | |
|-------------------------|---------------------------------|--|
| | Athineer (>2lt/Day-Polyuria) | |
| | Kuraineer (<500ml/Day-Oliguria) | |
| Nurai (Froth) | Niramtrathu (Clear) | |
| | Kalanganathu (Cloudy) | |
| Enjal (Deposits) | Yes | |
| | No | |

NEIKKURI (OIL SPREADING SIGN)

DAY I

| | | | |
|---|--|---|--|
| Aravam (serpentine fashion) | | Mothiram (ring) | |
| Muthu (pearl beaded appear) | | Aravil mothiram (serpentine in ring fashion) | |
| Aravil muthu (serpentine and pearl patterns) | | Mothirathil muthu (ring in pearl fashion) | |
| Mothirathil aravam (ring in serpentine fashion) | | Muthil aravam (pearl in serpentine fashion) | |
| Muthil mothiram (pearl in ring fashion) | | Asathiyam (incurable) | |
| Mellena paraval (slow spreading) | | Others: | |

SPREADING PATTERN OF NEIKKURI ACCORDING TO DURATION OF TIME

| | | |
|--|--|--|
| DAY I | 5 SECONDS |  |
| 8 MINS | 16 MINS | 24 MINS |
|  |  |  |
| | | |

INTERPRETATION:

h. MANIKADAI NOOL (WRIST CIRCUMMETRIC SIGN): _____ fbs

| | |
|--------------------------|--|
| 12.Date of birth | |
| 13.Time of birth (am/pm) | |
| 14.Place of birth | |

RAASI (ZODIAC SIGN)

| | | | | | |
|---------|--|-----------|--|----------|--|
| Mesam | | Rishabam | | Midhunam | |
| Katagam | | Simmam | | Kanni | |
| Thulam | | Viruchiam | | Dhanusu | |
| Maharam | | Kumbam | | Meenam | |

NATCHATHIRAM (BIRTH STARS)

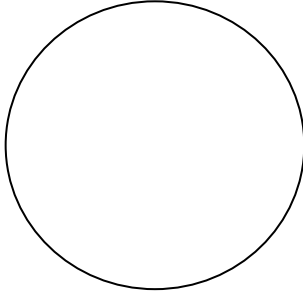
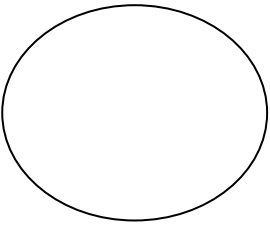
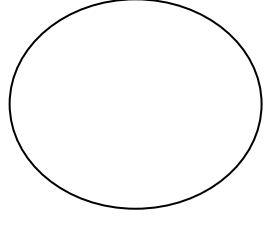
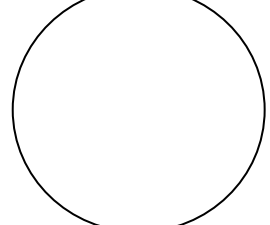
| | | | | | |
|----------------|--|-----------|--|---------------|--|
| Aswini | | Maham | | Moolam | |
| Barani | | Pooram | | Pooradam | |
| Karthikai | | Utthiram | | Utthiradam | |
| Rohini | | Astham | | Thiruvonam | |
| Mirugaseeridam | | Chithirai | | Avitam | |
| Thiruvathirai | | Swathi | | Sathayam | |
| Punarpoosam | | Visaakam | | Poorattathi | |
| Poosam | | Anusam | | Utthirattathi | |
| Ayilyam | | Kettai | | Revathi | |

MOOTHIRAM (URINE)**DAY II****NEIKKURI (OIL SPREADING SIGN)**

| | | | |
|--|--|---|--|
| Aravam (serpentine fashion) | | Mothiram (ring) | |
| Muthu (pearl beaded appear) | | Aravil mothiram (serpentine in ring fashion) | |
| Aravil muthu (serpentine and pearl patterns) | | Mothirathil muthu (ring in pearl fashion) | |
| Mothirathil aravam | | Muthil aravam | |

| | | | |
|---|--|-------------------------------|--|
| (ring in serpentine fashion) | | (pearl in serpentine fashion) | |
| Muthil mothiram (pearl in ring fashion) | | Asathiyam (incurable) | |
| Mellena paraval (slow spreading) | | Others: | |

SPREADING PATTERN OF NEIKKURI ACCORDING TO DURATION OF TIME

| | | | | |
|---|---|---|--|---|
| DAY II | 5 SECONDS | | |  |
| 8 MINS | 16 MINS | 24 MINS | | |
|  |  |  | | |
| | | | | |

INTERPRETATION:

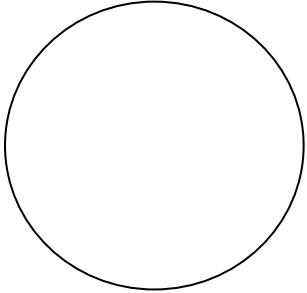
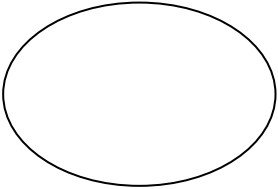
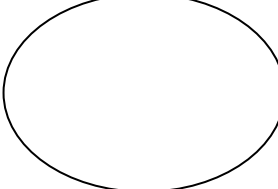
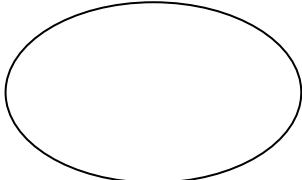
MOOTHIRAM (URINE)

DAY III

NEIKKURI (OIL SPREADING SIGN)

| | | | |
|--|--|---|--|
| Aravam (serpentine fashion) | | Mothiram (ring) | |
| Muthu (pearl beaded appear) | | Aravil mothiram (serpentine in ring fashion) | |
| Aravil muthu (serpentine and pearl patterns) | | Mothirathil muthu (ring in pearl fashion) | |
| Mothirathil aravam (ring in serpentine fashion) | | Muthil aravam (pearl in serpentine fashion) | |
| Muthil mothiram (pearl in ring fashion) | | Asathiyam (incurable) | |
| Mellena paraval (slow spreading) | | Others: | |

SPREADING PATTERN OF NEIKKURI ACCORDING TO DURATION OF TIME

| | | | |
|---|---|---|--|
| DAY III | 5 SECONDS |  | |
| 8 MINS | 16 MINS | 24 MINS | |
|  |  |  | |
| | | | |

INTERPRETATION:

FORM IV-LABORATORY INVESTIGATIONS

| | |
|-----------------------|--|
| Case serial no | |
| OP/IP No | |
| Lab no | |
| Name | |
| Age | |
| Gender | |
| Date of investigation | |

BLOOD INVESTIGATIONS:

| | |
|------------------------------|------------|
| Haemoglobin | Gm% |
| Total Red Blood Cell Count | Cells/cumm |
| Differential Count | P % |
| | L % |
| | M % |
| | E % |
| | B % |
| ESR | mm/1/2hr |
| | mm/1hr |
| Total White Blood Cell Count | Cells/cumm |
| Smear Study | |
| Blood Sugar - F | Mgs% |
| PP | Mgs% |
| R | Mgs% |
| HDL | Mgs% |
| LDL | Mgs% |

| | |
|-------------------|------|
| S. T. Cholesterol | Mgs% |
| Triglycerides | Mgs% |
| Blood Urea | Mgs% |
| S. Creatinine | Mgs% |
| S. T. Bilirubin | Mgs% |
| S. D. Bilirubin | Mgs% |
| S. I. Bilirubin | Mgs% |
| SGOT | Mgs% |
| SGPT | Mgs% |
| S. T. Protein | Mgs% |
| S. Albumin | Mgs% |
| S. Globulin | Mgs% |
| S. Calcium | Mgs% |
| Prothrombin Time | Sec |
| S. Uric Acid | Mgs% |

URINE ANALYSIS:

| | |
|-----------|--|
| Sugar – F | |
| PP | |
| R | |
| Albumin | |
| Deposits | |

SPECIFIC INVESTIGATIONS:

USG Abdomen (If possible)

HBsAg: (If needed)

Date :

Signature of PG Scholar

Signature of Faculty

FORM V - CONSENT FORM

IEC No: NIS/14/2018-19/20-20.09.18

CTRI No: CTRI/2019/04/018815

Date: 29/11/2018

Date: 26/04/2019

I exercising my free power of choice, hereby give my consent to be included as a subject in the diagnostic trial entitled “**A Study on Neerkuri and Neikkuri diagnostic methodology in liver disease**”. I may be asked to give urine and blood samples during the study.

I have been informed to about the study to my satisfaction by the investigator and the purpose of this trial and the nature of study and the laboratory investigations. I also give my consent to publish my urine sample photographs in scientific conferences and reputed scientific journals for the betterment of clinical research.

I am also aware of my right to opt out of the trial at any time during the course of the trial without having to give the reasons for doing so.

NAME OF THE VOLUNTEER:

SIGNATURE OR THUMB IMPRESSION

OF THE VOLUNTEER:

SIGNATURE OF INVESTIGATOR:

SIGNATURE OF FACULTY:

DATE:

படிவம் V - ஆய்வாளரால் சான்றளிக்கப்பட்டது

IEC No: NIS/14/2018-19/22-20.09.18

CTRI No: CTRI/2019/04/018570

Date: 29/11/2018

Date: 09/04/2019

நான் இந்த ஆய்வு குறித்த அனைத்து விபரங்களையும் நோயாளிக்கு புரியும் வகையில் எடுத்துரைத்தேன் என உறுதியளிக்கிறேன்.

தேதி:

கையொப்பம்:

இடம்:

பெயர்:

நோயாளியின் ஒப்புதல் படிவம்

நான் ----- என்னுடைய சுதந்திரமாக தேர்வு செய்யும் உரிமையைக் கொண்டு இங்கு தலைப்பிடப்பட்ட “கல்லீரல் நோய் நீர்க்குறி நெய்க்குறி” ஆய்வு பற்றி கணிப்பதற்கான மருத்துவ ஆய்விற்கு என்னை உட்படுத்த ஒப்புதல் அளிக்கிறேன்.

என்னிடம் இந்த மருத்துவ ஆய்வின் காரணத்தையும் மருத்துவ ஆய்வுக்கூட பரிசோதனைகள் பற்றியும் திருப்தி அளிக்கும் வகையில் ஆய்வு மருத்துவரால் விளக்கிக் கூறப்பட்டது.

இந்த ஆய்வில் எடுக்கப்படும் எனது நீரில் என்னை விட்டுப் பார்க்கும் போது தோன்றும் மாற்றங்களை புகைப்படம் எடுத்து அறிவியல் கருத்தரங்கம் மற்றும் சஞ்சிகைகளில் வெளியிடுவதற்கு என் முழு சம்மதத்தையும் மனதாரத் தெரிவிக்கிறேன்.

நான் இந்த மருத்துவ ஆய்வின் போது காரணம் எதுவும் கூறாமல் எப்பொழுது வேண்டுமானாலும் இந்த ஆய்வில் இருந்து என்னை விடுவித்து கொள்ளும் உரிமையை தெரிந்திருக்கிறேன்.

தேதி:

கையொப்பம்:

இடம்:

பெயர்:

ஆசிரியரின் கையொப்பம்:

FORM VI - SUBJECT INFORMATION SHEET

NIS/14/2018-19/20-20.09.18

CTRI/2019/04/018815

Date: 29/11/2018

Date: 26/04/2019

PURPOSE OF RESEARCH AND BENEFITS:

The diagnostic research study in which your participation is proposed to assess the accuracy of the Neerkuri & Neikkuri procedure adopted in Liver disease / kalleeral noi patients. It is expected that you would benefit from this study. Knowledge gained from this study would be of benefit to patients suffering from such conditions for arriving at the diagnosis and prognosis.

STUDY PROCEDURE:

You will be interviewed and examined as OPD/ IPD patients at the study centre. At the first visit the physician will conduct a brief physical examination and assess the condition followed by blood pressure and routine blood and urine analysis. After matching the inclusion criteria, you will be included in this study and Neerkuri & Neikkuri procedure is done by the collection of your urine sample again.

POSSIBLE RISK:

During this study there may be a minimum pain to you while drawing blood sample.

CONFIDENTIALITY:

Your medical records will be treated with confidentiality and will be revealed only to other doctors / scientists. The results of this study may be published in a scientific journal, but you will not be identified by your name.

YOUR PARTICIPATION AND YOUR RIGHTS:

Your participation in this study is voluntary and you may be withdrawn from this study anytime without having to give reasons for the same. You will be informed about the findings that occur during the study. If you do agree to take part in this study, your health record will need to be made available to the investigators. If you don't wish to participate at any stage, the level of care you receive will in no way be affected.

The Ethics committee cleared the study for undertaking at National Institute of Siddha OPD/ IPD should any question arise with regards to this study you contact following person

INVESTIGATOR:

Dr. M. A. Sinekha
PG scholar, Department of Noi Naadal,
National Institute of Siddha, Tambaram Sanatorium, Chennai-47.
Contact No: 6383511312.
Email id – sneha.arun12@gmail.com

படிவம் VI - நோயாளியின் தகவல் படிவம்

NIS/14/2018-19/20-20.09.18

CTRI/2019/04/018815 Date: 26/04/2019

ஆய்வின் நோக்கமும் பயனும்:

தாங்கள் பங்கெடுத்துக் கொள்ளும் “கல்லீரல் நோய்” நீர்க்குறி நெய்க்குறி பற்றிய ஆய்வு சித்த மருத்துவ முறையில் நோயை கணிப்பதற்கான ஓர் ஆய்வு முறை, இவ்வாய்வு தங்களின் நோய்க்கணிப்பை பற்றியும் நோயின் போக்கு தன்மை பற்றியும் அறிய உதவும்.

ஆய்வு முறை:

தாங்கள் நேர்காணல் மற்றும் பரிசோதனைகளின் மூலம் உள்நோயளி/வெளிநோயாளி பிரிவில் ஆய்வு செய்யப்படுவீர்கள். முதல் நேர்காணலின் போது ஆய்வாளரால் உடல் பரிசோதனை, நீர் மற்றும் இரத்த பரிசோதனை செய்து குறிப்பிட்ட குறிகுணங்கள் இருப்பின் இவ்வாய்விற்காக எடுத்துக் கொள்ளப்படுவீர்கள்.

நேரும் உபாதைகள்:

இவ்வாய்வில் இரத்த பரிசோதனை இரத்தம் எடுக்கும் போது சிறிது வலி ஏற்படலாம்.

மந்தணம்:

தங்களின் மருத்துவ ஆவணங்கள் அனைத்தும் மருத்துவர், ஆய்வாளர் அல்லாத பிறரிடம் தெரிவிக்கப்பட மாட்டாது.

நோயாளியின் பங்களிப்பும் உரிமைகளும்:

இவ்வாய்வில் தங்களின் பங்களிப்பு தன்னிச்சையானது. இவ்வாய்வில் தாங்கள் ஒத்துழைக்க இயலவில்லையெனில் எப்பொழுது வேண்டுமானாலும் காரணம் எதுவும் கூறாமல் விலகிக்கொள்ளலாம். இவ்வாய்வின் போது அறியப்படும் தகவல்கள் தங்களுக்கு தெரிவிக்கப்படும். நோயாளியின் ஒப்புதலுக்கு இணங்க நோய்க்கணிப்பு விவரங்களை ஆய்வாளர் பயன்படுத்திக் கொள்வார். நோயாளி ஆய்வின் இடையே ஒத்துழைக்க மறுத்தாலும் எந்த நிலையிலும் நோயாளியை கவனிக்கும் விதம் பாதிக்கப்பட மாட்டாது. நிறுவன நெறிமுறை குழுமம் மேற்கண்ட ஆய்வினை மேற்கொள்ள ஒப்புதல் அளித்துள்ளது.

ஆய்வு குறித்த சந்தேகங்கள் இருப்பின் கீழ்க்கண்ட நபரை தொடர்பு கொள்ளவும்.

பட்டமேற்படிப்பு

மரு. ம.அ.சினேகா

நோய்நாடல் துறை

தேசிய சித்த மருத்துவ நிறுவனம்

சென்னை-47

தொலைபேசி எண்: 6383511312

மின் அஞ்சல் : sneha.arun12@gmail.com



The Tamil Nadu Dr.M.G.R. Medical University

69, Anna Salai, Guindy, Chennai - 600 032.

This certificate is awarded to Dr. M. A. SINEKHA

for participating as Resource Person / Delegate in the 31st Workshop on

“ How To Do a Good Dissertation & Publish? (Research Methodology and Biostatistics)”

For AYUSH Post - Graduates & Researchers organized by the Department of Siddha,

The Tamil Nadu Dr.M.G.R. Medical University from 15.07.2019 to 19.07.2019.


Dr. N. KABILAN, M.D.(S) Ph.D.,
PROFESSOR & HEAD, DEPT.OF SIDDHA


Dr.PARAMESWARI SRIJAYANTH, M.B.B.S.,M.Sc.(Epid.),

Prof. Dr.SUDHA SESHAYYAN, M.S.,
VICE CHANCELLOR

REGISTRAR (FAC)



NATIONAL INSTITUTE OF SIDDHA- राष्ट्रीय सिद्ध संस्थान

Ministry of AYUSH- आयुष मंत्रालय

GOVERNMENT OF INDIA-भारत सरकार

TAMBARAM SANATORIUM, CHENNAI -600 047 -ताम्बरम सनटोरियमचेन्नई -600 047

फैक्स\Fax : 22381314

फ़ोन\Tele : 044-22411611

वेब : www.nischennai.org

ईमेल: nischennaisiddha@yahoo.co.in

Dt: 29.11.2018


F.No.NIS/6-20/IEC/18-19

CERTIFICATE

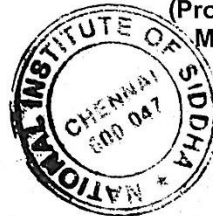
| | |
|---|---------------------------------------|
| Address of Ethics Committee: National Institute of Siddha, Tambaram Sanatorium, Chennai-600047, Tamil Nadu, India | |
| Principal Investigator: Dr.M.A.Sinekha, M.D(S) –First year Department of Noi Naadal | |
| Protocol Title: A Study on Neerkuri and Neikkuri Diagnostic Methodology of Siddha system in Kalleeral Noi (Liver Disease). | |
| Documents filed | 1) Protocol, 2) Data Collection forms |
| Clinical trial Protocol (others – Specify) | Yes |
| Informed consent documents | Yes |
| Any other documents | - |
| Date of IEC approval & its number | NIS/IEC/14/2018-19/20– 20.09.18 |

We approve the trial to be conducted in its presented form.

The Institutional Ethics Committee expects to be informed about the progress of the study, any SAE occurring in the course of the study.


(Dr.V.Subramanian)
Chairman


(Prof.Dr.V.Banumathi)
Member Secretary





Clinical Trial Details (PDF Generation Date :- Thu, 16 Jul 2020 07:42:28 GMT)

| | | |
|--|--|--|
| CTRI Number | CTRI/2019/04/018815 [Registered on: 26/04/2019] - Trial Registered Prospectively | |
| Last Modified On | 16/07/2020 | |
| Post Graduate Thesis | Yes | |
| Type of Trial | Observational | |
| Type of Study | Case Control Study | |
| Study Design | Single Arm Trial | |
| Public Title of Study | Diagnostic methodology of liver disease as per Siddha medicine | |
| Scientific Title of Study | A Study on Neerkuri and Neikkuri diagnostic methodology of Siddha system in kalleeral noi (Liver disease) | |
| Secondary IDs if Any | Secondary ID | Identifier |
| | NIL | NIL |
| Details of Principal Investigator or overall Trial Coordinator (multi-center study) | Details of Principal Investigator | |
| | Name | Dr M A Sinekha |
| | Designation | PG Scholar |
| | Affiliation | National Institute of Siddha |
| | Address | Department of Noinaadal, Room no: 5 National Institute of Siddha, Tambaram sanatorium, Chennai Chennai TAMIL NADU 600047 India |
| | Phone | 9500865848 |
| | Fax | |
| | Email | sneha.arun12@gmail.com |
| Details Contact Person (Scientific Query) | Details Contact Person (Scientific Query) | |
| | Name | Dr G J Christian |
| | Designation | Professor |
| | Affiliation | National Institute of Siddha |
| | Address | Department of Noinaadal, National Institute of Siddha, Tambaram sanatorium, Chennai Chennai TAMIL NADU 600047 India |
| | Phone | |
| | Fax | |
| | Email | christianvijila@gmail.com |
| Details Contact Person (Public Query) | Details Contact Person (Public Query) | |
| | Name | Dr M A Sinekha |
| | Designation | PG scholar |
| | Affiliation | National Institute of Siddha |
| | Address | Department of Noinaadal, National Institute of Siddha, Tambaram sanatorium, Chennai Chennai TAMIL NADU 600047 India |
| | Phone | 9500865848 |

| | | |
|---|--|---|
| | Fax | |
| | Email | sneha.arun12@gmail.com |
| Source of Monetary or Material Support | Source of Monetary or Material Support | |
| | > Ayothidoss pandithar Hospital, National Institute of Siddha Tambaram sanatorium chennai - 47 | |
| Primary Sponsor | Primary Sponsor Details | |
| | Name | Ayothidoss pandithar hospital |
| | Address | National Institute of Siddha, Tambaram sanatorium, Chennai - 47 |
| | Type of Sponsor | Research institution and hospital |
| Details of Secondary Sponsor | Name | Address |
| | NIL | NIL |
| Countries of Recruitment | List of Countries | |
| | India | |
| Sites of Study | Name of Principal Investigator | Name of Site |
| | Dr M A Sinekha | Ayothidoss pandithar hospital |
| | | Site Address |
| | | Department of Noinaadal, Room no:5 National Institute of Siddha, Tambaram sanatorium Chennai - 600047 Chennai TAMIL NADU |
| | | Phone/Fax/Email |
| | | 9500865848 sneha.arun12@gmail.com |
| Details of Ethics Committee | Name of Committee | Approval Status |
| | Institutional ethical committee | Approved |
| | | Date of Approval |
| | | 29/11/2018 |
| | | Is Independent Ethics Committee? |
| | | No |
| Regulatory Clearance Status from DCGI | Status | Date |
| | Not Applicable | No Date Specified |
| Health Condition / Problems Studied | Health Type | Condition |
| | Patients | Liver disorders in diseases classified elsewhere |
| Intervention / Comparator Agent | Type | Name |
| | | Details |
| Inclusion Criteria | Inclusion Criteria | |
| | Age From | 15.00 Year(s) |
| | Age To | 70.00 Year(s) |
| | Gender | Both |
| | Details | 1.Yellowish discoloration of skin and mucus membrane 2.Abdominal pain in right upper quadrant 3.Dark urine 4.Weight loss 5.Loss of appetite |
| Exclusion Criteria | Exclusion Criteria | |
| | Details | 1.Patient who is not willing for Neerkuri & Neikkuri examination. 2.Any serious illness |
| Method of Generating Random Sequence | Not Applicable | |
| Method of Concealment | Not Applicable | |

| | | |
|---|--|-------------------|
| Blinding/Masking | Not Applicable | |
| Primary Outcome | Outcome | Timepoints |
| | Arriving at a conclusion about a specific Neerkuri Neikkuri patterns for Kalleeral noi which may serve as a clue in the diagnosis or prognosis | 1 year |
| Secondary Outcome | Outcome | Timepoints |
| | Categorization of Kalleeral noi under tri- humoral basis. It makes the instant diagnostic tool for kalleeral noi | 1 year |
| Target Sample Size | Total Sample Size=50 Sample Size from India=50 Final Enrollment numbers achieved (Total)=0 Final Enrollment numbers achieved (India)=30 | |
| Phase of Trial | Phase 2 | |
| Date of First Enrollment (India) | 30/04/2019 | |
| Date of First Enrollment (Global) | No Date Specified | |
| Estimated Duration of Trial | Years=1 Months=0 Days=0 | |
| Recruitment Status of Trial (Global) | Not Applicable | |
| Recruitment Status of Trial (India) | Completed | |
| Publication Details | Not yet | |
| Brief Summary | <p>Neikkuri examination in <i>kalleeral noi (Liver disorders)</i> has revealed the involvement of uyir thathu or life force '<i>Pitham</i>' and '<i>Pithakabam</i>', which have been altered. This manifestation facilitates the detection of current status of the ailment and to treat it according to the deranged humours. Based on Neikkuri examination in this study, it was observed that a pattern of '<i>Pitham</i>' has shown up at 5 seconds in 81.66% of samples. So, this humour which appeared first is considered as predominant one to be manifested in the pattern of Neikkuri. The next pattern developing from the original pattern reveals the secondary humour involved. In that group, the <i>Pitham</i> was followed by <i>Pithakabam</i> and ended in <i>Pithathil pitham</i>. The remaining cases in this study, 45% of samples showed <i>Pithakabam</i> humour at 8 minutes and followed by <i>Pithathil pitham</i> at 20 minutes.</p> | |

INSTITUTE OF SURGICAL GASTROENTEROLOGY & LIVER TRANSPLANT

Centre of Excellence



Centre for GI Bleed & Hepato Biliary and Pancreatic diseases
GOVERNMENT STANLEY MEDICAL COLLEGE & HOSPITAL, CHENNAI - 600 001.
Ph No.: 044 - 25289595, 25281345-55 Ext. 245 Fax No. 044-25289595
E-mail: stanleygastro@yahoo.com



Name: Sabarinathan Sex: 25 M Received Date 02.08.19

Lab ID No: 0020802019:086 Hos .ID 5789/18 Report Date 02.08.19

MGE OP

Surgery package III

| Test | Values | Normal Values |
|----------------------------|-----------------------------|----------------------|
| CHG | | |
| Platelet count | 2,33,000 /cu mm | 1,50,000 - 4,00,000 |
| Total WBC Counts | 7,000 cells/Cu mm | 4,000 - 11,000 |
| RBC Count | 6.05 million/ul | male : 4.5-6.2 |
| WBC Differential count | | |
| • Polymorphs | 61 % | 40 - 60 |
| • Lymphocytes | 25 % | 20 - 40 |
| • Eosinophil,Baso,mono | 14 % | 1 - 5 |
| PCV | 45.1 % | 35 - 45% |
| MCV | 74.5 Fl | 80-96 |
| MCH | 24.6 Pg | 27-33 |
| MCHC | 33.0 g/dl | 30-32 |
| Haemoglobin | 14.9 gms/dl | male: 14 - 18 |
| Prothrombin time | Control -12-15 sec :Test-14 | 14 -16 |
| | INR- 1.0 | |
| Bio chemistry | | |
| Blood Sugar ® | 83 mg/dl | <160 |
| Urea | 21.7 mg/dl | 10 - 50 |
| Serum Creatinine | 0.77 mg/dl | Male :0.6 - 1.1mg/dl |
| Liver function Test | | |
| Total Bilirubin | 1.23mg/dl | 0 -1 |
| Direct Bilirubin | 0.35 mg/dl | 0 - 0.25 |
| AST | 18 u/l | Upto 40 |
| ALT | 11 u/l | Upto 37 |

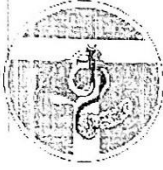
| | | |
|-------------------------|------------------------|-----------|
| GGT | 16 u/l | Upto-37 |
| SAP | 115 u/l | 80-290 |
| Total Protein | 7.5 g/dl | 6.4 - 8.3 |
| Albumin | 4.6 g/dl | 3.8 - 4.4 |
| Globulin | 2.9 g/dl | 2.3-3.6 |
| Electrolytes | | |
| Sodium | 139.6 mEq/l | 136 - 145 |
| Potassium | 4.27 mEq/l | 3.5 - 5.0 |
| Chloride | 102.1 mEq/l | 96 - 106 |
| Scrology | | |
| Hbs Ag | Result due on 07.07.19 | POSITIVE |
| Anti Hcv | Result due on 07.07.19 | NEGATIVE |
| Urine Complete Analysis | | |
| Colour | Yellow | |
| Appearance | Clear | |
| PH | 6.0 | |
| Specific Gravity | 1.030 | |
| Albumin | Negative | |
| Sugar | Negative | |
| Blood | Negative | |
| Ketone | Negative | |
| Bilirubin | Negative | |
| Urobilinogen | Normal | |
| Nitrite | Negative | |
| Urine Microscopy | | |
| Leucocytes | 1-2/HPF | |
| EP. Cells | Occasional | |
| RBC | Not seen | |
| Others | Not seen | |

Received from

1.21.19
(Lab Technologist)

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E-mail: stanleygastro@yahoo.com



Name: Sabarinathan Sex: --- M Received Date 01.08.19

Lab ID No: 0010802019:033 Hos .ID 5169 Report Date 01.08.19

MGE OP

LFT

| Test | Values | Normal Values |
|---------------------|------------|---------------|
| Liver function Test | | |
| Total Bilirubin | 1.38 mg/dl | 0 - 1 |
| Direct Bilirubin | 0.47 mg/dl | 0 - 0.25 |
| AST | 17 u/l | Upto 40 |
| ALT | 08 u/l | Upto 37 |
| SAP | 112 u/l | 80-290 |
| Total Protein | 7.3 g/dl | 6.4 - 8.3 |
| Albumin | 4.7 g/dl | 3.8 - 4.4 |
| Globulin | 2.6 g/dl | 2.3-3.6 |

Received from

T. S. S.
(Lab Technologist)



THE TAMIL NADU Dr. M.G.R. MEDICAL UNIVERSITY

No.69, ANNA SALAI, GUINDY, CHENNAI - 600 032.

Website : www.tnmgrmu.ac.in

Ph : 22353574, 22353576 - 79, 22301760 - 63, 22353094

E-mail : mail@tnmgrmu.ac.in

Fax : 91-44-22353698

| | | |
|-----------------------|-------------------|---------------------------|
| NAME :MR.SABARINATHAN | AGE :25 SEX :MALE | ID NO : 843 |
| HOSPITAL : SMC | REF BY :Dr. | Reported Date :01/08/2018 |

Department of Immunology

Blood Test Report

| TEST NAME | RESULT | UNIT | Ref.Range |
|---|--------|-----------|--|
| HBV-Hepatitis B viral load (Quantitative) | <1000 | copies/ml | More than 1000 copies can be considered Positive |

All the result should always be correlated by clinical status and history of the Patients.

.....End of the Report.....

HOD and Professor of Immunology

| | | |
|-------|-------|-------|
| FBS | : 98 | mg/dl |
| PPBS | : 142 | mg/dl |
| UREA | : 7 | mg/dl |
| CREAT | : 0.7 | mg/dl |
| CHOL | : 160 | mg/dl |
| HDL | : 51 | mg/dl |
| LDL | : 91 | mg/dl |
| VLDL | : 23 | mg/dl |
| TGL | : 113 | mg/dl |

| | | |
|-----------------|-------|-------|
| T.BILIRUBIN | : 2.8 | mg/dl |
| D.BILIRUBIN | : 0.8 | mg/dl |
| ID.BILIRUBIN | : 1.0 | mg/dl |
| SGOT | : 143 | iu/l |
| SGPT | : 143 | iu/l |
| ALK.PHOSPHATASE | : 143 | iu/l |

SUC(P) : Nil
 SUC(PF) : Nil
 SEP : Nil
 BP/MT : 120/80

1-80/13

| | | |
|------|--------|--------------------------|
| WBC | 10.7 | g/dL |
| PC | 7.300 | mm ³ /μL |
| HCT | 3.8 | liters/l |
| HGB | 33.7 | % |
| MCV | 88.5 | fL |
| MCH | 28.1 | pg |
| MCHC | 31.8 | g/dL |
| PLT | 2.5 | 10 ³ cells/μL |
| ESR | 60/122 | |

| | |
|---|-----|
| P | 49% |
| L | 46% |
| M | 05% |

Gamma Gt - 296 U/L



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SID.No : 010984
 S.Recvd : 25/01/2020
 Rpt.Dat : 25/01/2020

Name : Mr.S.VISHNUARAVIND
 Age/Sex : 23 Yrs / MALE
 Ref By : SELF

LABORATORY REPORT

| Test Name | Results/Unit | Reference Value |
|----------------------|--------------|-----------------|
| BLOOD SUGAR [Random] | : 119 mg/dl | 80 - 140 |

SEROLOGY

HCV - Antibody : NEGATIVE
 HBsAg : POSITIVE
 HIV I & II : NEGATIVE
 End of Report


 LAB-INCHARGE