

A STUDY ON
VADHA CHAETMA KSHAYAM

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INTRODUCTION

"என்னுடைய மனது புத்தி யிந்திரிய சரீர மெல்லாம்
என்னுடை யறிவி னாலே யிரவிமுன் னிமமே யாக்கி
என்னுடை நீயு நானு மேகமென் றைக்கியஞ் செய்ய
என்னுடைய குருவாய்த் தோன்று மீசனை யிரைஞ்சி னேனே"

➤ கைவல்ய நவநீத வசனம்

Life is a divine. It's our duty to achieve the goal of life by healthy way to living. The Siddha System of Medicine well known for its simplicity and credibility speaks much of healthy life style by promoting physical and metnal well being.

"அண்டத்தி லுள்ளதே பிண்டம்
பிண்டத்தி லுள்ளதே அண்டம்
அண்டமும் பிண்டமும் மொன்றே
அறிந்து தான் பர்க்கும் போதே"

➤ சட்டமுனி ஞானம்

So the changes that occur in the universe will affect the physical body also. Hence the body will get upset (or) alter from normal, if there is any adverse change in the universe. Since both of them are formed by the same elements in different proportions.

The origin of the Siddha system of Medicine is on the ancient lemorian continent and it was invented by the great ancient Tamil Scientist the Siddhars. They developed this unique system of medicine by their supernatural powers from time immemorial.

"பார்ப்பா பூதமைந்து மண்ணீர் தேயு
பரி வாயு வாகாயம் ஐந்தினாலேயே
சேர்ப்பா சடமச்சே"

➤ சதக நாடி நூல்

The fundamental principle of the Siddha Science involves the five elements namely Mann, Neer, Thee, Kattru and Agayam. Which are present in both beings – the microcosm and universe – the macrocosm. Therefore all created or evolved in this world fall with in the five elemental categories. Of these, the constituents of air, fire and water in the body from the three humours viz. Vaatham, Pitham and Kabam. The three fundamental principles on which the constitution of the human being is based.

The three humors are supposed to be in proportion of in healthy.

| | | |
|---------|---|-----|
| Vaatham | : | 1 |
| Pitham | : | 1/2 |
| Kabam | : | 1/4 |

Individual, and then they are known as "**Muthathus**". But when this equilibrium is altered or their proportion are deranged, these are known as "**Mukkutram**" which ultimately causes illness or disease.

Thus for the maintenance of these three humours in a state of equilibrium a reasonable knowledge in the physiology of the body is essential.

But in the given circumstances the high level of environmental degradation, westernized life styles and scant regard for social and moral values, it is highly impossible to maintain a healthy life. Hence to revert the deranged three humors to its state of equilibrium, material medica plays an important role. In the siddha science, the material medica consists of herbs, minerals and animal products, which are used

in 64 types of medicines, of which 32 varieties are internal and 32 varieties, are external forms. There are laksh of formulation siddha medicines in literatures and the siddhars are considered to be the pioneers in the use of metal and minerals in the treatment of disease.

The knowledge of material loses its significance and value, if the quality and quantity of the deranged Mukkutrams cannot be assessed or in other words, the disease is not diagnosed accurately. Thus the science of *Noi Naadal* which deals with the approach to the process of diagnosis, plays a monumental role in realizing the paramount aim objective of siddha science, which is to assume a full span of hundred years of healthy life.

Noi Naadal means approach to the disease and Noi Mudhal Naadal denotes the determination of the etiology of the disease. The basic pathology of a disease lies in the alteration of the quality and quantity of the thathus, and the assessment of their various dimension forms the essential part of diagnosing a disease. An effect line of treatment can be formulated, only when the uniqueness of the individual and exact nature of the illness, to the level to their sub classification are understood.

The siddhars deviced and utilized a Special Effective and cost co-efficient techniques of diagnosis known as “Envagai Thervugal”. They are Naadi, Sparism, Naa, Niram, Mozhi, Vizhi, Malam and Moothiram. These eight features play a vital role in finding out the disease and the imbalanced life factors.

The author doing her Post Graduate in the Dept of “*Noi Naadal*” attempts a dissertation on the various aspects of *Vadha Chaetma Kshayam* with special emphasis on the changes undergone by the Mukkutram and method of diagnosing this disease by using *Envagai Thervugal*”

SIDDHA PHYSIOLOGY

Definition:

Our siddha physiology is based on the '96' thathuvas, 7 physical Constituents, 14 reflexes, 4 body fires and 6 survaigal. The science which treats of the functions of the living organisms and its parts and of the physical and chemical factors and processes involved.

'96' Thathuvas:

Each and every cell has '96' thathuvas. These '96' thathuvas are responsible for creation, protection and destruction of life which is mediated through the Tridosha and Panchaboothic theory.

Pancha Bootham:

The fundamental principles of siddha science involves the five elements namely

| | | |
|---------|---|-------|
| Mann | - | Earth |
| Neer | - | Water |
| Thee | - | Fire |
| Vaayu | - | Air |
| Aagayam | - | Ether |

As per siddha concepts, not only the universe but also the human body is formed of the same above mentioned five "Boothas". This is quoted in the lines of "Tholkappian" and "Sattamuni" as follows,

"நிலம் நீர் தீ வளி விகம் பேரடைந்தும்

கலந்த மயக்க முலகம் இது"

- தொல்காப்பியம்

“அண்டத்திலுள்ள பிண்டம்
பிண்டத்திலுள்ள அண்டம்”

- சட்டமுனி

Thus the physico – chemical properties of every cell in human body is structurally and chemically formed and determined by definite proportions of these five “Boothas” Because of this any change that occurs in the universe has its impact also in the body.

Charactors of boothas:

Mann (Earth):

The living and non – living things are originated from this bootham.

The following parts of the human body are contributed by the Mann bootham,
Hair, Bone, Skin, Muscle, Nerve.

Neer (water):

It is the medium by which all things are unite with one another.

The following organs of the human body are contributed by the Neer bootham,
blood, body fluids, sperm, Brain, fat.

Thee (Fire):

All things are getting colour and brightness from this bootham

Vaayu (Air):

All the spaces in universe are filled by this bootham.

Responsible for sitting, standing, walking and running.

Aagayam (Ether):

It gives place to other 4 boothams.

3. Thee:

Responsible for the Hunger, Fear, Sleep, coitus and tiredness.

5. Aagayam:

Responsible for desire, strength, physical work, anger affection and tension.

Relation of Panchabootham with Suvai and Uyirthathu.

The Combination of two boothams constitute a suvai and also an Uyirthathu.

Thus the pancha bootham, Suvaigal and Uyirthathus are interlinked

TABLE - 1

| Suvaigal | Boothams | Uyirthathu |
|------------------------|-----------------|-------------------|
| Inibbu (sweet) | Mann + Neer | Kabam |
| Pulibbu (Sour) | Mann + thee | Piham |
| Uppu (Salt) | Neer + thee | Pitham |
| Kaippu (Bitter) | Vaayu + Aagayam | Vaatham |
| Kaarppu (Pungent) | Vaayu + thee | Pitham |
| Thubarppu (Astringent) | Mann + Vaayu | Vaatham |

TABLE - 2

Gnanendhiryam:

| S.No. | Pori (Organ) | Pulan (Sense) | Related Bootham |
|-------|---------------|---------------|-----------------|
| 1 | Kan – Eye | Vision | Thee |
| 2 | Kaadhu – Ear | Sound | Aagayam |
| 3 | Mookku – Nose | Smell | Mann |
| 4 | Vaai – Tongue | Taste | Neer |
| 5 | Mei – Skin | Touch | Vaayu |

TABLE - 3

Kanmendhriyam

| S.No. | Organ | Function | Related Bootham |
|-------|--------------------------------|---------------|-----------------|
| 1 | Kai-Upper Limb | All manicures | Vaayu |
| 2 | Kal – Lower limb | Walking | Thee |
| 3 | Vai – mouth | Speaking | Aagayam |
| 4 | Eruvai (Anal Orifice) | Defaecation | Neer |
| 5 | Karuvai (Reproductive orifice) | Reproduction | Mann |

Anthakaranam (Intellectual faculties):

1. Manam – mind (or) the thinking faculty
2. Puththi – Knowledge (or) the power of discrimination
3. Siddham – the deciding faculty
4. Angaram – achievement faculty.

Arivu – the Wisdom

Naadi – I – These are subdivided into 10 kinds as follows.

1. Idakali:

It is situated in the Kortham, Kortha Kaseru Kodi, Kortha Pasam, Korthagam, Mukulam which it controls the left side of the human body.

2. Pinkalai :

It has the opposite action to Idakalai i.e. controlling right side of the human body.

3. Suzhumunai :

It is located between the Idakalai and pinkalai .

4. Purudan :

It is in the right eye.

5. Kaanthari:

It acts in the left eye.

6. Aththe :

It controls the right ear.

7. Allambudai:

It controls the left ear.

8. Sikuvai:

It acts in the tongue

9. Sankini:

It controls reproductive organs.

10. Gugu :

It controls the rectum

Uyir thathukkal:

The physiological functions of the body is mediated by three humors namely Vaatham, Pitham, Kabam. Every uyirthathu is constituted by two boothas.

I. Vaatham

Vaatham means – vaayu, pain, dryness, flatulence.

It is responsible for respiration and control of movement.

Location:

Abanan, faeces, Edakalai, Nerves, Joints, Pelvic bone, Spermatic cord, Hairs
Muscles, Skin characters of Vaatham.

Functions of Vaatham:

Pain in the whole body, Twitching, piercing pain, Traumatic pain, Inflammation, Reddish complexions, Roughness of skin, Hardness of limbs, Astringent sense of taste in the mouth, Sweating during sleep, Constipation, Oliguria, Blackish discolouration of skin, Stool, Urine and muddy conjunctiva.

The qualities of Vaatham.**TABLE - 4**

| Sl.No. | Own qualities | Opposite qualities |
|--------|--------------------|---------------------|
| 1 | Unctuous – pasumai | Varatchi – Dry |
| 2 | Hot – Akkini | Kulirichi – Cold |
| 3 | Solid – Katti | Elesu – Light |
| 4 | Soft – Miruthu | Kadinam – Rough |
| 5 | Stable – Sthiram | Asaidhal – Unstable |
| 6 | Heavy – Paluvu | Anuththuam – Subtle |

Types of Vaatham:

Based on functions and locations, Vaatham is classified as 10 forms.

1. Pranan – Uyirkkal:

Pranan means primary air force. It moves downward governing respiration and digestion.

2. Abanan – Keezh Nokkukkal:

It deals with all downward forces such as voiding of urine, stools, semen, menstrual flow etc. it constrict the anal sphincter.

3. Viyanan – Paravukal:

It is situated in the heart. Because of this, it governs the circulatory system and the movements of joint and muscles. It resides in the skin and is concerned with

the sense of the touch extension and flexion of the body and distribution of the nutrients of various parts of the body.

4. Uthanan – Mel Nokkukkal:

It is centered in the throat-pertain to act of vomiting, Hiccough, Speech, eructation.

5. Samanan – Nadukkal:

It is placed in the small intestine. It governs the digestive system and synchronises the action other vayus.

6. Nagan:

Responsible for higher intellectual functions, thinking, singing, winking of eyes etc.

7. Koorman:

It is concerned with vision, lacrimation and yawning.

8. Kirukaran:

It causes salivation, increased appetite, secretion of nasal mucous and sneezing. It is responsible for concentration of mind.

9. Thevathathan:

Responsible for sleeping, tiredness, anger caused by Thevathathan

10. Dhananjeyan :

It is responsible for bloating of the body and it escapes third day of death from human head.

Pitham Locations:

Pranna Vaayu, Bladder, moolagni, heart, Umbilical region, Eyes and skin, Blood, saliva, sweating Abdomen.

Characters of Pitham:

Responsible for digestion, vision, hunger, thirst, luster, complexion, intelligence courage, taste, memory, softness of the body.

Functions of Pitham:

Acidity, excessive sweating, sensitiveness, yellowish discoloration, burning sensation in the heart, throat and stomach and dizziness etc.

TABLE - 5**The qualities of Pitham:**

| Sl.No. | Own qualities | Opposite qualities |
|--------|---------------------|--------------------------|
| 1 | Hot – Akkini | Cold – Kulirchi |
| 2 | Mobile – Ooduruval | Immobile – Nilai thanmai |
| 3 | Acute – Kururam | Harmless – Saantham |
| 4 | Liquid – Salaroopam | Solid – Katti |
| 5 | Sour – pulippu | Sweet – Inippu |
| 6 | Pungent – Kaaram | Bitter – Kasappu. |

Classification of pitham:

1. Anal Pitham : Responsible for digestion of food.
2. Ranjaga pitham : Responsible for secondary digestion colour and contents of blood.
3. Aalosaka Pitham : Vision
4. Sadhaka Pitham : It accomplishes the act
5. Prasaka Pitham : for complexion of the skin.

Kabam :

It is responsible for the maintenance of body shape and defense mechanism.

Location :

Samannan, Tongue, Suzhumunai, Vinthu, Head, head, fat, bone marrow, blood, nose, Intestine, joints and chest etc.

Characters of Kabam

It is responsible for stability smoothness, Lubrication. It fixes the joints. It gives ability to cope with hunger, thirst and heat etc.

Function of Kabam

White complexion, Itching, Dullness, Cold, heaviness, Oiliness, loss of sensation, sweetness in mouth, it gives indigestion.

TABLE - 6**Qualities of Kabam:**

| Sl.No. | Own qualities | Opposite qualities |
|--------|----------------------|--------------------|
| 1 | Unctuous – Eram | Hot – Veppam |
| 2 | Smooth – Mirudhu | Rough – Kadinam |
| 3 | Sweet – Inippu | Pungent – Kaaram |
| 4 | Stable – Asaivinmai | Mobile – Asaithal |
| 5 | Heavy – Paluvu | Light – Ilegu |
| 6 | Viscid – valavaluppu | Sandy – Karakarapu |
| 7 | Cold – Kulirchi | Dry – Varathci |

Classification of Kabam**1. Avalambagam:**

It resides in the lungs and is responsible for the basic function of the heart. This acts as a fulcrum around which all other kabam revolves.

2. Kilecthakam :

It is situated in the stomach. it gives the lubrication for the ingested food in stomach.

3. Bothagam :

It is situated in the tongue. It gives the taste sensation.

4. Tharpagam :

It is situated in the head and gives refreshness and cooling of the eyes.

5. Santhigam :

It is located in the joints. It lubricates the joints and makes the stability of the joint.

Aasayam:

1. **Amarvasayam** : Stomach. Reservoir of ingested food.
2. **Pahirvasayam** : Liver and small intestine. Absorption of saaram which are separated from the digested food.
3. **Salavasayam** : Bladder. Responsible for formation and excretion of urine.
4. **Malavasayam** : Large intestine and rectum. Responsible for expulsion of indigested food and other waste materials.
5. **Sukkilavasayam** : Testis and ovary. It is the place for formation and growth of the sperm and ovary.

Kosam – Five Basic system:

1. Annamayakosam – Digestive system
2. Pranamayakosam – Respiratory system
3. Manomayakosam – Cardio Vascular system
4. Vingnanamaya Kosam – Nervous system
5. Anandhamaya kosam – Genito – urinary system

Aadharam - Vital centres of the human body.

1. Mooladharam – Perineal region:

It is located between anus and external genitalia.

This centre is related with “prithivi” bootham.

2. Swathitanam – Umbilical region:

It is located 2 inches above the mooladharam

It is also related with “Prithivi” bootham.

3. Manipoorangam – Epigastric region:

It lies 8 inches above the swathitanam

This centre is related with “Appu” bootham.

4. Anagadham – Cardiac region:

It is situated 10 inches above the manipoorangam.

This aadharam is related with “Thee” bootham.

5. Vishuthi – Neck region:

It is located 10 inches above the “Anagadham”

This aadharam is related with “Vaayu” bootham.

6. Aackiai – Glabeller region:

It lies in between the two eye brows, 12 inches above the vishuthi.

This aadharam is related with “Aagaya” bootham.

Malam – 3:

Anavam - Stage of Selfishners

Mayai - Stage of illusion

Kanmam - Fruits of deed or fate

Mandalam – 3:

1. Gnanyiru (Sun) – Solar plexus – it is located in the Cardiac region (Iruthaya kamalam) and 4 inches above the stomach.
2. Thingal (moon) – Lunar plexus – situated in the head.
3. Thee – fire – Located 2 inches above the mooladharam and spread up to the umbilical region.

Edanai – 3 [three physical bindings)

| | | |
|------------------|---|---------------------|
| Porul Pattru | - | Material bindings |
| Puthalvar pattru | - | off spring bindings |
| Ulaga paltru | - | Worldy bindings |

Vinai – 2 (Deeds):

| | | |
|-----------|---|-------------|
| Nalvinai | - | good deeds. |
| Theevinai | - | bad deeds. |

Gunam – 3 three cosmic qualities:

| | | |
|--------------|---|--|
| Sathuvagunam | - | Goodness in all things |
| Rasothagunam | - | Manifestations of Passion, Pride, Courage, Jealousy, Zeal etc. |
| Thamogunam | - | Badness. |

Ragam – 8 Eight Passion:

| | | |
|------------|---|-------------------|
| Kamam | - | Describe |
| Krotham | - | Hatred |
| Lopam | - | Stringy |
| Moham | - | Lust |
| Matham | - | Pride |
| Marhcaryam | - | Internal conflict |

Idumbai - Mockery

Agankaram - Ego

Avasthai – 5 States of Consiousness:

Nanavu - wakefulness

Kanavu - Dreamness

Urakkam - Sleep

Perurakkam - State of stupour

Uyirpadakkam- Stage of samathy

14 Vegams

Synonyms:

Reflexes, urges the sum total of any particular automatic response mediated through the nervous system is called as reflexes. In siddha system, 14 reflexes are classified, These are the natural reflexes (Conditioned and un conditioned) of the human body.

வாதம் - அபான வாயு - flatus

தும்மல் - sneezing

சிறுநீர் - micturation.

மலம் - defaecation

கொட்டாவி - yawning

பசி - hunger

நீர் வேட்கை - thirst

காசம் - coughing

இளைப்பு - Exhaustiveness

நித்திரை - sleeping

வாந்தி - vomiting

கண்ணீர் - Lacrimation

சுக்கிலம் - ejaculation of Sperm

சுவாசம் - respiration

1. Vatham - Abanan - Downward Force

2.Thummal – sneezing:

It is the defence reflex excited by an irritation of the mucous membrane of the nose or mouth.

3.Siruneer – urine:

4.Malam - faces

The act of defaecation is the contractile and expelling ability of the rectum and large bowels of the faecal matter.

5.Kottavi – yawning:

Yawning is a normal reflex activity characterized by a deep involuntary respiration with the mouth open, often accompanied by the act of stretching.

6.Pasi – Hunger:

Pasi is a condition that occurs when the stomach is emptied of food. It is craving something. The term is widely used in connection with a craving for food. Hunger is a complex sensation evoked by depletion of body nutrients.

7.Neervetkai (Thirst):

This is prime sensation of body occurred due to loss of body water with or without loss of salt.

8.Kasam – cough:

Coughing is one of the defence reflex, which helps to clear the lower air passages and protect them against the entry of foreign bodies and prevents stagnation of secretion in the passage themselves.

9. Ilaipu – exhaustiveness:

It is the feeling of tiredness which indicates the body to take the rest.

10. Thookam – sleep:

Sleep, the elemental and indispensable phenomenon is a state of physical and mental inactivity from which the person can be aroused to normal consciousness.

11. Vamanam – vomiting:

Vomiting is forcible ejection of contents of stomach through the mouth.

12. Vizhineer – Tears:

The tear is secreted by the Lacrimal gland to keep the eyes in moisturing state and protect them from foreign bodies.

13. Sukkilam:

The normal ejaculation of semen requires to orgasmic joy of male during sexual intercourse.

14. Swasam – Breathing:

Breathing means respiration. Respiration is the exchange of gas between the body and environment. It has two phases.

- Inspiration
- Expiration

Udal Agni (Body fires):

The agni which is responsible for digestion, is mediated through the samana vayu is called as “Udal agni”.

It is classified into 4 types as follows

1. Samanakkini - In which samana vaayu is as its normal state. It is responsible for proper digestion.

2.Vishamakkini - In which “ Samana Vaayu” deranged from its own place.

3.Deekshanakkini - In which “Samana Vaayu” Combined with pitha, causing excessive fire which digest the well cooked and uncooked food with rasam.

4.Mandhakkini - When the kabam combined with “Samana Vaayu” is called as mandhakkini due to this fact food is poorly digested and process of digestion takes a longer time.

Aaru Suvaigal:

Taste is the Peculiar Sensation caused by the contact of soluble substance with the tongue.

| | | |
|-------------------------|---|-------------|
| Inippu (Sweet) | - | Mann + neer |
| Pulippu (Sour) | - | Mann+thee |
| Uppu (salty) | - | Neer+thee |
| Kaippu (Bitter) | - | Vali + Vinn |
| Karppu (Pungent) | - | Vali + thee |
| Thuvarppu (astringent) | - | Mann+ Vali |

More over three thathuvas are constituted by these five poothas in the following way.

| | | |
|-----------|---|---------|
| Vinn+Vali | - | Vaatham |
| Thee | - | Pitham |
| Neer+Mann | - | Kabam |

Inippu (sweet):

Characters:

It gives happiness, health, clarity to sensory organs.

Functions:

Strengthen the 7 physical constituents, Increases the hair growth, It gives long life, It cures the throat disease, kasam, Vatha, Pitham derangements, toxic conditions.

Pulippu (sour):**Characters:**

It stimulates salivation by which it keeps the mouth in cleanliness, Responsible for Piloerection, Sensitive, teeth, It causes frowning and closing of the eyes.

Functions:

It increases digestive fire, It gives strength to eye and nervous system, It acts as a laxative, It increases kabam, pitham and blood.

Uppu (salt):**Characters:**

It increases salivation and irritates throat.

Functions:

It reduces dryness, It clears kabam, It removes constipation, It relaxes the contraction of Organ.

Kaippu (bitter):

It keeps the mouth in cleanliness, It obliterates the sense of taste, It produces unwanted taste and leads to angry and tension state.

Function:

It cures anorexia, It has wormicidal action, It removes toxication, It neutralises the heat, pitham inflammation and kabam, It regulates salivation, It cures giddiness and 'inflammation', It increases intelligence, It purifies breast milk.

Kaarppu (pungent)

Characters:

It gives irritation to the tongue and buccal mucosa when we take this taste, It increases secretion of nose, eye and mouth, It produces hottest feeling in the face.

Functions:

It reduces the body fat, It cures the indigestion which is caused by kabam and increases digestion, It cures the following diseases, Throat disease, skin disease, kaba disease, Inflammation, Leprosy, Anorexia, Abdominal discomfort, Dropsy, ulcers, It acts as a laxative.

Thubarppu (astringent)

Characters:

It makes the feeling of thickened tongue, It constricts the salivary duct, It obliterates the sense of taste.

Functions:

It gives heat to the body, It purifies the blood, It cures the ulcer, It decreases the chance to coming the pitham and kabam diseases, It reduces the body fat, It constricts the Organs, It maintains the moisture of the Skin.

Suvai and udal Kattugal:

Suvaigal contributes the nutrition of certain udal thathugal,.

| | | |
|-----------|---|------------|
| Inippu | - | Oon |
| Pulippu | - | Kozhuppu |
| Uppu | - | Enbu |
| Kaippu | - | Narambu |
| Kaarppu | - | Umizh neer |
| Thubarppu | - | Chenneer. |

Udal vanmaikal:

It is of three types

- Iyarkai vanmai
- Seyarkai vanmai
- Kala vanmai

Iyarkai vanmai:

It has 3 Gunangal (Sathuva, Rasotha, Thamo). It devotes the natural immunity or stamina of the body at birth.

Seyarkai vanmai:

Improving health by nutritional food, activities and medicines.

Kala vanmai:

Development of immunity and stamina according to the age and environment.

Udal Thathukkal:

The human body is built up by the 7 udal thathukkal.

- Saram
- Chenneer
- Oon
- Kozhuppu
- Enbu
- Moozhai
- Sukkilam (or) sronitham.

These materials are formed one by one starting from rasam to sukkilam.

As the digestion takes place in the body, rasam is formed on the very first day.

And all other thathus are formed one by one and end at on 7th day.

When the Mukkutram of the human body (or) the functional units are affected by various factors, they immediately changes, the nature of the physical constituents that is udal thathukkal.

The seven physical constituents are

1.Saram (Chyle):

This is the extract of digested food. It keeps the individual in good spirit and it nourishes the body. It is responsible for growth and development.

2.Chenneer (Blood)

Blood is a complex fluid which contains both organic and inorganic constituents, suspended in a collaidal called as plasma. It is responsible for knowledge, strength and valor of the body.

3.Oon (Muscle):

It forms the shape of the body.

4.Kozhuppu (Fat):

Lubricates the organs to facilitate.

5.Enbu(Bone):

It forms the frame and structure of the body and gives protection to organs.

6.Moozhai (Bone marrow):

It nourishes the bones and gives strength.

7.Sukkilam or sronitham (sperm or ovum):

It is responsible for reproduction

SIDDHA PATHOLOGY

According to siddha pathology, the human body is made of panchaboothams. These boothams are grown in body by food, mediated through the “Aru Suvaigal” So that that it is proved that the “Suvaigal” has got the unique place in the body system.

The five basic elements are taking part in the body through Uyir thathukkal. It is of 3types. These essential humors are formed by the combination of

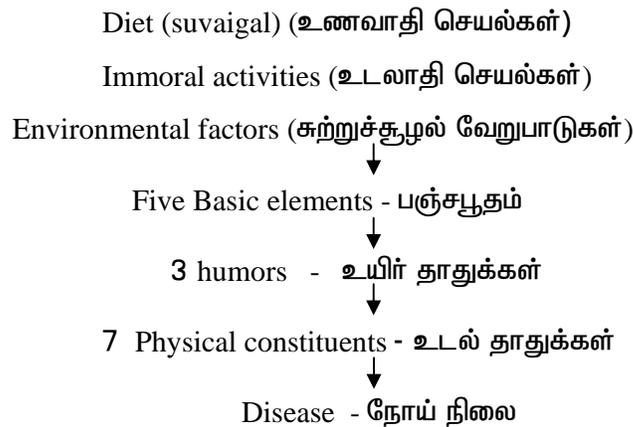
| | | | | |
|------------|---|---------|---|---------|
| Idakalai | + | Abanan | - | Vaatham |
| Pinkalai | + | Pranan | - | Pitham |
| Suzhumunai | + | Samanan | - | Kabam |

Thus formed Uyirthatthukkal is functioning as

| | | |
|------------------------|---|-------------|
| வாதமாய் படைத்து | - | Creation |
| பித்த வன்னியாய் காத்து | - | Protection |
| சேட்பசீதமாய் துடைத்து | - | Destruction |

These Vaatha, Pitha, Kaba, humors will be in the proportion of 1:1/2:1/4 respectively.

The said above basic structures of the body system are interlinked with one another. This basic structures are affected by dietetic factors, physical activities, environmental factors resulting in disease. This is quoted in the following schematic form.



The change in the any of the above basic structures form the basis of siddha pathology.

Noi - Disease

According to siddha aspect Noi is defined as,

உடலுடன் பிணைந்த உயிர் அனுபவிக்கும் இன்ப உணர்ச்சிக்கு மாறான உணர்ச்சியே பிணி எனப்படுகிறது.

- நோய் நாடல் -1

General Causes for disease:

I. According to “Theran Karisal”

“நோயினுற் பத்திகேள் நோன்மை கூர் மைந்தனே

நோயாளி யென்பதறு நோயாளி முன்னே

நோய்கள் வினை காதரமு நோய்கள் வரவேது

நோனாமை யால் வெகுளி நோனாத பசியால்

நோனாத நீர்பருகல் நோனாத உணவால்

நோக்கமரு ணமதாக நோக்கி யொழி தொழினால்

நோக்கரென நடமாடி நோக்கி நடமிடலாம்

நோட்டக்கர ரரிநாடி நோட்ட மொழி குரலால்

II. மிகினும் குறையினும் நோய் செய்யும் நூலோர்

வளி முதலா எண்ணிய மூன்று

- குறள்

III. தன்வினை புறவினை தாழினும் மிகினும்

உடலைப் பிணிக்கு முன்மையிது தாமே”

- சித்த மருத்துவாங்கச் சுருக்கம்

Intrinsic (Internal) and Extrinsic (external) causes are responsible for diseases.

Diet - உணவாதி செயல்கள்:

தொழில் புரிவதற்கு வேண்டிய சக்தியை கொடுக்கவும் உடலை நிலைப் பெற செய்யவும், வளர்க்கவும் ஒருவர் புசிப்பதே உணவாகும். இவ்வகை உணவானது அறுசுவைகளால் ஆனது. இச்சுவைகள் பஞ்சபூத கூறுபாடுகளினால் உருவானது.

நோயை உண்டாக்குவதில் சுவைகளின் பங்கு:

உணவில் அறுசுவைகளும் கலந்து இருக்கும் போது அவை ஒரு பாதிப்பையும் ஏற்படுத்துவதில்லை மேலும் ஒவ்வொரு சுவையையும் அதிகமாக கொள்ளும் போது அதன் விளைவாக ஏற்படும் நோய்களை வரிசைப்படுத்தி கூறப்பட்டுள்ளது.

TABLE - 7

| Sl.No | Tastes | Diseases due to high intake |
|-------|------------------------|--|
| 1. | Inippu (Sweet) | Responsible for obesity, appetite idleness, urinary infection, puraikuzhal, silaipun, lymphadenitis, Increases kaba thodam, fat and secretion of mucous. |
| 2. | Pulippu (Sour) | Body weakness, dull vision, feverishness, dryness of tongue, herpes infection, eczema, anaemia, giddiness, dropsy, blisters. |
| 3. | Uppu (Salt) | Aging, hairless, dryness of the tongue, herpes, leprosy. |
| 4. | Kaippu (bitter) | Dryness of the tongue, affects Spermatogenesis, General malaise, Lassitude, Tremor, Backpain, syncope. |
| 5. | Kaarppu (Pungenl) | Dryness of the tongue, General malaise, lassitude, tremor, back pain, syncope, affects spermatogenesis. |
| 6. | Thuvarppu (Astringent) | Abdominal discomfort, thoracic and cardiac disease, dryness of tongue generalised tiredness, Impotency, vascular contraction and constipation. |

உணவு - திருவள்ளுவர் கூறியவாறு மூவகை மாறுபாடுகள் இல்லாமலிருத்தல் அவசியமானது. அவை,

1. சுவை வீரியங்களால் மாறு கொள்ளாமை:

பண்டங்களின் குணங்கள் (சத்துவ குணம், இரசோ குணம், தமோகுணம்) அவைகளின் சுவையாதி தன்மைகளால் வாதம், பித்தம், கபம் இவைகளில் மாறுபாடு ஏற்பட்டு நோயை வருவிக்கிறது.

| | | |
|----------------|---|---------|
| Aagayam + Vali | - | Vaatham |
| Thee | - | Pitham |
| Mann + Neer | - | Kabam |

சுவையும் பஞ்சபூத கூறுபாடும்:

| | | |
|-----------------|---|-----------|
| Mann + Neer | - | Inippu |
| Mann + Thee | - | Pulippu |
| Neer + Thee | - | Uppu |
| Vali + Aaghayam | - | Kaippu |
| Vali + Thee | - | Karppu |
| Mann + Vali | - | Thuvarppu |

TABLE - 8

| Uyir Thathukkal | Increased Taste | Decreased Taste |
|-----------------|---------------------------|---------------------------|
| Vaatham | Kaippu, Karppu, Thuvarppu | Inippu, Pulippu, Uppu |
| Pitham | Pulippu, Uppu, Karppu | Inippu, Kaippu, Thuvarppu |
| Kabam | Inippu, Pulippu, Uppu | Kaippu, Karppu, Thuvarppu |

2. உண்பான் பகுதியோடு மாறு கொள்ளாமை:

1. ஆண், பெண் என்ற பிரிவுக்கு தக்கவாறு
2. வயதுக்கு தக்கவாறு
3. தேகவுழைப்புக்கு தக்கவாறு
4. இயற்கைத் தேக அமைப்புக்கு தக்கவாறு உணவு கொள்ள வேண்டும்.

3. கால தேச இயல்புக்கு மாறுபாடின்மை

காலம் என்பது ஆறு பருவகாலங்களையும், ஆறு பொழுதுகளையும் குறிக்கும்.

The state of three humors in a particular kaalam and the advised tastes are tabulated below.

TABLE - 9

| Sl.No. | Kaalam | State of Kuttram | Advised suvai |
|--------|----------------------|---------------------------------|----------------------------|
| 1. | Karr Kaalam | Vaatham ↑↑ Pitham ↑ | Inippu, Pulippu, Uppu. |
| 2. | Koothir Kallam | Vaaltham — Pitham ↑↑ | Inippu, Karppu, Thuvarppu |
| 3. | Munpani Kaalam | Vatham — Pitham — Kabam — | Inippu, Pulippu, Uppu |
| 4. | Pinpani Kaalam | Kabam ↑— | Inippu, Pulippu, thuvarppu |
| 5. | Elavenir Kaalam | Kabam ↑↑ | Karppu, Karppu, thuvarppu |
| 6. | Muthuvenir Kaalam | Vatham ↑ Kabam | Inippu |

↑ - Thannilai Valarchi

↑↑ - Vetrunilai Valarchi

— - Thannilai adaithal

தேசம்:

உணவுத் தன்மை அவரவர்கள் வசிக்கும் நாடுகளின் தட்ப வெப்ப நிலைகளுக்கும் பொருந்தி இருக்க வேண்டும்.

உணவின் அளவும், காலமும் மாறுபடுவதனால் ஏற்படும் நோய்கள்

I - குறை உணவு

II - மிகு உணவு

II - அகால உணவு

உடலாதி செயல்கள்:

நோய்க்கு அவரவர்களுடைய ஊழ் வினைகளும், வசிக்கும் இடங்களின் நீர் வளங்களும் (காலங்களும்) காரணம் என்று கூறப்படும், அவரவருடைய தனி ஒழுக்கமே அவைகட்கு மிக முக்கிய காரணமாகும்.

பிணியணுகா விதியில் விதிக்கப்பட்ட ஒழுக்க நெறிகளிலிருந்து மாறுபட்டு நடக்கும் போது நோயை வருவிக்கிறது.

III. Environmental factors:

“அண்டத்திலுள்ளதே பிண்டம்” என சட்டமுனி கூறுவதால் அண்டத்தில் ஏற்படும் மாற்றங்கள் அனைத்தும் பிண்டத்தை பாதிக்கும்.

மனித உடலில் ஒரு சில உறுப்புகள் பிரபஞ்சத்தால் பரவி நிற்கும் சில தத்துவங்களின் பொதுவான சக்தியால் செயல்படுத்தப்படுகிறது.

அவ்வாறான உறுப்புகளில்,

| | | |
|--------------------|---|-----------|
| தமரகம் | - | சூரியன் |
| மூளை | - | சந்திரன் |
| பித்தப் பை | - | செவ்வாய் |
| நுரையீரல் | - | புதன் |
| நீர்க்குண்டிக்காய் | - | சுக்கிரன் |
| கல்லீரல் | - | குரு |
| மண்ணீரல் | - | சனி |

எனவே சுற்றுச்சூழலில் ஏற்படும் மாறுபாடுகளை மனிதனுக்கு நோயை விளைவிக்கிறது.

Uyir Thathukkal:

It is of 3 types namely

- Vaatham
- Pitham
- Kabam

These vaatha, pitha, kaba humors will be in the proportion of 1: ½ : ¼ respectively. If there is any changes (increased (or) decreased) from above normaly caused by basic pathologic factors, resulting in disease.

This has been quoted in the following schedule.

TABLE - 10

| Quantitative changes | Signs and symptoms | | |
|----------------------|--|---|---|
| Increased | Vaatham | Pitham | Kabam |
| | Wasting, blakish discolouration, tremors Distended abdomen, constipation, weakness, Insomnia, lack of inspiration | Yellowish discolouration of eyes, skin Urine, Motion Polyphagia, polydypsia, burning sensation all over the body, sleeplessness | Loss of appetite, excessive sativation. Diminished activity, heaviness whiteness, excessive musculature, cough, dysponal, excessive sleep. |
| Decreased | Body pain, feeble voice, Diminished capacity of brain, syncope | Decreased appetite, cold, pallor, symptoms associated with defective growth of kabam | Giddiness, dryness of the joints, prominence of bones, dry cough, Lightness, excessive sweating, palpitation. |

Udal thathukkal:

The human is built up by the 7 Udal thathukkal which are present in certain fixed proportions in every body. If any changes in the proportions (increased or decreased) the following diseases will occur.

TABLE - 11

| S.No | Udalthathukkal | Increased features | Decreased features |
|-------------|------------------------|--|---|
| 1. | Saram | Features identical to those encountered in increased kabam occurs (eg. loss of appetite etc) | Dryness of skin, loss of weight tiredness, diminished activity of sense organs. |
| 2. | Senneer | Boil and tumours in different parts of the body. Splenomegaly hypertension, reddishey and skin, jaundice haematuria etc. | Tiredness, Dryness, Lassitude, Anaemia |
| 3. | Oon | Tumours (or) extra growth around the neck, face, abdomen thigh, genitalia etc. | Muscle wasting, Lethargic sense organs. |
| 4. | Kozhuppu | Identical features of increased Oon, associated with dyspnea on exertion. | emaciation, Loin pain |
| 5. | Enbu | Excessive ossification and dentition | Weak bone, Nails and Teeth associated with splitting of Hairs, Nails. |
| 6. | Moozhai | Heaviness of body, eye, swollen inter phalangeal joints, Oliguria, Non – healing ulcers. | Osteoporosis and sunken eyes. |
| 7. | Sukkilam or suronitham | Increased sexual activity, urinary calculi. | Pain in the Genitalia accompanied by inability to reproduce. |

Vegam – 14:**1. Vaatham – Abanan – Downward force:**

If a person controls his “Abanan” the following disease will occur.

Heart disease, Vaatha Gunmam, Kudal vaatham , Vallai Vaatham, constipation, oliguria, loss of appetite.

2.Thummal – sneezing:

One who controls the sneezing he will be affected by the following diseases.

Headache, special sensory organ defect, fascial pain, Iduppu vaayu.

3.Siruneer – Urine:

If a person does not respond to the micturation reflex, the following disease will occur. Neerkattu, urethral ulcer, joint pain, Pain in the penile soft, flates abdomen.

4.Malam – fances:

If a person who is not doing defaecation he will be affected by the following diseases. Diarrhoea caused by increased Abanan, knee pain, Headache, weakness, and it leads to many diseases.

5.Kottavi – Yawning:

If few control kottavi, we will have to face the following disorders. Lethargic face, exhaustion, Indigestion, Leucorrhoea, Neer noi. Abdominal disease, Loss of consciousness.

6. Pasi – hunger,

7. Neervetkai – Thirst:

If we control our pasi, we will be affected by following conditions. All organs affected, emaciation, soolai Noi, syncope, apathic face, joint pain.

8.Kasam - Cough:

The person who is trying control the kasam, increased cough, bad breathe, heart disease will occur.

9.Ilaippu - Exhaustiveness:

If we control our Ilaippu (Exhaustiveness) peptic ulcer, Neer megam, syncope, rigor are occur.

10.Nithirai – sleep:

If we do not have enough of sleep, we will have to meet the following impacts. Heaviness of Head, Eye disease, Deafness, confused speech.

11. Vamanan – Vomiting:

Vomiting is forcible action, if we control that, the following opposition reaction will occur. Utricularial rashes, Itching sensation, Anaemia, Eye disorders, Asthma, Fever, Cough, increased pitha disease.

12. Vizhineer – Tears:

If we control the tears following defect will come.

Heart diseases, sinus diseases, eye diseases, Necrotic ulcers in the scalp, peptic ulcer.

13.Sukkilam:

If we do not have the way for normal ejaculation of sukkilam Fever, Neerkatu, joint diseases, palpitation, chest pain, white discharge will occur.

14. Swasam – breathing:

Controlling breathing, resulting in the following diseases.

Cough, Abdominal discomfort Anorexia, Kulai Idippu (Pleural Pain) Fever, venereal diseases (Vettai)

Piniyarimuraimai:**Envagai thervu:**

“தரணியுள்ள வியாதி தன்னை யட்டாங்கத்தால்

தானறிய வேண்டுவதுயேதோ வென்னில்

திரணியதோர் நாடி கண்கள் சத்தத்தோடு

தேகத்தினது பரிசம் வருணம் நாக்கு

யிரண மலமுத்திரமமிவைகளெட்டும்

யிதம் படவேதான் பர்த்துக்குறிப்புங் கண்டு

பரனருளால் பெரியோர்கள் பாதம் போற்றிப்

பண்பு தவறாமல் பண்டிதஞ் செய்வீரே”

- குணவாகட நாடி

1.Naadi – Pulse:

The rhythmic expansion of an artery which may be felt by the fingers.

In siddha – உடலில் உயிர் தரித்திருப்பதற்கு காரணமான சக்தியே தாது அல்லது நாடி என்பார்.

Places for pulse:

குதிசந்து, காமியம், உந்தி, மார்பு, காது, மூக்கு, கண்டம், கரம், புருவம், உச்சி.

Examination of the Naadi

Naadi is felt as

| | | |
|--------|---|----------------------|
| Vatham | - | Tip of index finger |
| Pitham | - | Tip of middle finger |
| Kabam | - | Tip of righ finger |

In normal condition, the ratio of the naadi is as follows.

“மெய்யளவு வாதமென்று
மேல் பித்தம் மேரையாகம்
ஐயக் காலென்றே அறி”

The gait of the naadi

| | | |
|-------------|---|--------------------------------|
| Vatha Naadi | - | Movement of swan and hen |
| Pitha Naadi | - | Movement of Tortoise and leech |
| Kaba Naadi | - | Movement of Frog and serpent. |

Naadi indicating the state of doshaas

| | | |
|---------|---|-----------------------|
| Vaatham | - | Erratic and irregular |
| Pitham | - | Quick and jumping |
| Kabam | - | Slow and heavy. |

2.ஸ்பரிசம்:

ஸ்பரிசம் என்பது தொட்டுணர்தல். தேரையர், “மெய்க்குறி” என குறிப்பிட்டுள்ளமையால் மெய்யில் காணக்கூடிய குறிகள் என பொருள் கொள்ள வேண்டும்.

| | | |
|----------|---|--------------------------|
| Vaatham | - | Decreased heat |
| Pitham | - | Increased heat |
| Kabam | - | Cooling |
| Thentham | - | Difference about disease |

3. நா:

From ancient siddha system, the tongue has been regarded as an invaluable clinical indicator of the health and disease.

In the examination of Naa includes

Colour of the tongue, Deposition of the tongue, Increased salivation, dryness, Ulceration, horny tongue, Glossitis, fissured tongue, Massive tongue, Microglosia, Inflamed tongue, irregular margins of tongue, Any abnormal growth, perverted taste, distaste, tongue tie, bifid (or) trifold tongue etc can be noted.

4. நிறம் (Colour):

| | | |
|----------|---|-----------------|
| Vaatham | : | Black |
| Pitham | : | Yellow (or) red |
| Kabam | : | White |
| Thontham | : | Many colours. |

In Niram, the colour of skin, Nail, Hair, conjunctiva, teeth, mucous membrane etc., to be noted.

5. மொழி:

வார்த்தையை பார்! என “அகத்தியர் வல்லாதியில்” கூறப்பட்டதிலிருந்து நோயின் துன்பம் மற்றும் குரலின் தன்மை, மொழித் திறன் ஆகியவற்றை அறிய முடியும்.

| | | |
|-------------|---|---------------------------|
| Palaroghi | - | Different types of speech |
| Vaatharoghi | - | Normal speech |
| Pitharoghi | - | High pitched |
| Kabaroghi | - | low pitched |

In the examination of mozhi

The pitch of the voice (high or low) laughing, speech in hallucination, crying, breathlessness (or) wheezing and incompleteness may be noted.

6. விழி:

Eyes are considered as the windows of the body. Eye examination is an indispensable parameter for the physician in the diagnosis of a disease, because A physician beholds the eyes of a patient, at the first sight.

| | | |
|----------|---|------------------|
| Vaatham | - | Black with tears |
| Pitham | - | Yellow colour |
| Kabam | - | White colour |
| Thontham | - | Yellow colour |

7. மலம் (stools):

In the examination of malam, its nature whether it is solid semi solid or liquid, its colour, quantity increased or decreased are to be noted.

Other findings such as diarrhoea presence of blood, mucus, indigested matter in the stools and odour should also be studies.

| | | |
|-------|---|---------------|
| Vali | - | Black colour |
| Azhal | - | Yellow colour |
| Iyam | - | White colour |

8. மூத்திரம்:

In the examination of urine: colour, odour, quantity of urine, the presence of forth, deposits, blood, pus, small stones, abnormal constituents such as sugar, protein etc and the frequency of micturation are to be noted.

| | | |
|---------|---|---------------------------------------|
| வாதம் | : | நீர் தெளிந்திருக்கும் |
| பித்தம் | : | மஞ்சள் நிறம் |
| கபம் | : | சீதம் கலந்து காணும் |
| தொந்தம் | : | மேலே கூறிய மூன்றும் கலந்து இருக்கும். |

Collection of urine for neer kuri and neikuri

Prior to the day of urine examination the patient should be advised to take a balanced diet and should have a good sleep. The very first urine of the patient is collected in a glass container. The colour of the urine is noted. The urine specimen is taken.

Neer Kuri:

வந்த நீர்கரி எடை மணம் நுரை எஞ்சலென

றைந்தியலுளவை யறைகுது முறையே

| | | |
|-------|---|--|
| Niram | - | Yellow, red, green, black crystal and smoley. |
| Manam | - | Pleasant, foul smelling, honey smell, fruit smell and flesh smell. |
| Edai | - | Specific gravity Increase or decrease density. |

| | | |
|-----------|---|--|
| Nurai | - | Forth with or without colouration |
| Enjal | - | amount of urine expelled |
| Frequency | - | Increased frequency, dripping incontinence. |

Neikuri:

“அரவென நீண்டின் அ.:தே வாதம்
ஆழி போற் பரவின் அ.:தே பித்தம்
முத்தொத்து நிற்கின் மொழிவதன் கபமே”

Though the uring should be examined only in the morning during emergency it may be done in any time.

By careful examination of the urine, with gingelly oil, the physicians should know whether disease is curable or incurable. For this purpose siddhars have explained various spreading nature of uring to classify the disease.

AIM AND OBJECTIVES

Siddha System is considered to be the most ancient therapeutic science in the world. Siddhars have identified four thousand four hundred and forty eight disease and Scientifically arranged eighty type of Vaatha diseases, forty types of Pitha disease and twenty types of Kaba disease and so on.

Among all the forms of treatment Noi Naadal (or) identification of disease and Noi Muthal Naadal (or) the determination of the aetiology of the disease are the most important aspects. Once the diagnosis is accurate the treatment may be easily fulfilled.

In “*Chikicharathna Deepam*”

“மதித்திடற் கருமை வாய்ந்த

மரண் பரிகர மெல்லாஞ்

துதித்திட உணர்ந்தா னேணுந்

துகளறப் பிணியின் றன்மை

பதித்திட வுணரா னாகிற்

பயன றானா காலானே

விதித்திடு பிணித்திறத்தை

விளம்புது முதற்கண் மன்னே”

Super intellectual siddhars, devised and utilized a special cost effective technique for diagnosing a disease know as Envagai Thervual. They are Naadi, Sparisam, Naa, Niram, Mozhi, Vizhi, Malam and Moothiram.

The following specific objectives have been drawn to achieve the above aim,

- Collecting Siddha literary evidences about “*Vadha Chatma Kshayam*”
- To Study the clinical course of the disease *Vadha Chaetma Kshayam* with clean observation on the aetiologoy, clinical features and diagnosis.
- To make a thorough physical examination of the patient.

- To findout the changes that occur in *Uyirthathukkal*, *Udalthadukkal* and in Naadai.
- To support the study of *Vadha Chaetma Kshayam* by using *Envagai Thervugal*, mentioned in Siddha literature with modern parameters.
- To discuss the complications of the *Vadha Chaetma Kshayam*

ELUCIDATION ABOUT “VADHA CHAETMA KSHAYAM”

According to the Literature Yugi Vaithiya Chinthamani, Vadha Chaetma Kshayam has been described under kshaya Roga Nithanam as,

வாத சேட்ம ஷயக்குறிகள்

“தானான தொனி பேதங் தொண்டைக்கம்மல்

சரங்கமாஞ் சுரமோடு சுவாசஞ் சத்தி

கானான இருமல் சரீரங் கடுப்புக்

கடுங்கோழை வெகு பலவீனமுமே யாகும்

ஆனான அக்கினி மந் தத்தினோடு அரோசிகமாஞ்

சரீரமது வெளுப்புண்டாகும்

வானான கால்கையும் வற்ற லாகும்

வாத சேட்ம ஷயத்தின் வறற தாமே”

➤ யுகி வைத்திய சிந்தாமணி

➤ பரடல் எண் : 681

Meaning of the words in this poem.

| | | |
|----------------|---------------------------------|--|
| தொனிபேதம் | ❖ ஒலிவேற்றுமை | Having a rough sound |
| தொண்டைக்கம்மல் | குரல்கம்மல் | hoarseness of voice (Raspy Voice) |
| சரங்கமாஞ் | ❖ பறவை, சரங்கபாஷாணம் | Bird |
| சுரம் | ❖❖ காய்ச்சல் | Fever |
| சுவாசம் | ▪ இரைப்பு உயிர்ப்பு | Wheeze |
| சத்தி | ❖❖ வாந்தி | Vomiting |
| இருமல் | ❖ புகைச்சல் கக்கல், கக்குதல் | It is a sudden nosiy expulsion of air from the lungs due to an |

| | | |
|----------------|---|--|
| சரீரங்ககடுப்பு | ❖❖❖ உடல் அகங்காரம் எரிவு, கடுநோய், நோவு, உடல் நலகுறைவு | inflammation of the bronchial tubes – cough A Vague feeling of bodily weakness (or) discomfort (Malaise) severe pain. Aching pain |
| கடுங்கோழை | ◆ மிக்ககோழை, வேக சிலேற்பனம் | Copious amounts of sputum. |
| வெகுபலவீனமே | ❖❖❖ அசதி, வலிமையின்மை, அயர்ச்சி, களைப்பு, தளர்ச்சி | Feeling of being extremely tired (fatigue Lassitude) |
| அக்கினி மந்தம் | ❖ அசீரணம், சோம்பல், தாமதம் | Indigestion |
| அரோசிகம் | ❖ பசியின்மை, வெறுப்பு, அருவருப்பு , | Loss of appetite (Anorexia) |
| வெளுப்பு | ● வெண்மை, வெளுத்தல் விடியல் | Anemia (Whiteness) |
| கால்கை வற்றல் | ● குறைவு, மெலிதல் | Loss of weight |
| வாதம் | ● இரசவாதம், காற்று, சம்பாஷணை, தடுக்கமுடிவு, தருக்கம் முடிவு, முறைப்பாடு, வில்பம், முப்பிணியில் ஒன்று | Wind |
| சேட்பம் | ● கபம், கோழை | Phlegm |
| ஷயம் | ● ஆம்பல், இரவி, கூட்டம், கை, சருக்கரை, மாலை, வெற்றி, ஒருவியாதி, சாரம், சிதைவு, நட்டம், படுக்கை கெடுதல் | |

This is considered to be a fatal disease. It is a wasting disease and hence this name ஷயம்

- Congenital heat
- Excessive sexual enjoyment
- Untimely meals
- Severe distress

are causing this disease. Gas gets vitiated the gastric fire decreases, small air passages of the lungs get blocked, general heat decreases, and vitiates all the seven tissues which unable to absorb their nutrition get wasted in long run the modern science considers this disease is caused by bacteria.

❖ T.V. Sambasivam pillai volume I,IV,V

❖❖ Lexicon

❖❖❖ அருங்கலைச் சொல் - அகரமுதலி

▪நோய் நாடல் நோய் முதல் நாடல் - 2ம் பாகம் - மருத்துவர் வேணுகோபால்

Description:

“தொண்பேதங் தொண்டைக் கம்மல்”

தொண்பேதங் - Voice Change

தொண்டைக்கம்மல் - Sounding rough and unpleasant

(Hoarseness, Raspy voice)

This line denotes that the patient suffers from hoarseness of voice because of sore throat.

“சரங்கமஞ் சுரமோடு சுவரசஞ் சத்தி”

சரங்கம் - பறவை (bird)

சுரம் - fever

சுவாசம் - wheezing

சத்தி - vomiting

This line denotes that the patient suffers from bird flu like fever, wheezing and vomiting.

“கரணான இருமல் சரீரங் கடுப்பு”

காணான இருமல் - Chronic cough

சரீரங் கடுப்பு - Malaise

This line denotes that the patient suffers from unvisceral cough with malaise. As yugi states that the disease will cause “காணான இருமல்” it can be interpreted that the patient suffer from so much of cough (chronic cough).

“கடுங்கோழை வெகு பலவீனமுமே யாகும்”

கடுங்கோழை - Copious amounts of Sputum.

வெகுபலவீனம் - fatigue

This line denotes that,

During the chronic cough, the patient is coughed out excessive amount of sputum from the lung and get a feeling of being extremely tired.

“ஆணான அக்கினி மந்தத்தினோடு அரோசிகமரஞ்”

அக்கினி மந்தம் - Indigestion.

அரோசிகம் - Loss of appetite (Anorexia)

This line denotes that the patient suffers from indigestion and loss of appetite.

“சரீரமது வெளுப்புண்டாகும் ”

சரீரம் - உடம்பு

வெளுப்பு - Anaemia

This line denotes that the disease will cause the patient to suffer from anaemia because of sometimes the patient have haemoptysis (Sputum with blood)

“வானான கால் கையுல் வற்றலாகும்”

கால்கையுல் வற்றல் - Loss of weight

Continuation of above symptoms the patient have loss of weight.

Symptoms of Vadha Chaetma Kshayam can be summarised as follows.

- Hoarseness of voice (Raspy Voice)
- Fever
- Wheezing
- Vomiting
- Chronic cough with malaise
- Copious amount of sputum with fatigue
- Digestive disturbance, Dyspepsia (Imperfect digestion)
- Anorexia (loss of appetite)
- Anaemia
- Weight loss.

REVIEW OF LITERATURE
SIDDHA ASPECT
VADHA CHAETMA KSHAYAM

Vadha Chaetma Kshayam is one of the type “*Kshaya Roga disease*” under *Kaba Noigal*

இயல்

“கண்டமும் நெஞ்சங் காய்ந்து கண்ணுமுட் குழியுநீடி
அண்டிடு காலை மாலை யருஞ் சுரந்தோன்றிக்கூறும்
யிண்டிய இருமல் யிஞ்சி வெகுநாளாய் நீற்கிலிது
கொண்டிடு சயரோகந்தான் கூறுநன் மருந்து கேண்மோ”

➤ வைத்திய விளக்கம்

Definition :

The Kshaya Rogam is defined as throat, thorax are to be dried and become emaciation of body, presence of temperature raise in morning and evening, chronic cough.

Synonyms :

1. Eelai 2. Kaba Noi 3. Arasa Noi 4. Raja yashma 5. Sosai 6. Kshaya Noi.

1. Eelai :

It means copious amount of sputum with cough (or) increased Kabam – Vaetru Nilai Valarchi.

Kaya Noi :

Kayam – Kasam – Depth – Darkness

It means to be dried of humour of body and become emaciation.

Kasem – Depth of the Sea.

Arasa Noi :

It means group of disease

Sosai :

General name for decreasing of body humour .

Yashma – Decreasing of body humour due to Kshayam.

Kshaya Noi :

In T.V. Sambasivan Pillai Agarathi, Kshayam denotes bed. So the disease will cause the patient to suffer from the bed-riddin in so many months and years.

II. Aetiology :-

The causes of Kshaya Noi told in Siddha literatures have many school thought. Here various causes has been explained by various Siddha Literatures.

I. According to Yugi

"வேகின்ற கஞ்சாவால் மிகுந்த உப்பால்

மீறியதோர் காரத்தால் மிக மயக்கால்

தோகின்ற மருந்தீட்டார் சுனையி நீரால்

சுசியில்லங் பதார்த்தங்கள் சக்கரன் றண்ணீர்

வாகின்ற வக்கினியால் மிகுந்த வெய்யில்

வருத்தத்தில் ஷயரோக மருவங்கானே

காணவே கற்பழித்தல் பொய்யே சொல்லல்

களவாடல் பிறர் பொருளைக் கண்டா சித்தல்

ஆனவே யடுத்தோரைக் கெட நினைத்தல்

ஆகதி பரதேசியரை யகந்தை சொல்லல்

உலிவை பந்துவை வஞ்சித்தே யுண்ணல்

உதாசினமா இகழ்ந்தோரை இகழ்ச்சிபேசல்

வேணவே காதினிற் கேளாத சொல்லை

மிகச் சொன்னோன் ஷயத்தில் வந்து மெலிகுவாரோ"

Causes:

a. Dietetic factors :

- Excessive intake of spicy foods and Ganja
- Excessive intake of Poisons food.
- Excessive intake of Unhygienic food, uncooked food, mal-nourished diet.
- Frequent Starvation.
- Polluted Water.

b. Environmental factors : -

- Sitting near the fire.
- Roaming in glare of the sun.

c. Mental and social factors :-

- Exhaustion (suffering pain)
- Lie
- Theft
- Desire to others things
- Disgrace the poor people
- Defraud
- To speak dislike words.

2. According to Madhava Nithanam :-

- Suppression of 14 reflexes
- Excessive hardwork
- Intake of toxic foods.

3. According to Ashtanga Hridaya :

- Excessive sexual desire
- During pregnancy, increased sexual contact.

- Suppression of 14 reflex
- Improper use of food and water.

4. According to Agasthiyar Kanman Kadam

- Ejaculation of sperm.

5. According to Agasthiyar Gunavagadam

“சயரோகம் உண்டாகும் நேர்மை தன்னைச்
சுற்றுக்கிறேன் மாநிலத்தில் மாந்தர்க்கய்யா
சயரோகம் வரும்போது ஏத்தந்தன்னில்
காணுகிற சிறுகிருய் சுவாசப்பையின்”

This disease is caused by bacteria

6. According to Guru Nadi Nool

“ஷயரோக மெழுந்தவகை சொல்லக்கேள்
தலைதனிலே கனலெழும்பி நீர் தானேற்று
மயமாக இருபுறமுந் தமருண்டாகி
மதுரமெனும் ருசிபிறந்து வாய்நீருறி
சயமாக மண்டையினீர்க் கீழிறங்கிச்
சுவாசமது நெஞ்சில் வந்து சுவறியெங்கும்
நயமான கயரோகம் நாடுங்காலை
நன்மையுடன் பண்டிதரை நாடிப்பாரே”

- Frequent starvation
- Sleeplessness
- Excessive hardwork
- Extreme poverty
- Air – Pollution of Home
- Mal – Nourished diet

- Polluted water
- Associated with other diseases (STD, high fever)

7. According to “ப.சி.சில்லரைக்கோவை”

“விளம்பினார் சயரோகம் வருதல்கேளு
 விசையான தலத்தில் சூடு கொண்டு
 தளம்பியே கபாலத்தின் ஓடி சாடித் தாது வெல்லாங்
 கலகலத்து ரத்தம் வற்றி
 உளம்பியே நீரைநிந்து சுரமுந்தோன்றி
 உளைச்சலாடி பீனிசமிருமல் நாக்கு ருசியற்று
 கிளம்பியே எட்டுவகை சயங்களாகிக்
 கீழாறு கொண்டு விடு யிளைப்புத் தானே”

When increased heat reaches to brain, body humours are dried then appearance of fever, a vague feeling of body, sinusitis, cough, tactlessness, weight loss.

8. According to karuma choothiram

“தழைத் தோங்கும் சமனனால் தயவாய்க் கேளாய்
 சித்தியென்ற கூர்மனிட கொடுமையாலே
 தேவதத்தன் தனஞ்செயனால் சலமே யிஞ்சி
 நித்தியமும் ஓயாமல் இளைப்புத் தோன்றும்”

Emaciation, Cough are caused by increased destruction of Samanan, Koorman, Devathanthan , Dhananjeyan.

III. Classifications:

The disease kshayam has been classified as many types by various literatures as follows.

1. According to Yugi 12 types

"தானான ஷயமதுதான் பனிரெண்டாகும்
தாக்கான பிர்மென்றுச யந்தானென்று
வானான ராஜ ஷயம் வைசிய ஷயந்தான்
மருவு சூத்திர ஷயந்தான் வாதஷயமாகும்
பூனான பித்த ஷய சேட்பத்தோடு
பிரண்டதோர் வாதபித்த ஷயமுமாகும்
கானான வாதசேட்டும ஷயந்தான்
கரும்பித்த சேட்டுமத்தின் ஷயமுமாகே
ஆகின்ற விகார ஷயந் தொந்த ஷயந்தான்
ஆடங்கிலுமே பனிரெண்டு விதமுமாகும்"

- Birma Kshayam
- Raja Kshayam
- Vaishiya Kshayam
- Suthira Kshayam
- Vatha Kshayam
- Pitha Kshayam
- Chatma Kshayam
- Vatha Pitha Kshayam
- Vatha Chactma Kshayam
- Pitha Chaetma Kshayam
- Vighara Kshayam
- Thontha Kshayam

2. According to Pararasa sekaram

"புலியிசை ராசரோகம் பொருந்திடும் வாலம் வீரம்
கலிபெறு தருணயிக்க கணிதமே கலின மங்கல்
அலிதருஞ் சயமெ மற்ற வாரதந் தெடசிமாவோ
டிவையிரு நான்கு வேதமிவை குணங் கூறுவனே"

- Vala Kshayam
- Veera Kshayam
- Dharuna Kshayam
- Kanitha Kshayam
- Dhavana Kshayam

In other place, Pancha Kasem is classified into 5 types.

- Vatha Kasem
- Pitha Kasem
- Chilaerpana Kasem
- Utcha Kasem
- Katha Kasem

In this Kshayam Asathiyam 4 types.

- Sura Kshayam
- Raja Kshayam
- Indhiri Roga Kshayam
- Rattha Kshayam

3. According to Dhanvanthiri

- Vala Kshayam
- Vera Kshayam
- Varuna Kshayam

- Kanigha Kshayam
- Dhabana Kshayam
- Aratham Kshayam
- Letchamam Kshayam

4. According Sarabaendra Vatihiya Murai

Same as Yugi's classification

5. According to Noi Naadal Noi Mudhal Naadal

- Vatha Ilaippu
- Pitha Ilaippu
- Kaba Ilaippu
- Vatha Pitha Ilaippu
- Vatha Kaba Ilaippu
- Pitha Kaba Ilaippu
- Mukkuttra Ilaippu

6. According to Jeeva Rakshamirtham

- Oorthurva Kadha Thodam
- Adho Kadha Thodam
- Kotta Kadha Thodam
- Thiriyakka Kadha Thodam
- Santhiga Kadha Thodam

7. According to "Anubava Vaidhya Devharagasium

- Vatha Kshaya rogam
- Pitha Kshaya rogam
- Kaba Kshaya rogam
- Thirithosa Kshaya rogam

8. According to T.V. Sambasivam Pillai

Same as Yugi's Classification

9. According to "Siddha Maruthuvam"

Ilaippu Noigal :-

I. Stimulation of upward force,

- Ilaippu Noi in nose
- Ilaippu Noi in Throat
- Ilaippu Noi in neck
- Ilaippu Noi in Thorax
- Ilaippu Noi in Axilla

II. Stimulation of downward force

- Intestine and intestinal associated organs.

III. Stimulation of centre force

- Spleen
- Kidney

IV. Stimulation of Spreading force

- Skin
- Thorax

V. Ilaippu Noi in joints, bones

- About joints
- In Children.
 - Tubercular knee and below joint
 - Tubercular hip joint
- About bones.

IV. Clinical features :

According to Yugi

"தானான தொனி பேதங் தொண்டைக்கம்மல்
சரங்கமாஞ் சுரமோடு சுவாசஞ் சத்தி
காணான இருமல் சரீரங் கடுப்புக்
கடுங் கோழை வெகு பலவீனமுமேயாகும்.
ஆனான அக்கினி மந் தத்தினோடு அரோசிகமாஞ்
சரீரமது வெளுப்புண்டாகும்.
வானான கால் கையும வற்றலாகும்
வாதசேட்ம ஷயத்தின் வாற தாமே "

1. Hoarseness of voice (Raspy Voice)
2. Fever
3. Wheezing
4. Vomiting
5. Chronic cough with malaise
6. Copious amounts of sputum with fatigue
7. Anorexia (Loss of appetite)
8. Anaemia
9. Weight Loss.

2. According to Sarabendra Vaidhya Muraigal

(Kshaya Roga Ulamanthai Roga Sikhichai)

"தானான தொனி பேதங் தொண்டைக்கம்மல்
சரங்கமாஞ் சுரமோடு சுவாசஞ் சத்தி
காணான இருமல் சரீரங் கடுப்புக்
கடுங் கோழை வெகு பலவீனமுமேயாகும்.
ஆனான அக்கினி மந் தத்தினோடு

அரோசிகமாஞ் சரீரமது வெளுப்புண்டாகும்.

வானான கால் கையும் வற்றலாகும்

வாதசேட்ம ஷயத்தின் வற தாமே ”

1. Hoarseness of voice (Raspy Voice)
2. Fever
3. Wheezing
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5. Chronic cough with malaise
6. Copious amounts of sputum with fatigue
7. Anorexia (Loss of appetite)
8. Anaemia
9. Weight Loss.

3. According to Noi Naadal Noi Mudhal Naadal Part II.

1. “வாதகப தொந்தமெனும் வளியையக் கலப்பில் வரு

யினளப்பிருமல் வகுக்கக் கேளாய்

கோதமரு மொழியின்மிகு குத்திருமல் ஒலிமாரல்

கம்மல் வன் கோழை வீழல்

ஏகமுடன் வாந்தி சுர மிக்க காய்தல்

மிகுமூச்சு நுரையிலெச்சிலு மிழ்தல்

ஒதுதலை நோதலுடன் வற்றல் கை கால் வற்றல்

அரோசக முடல் வெளுப்பே”

2. “உடல் கடுத்தல் தாதுநட்டம் உற்ற பசியின்மை

உடல் வன்மை யின்மை யுறுமே - திடமாகச்

சோர்வுவரு மென்றுரைப்பர் தொல்லோர் பல பிணியுஞ்

சாறுபெற நீயுமுரை தா”

➤ கையெழுத்துப் பிரதி.

1. Cough
2. Hoarsteness of voice
3. Copious amounts of sptum
4. Wheezing
5. Vomiting
6. Fever
7. Headache
8. Loss of weight
9. Anaemia
10. Malaise
11. Anorexia
12. Fatigue
13. Preejaculation of sperm.

4. According to Chilaerpana Noi, Udhara Noi Thoghuthi Dr. T. Mohanaraj

"ஆதிமுனி தன்வந்திரி சன் உரை செய்தபடி

வாதமுறு சேர்ப்ப ஷயம் கேள்

அரிய குரல் கெட்டு பனி மேல் மூச்சு சந்தியும்

இருமலொடு தேகநோவு

மோதிவரு கோளையும் தூர்பலம் அக்கினி

மந்தமொடு அரோசிகம்

தானமுறு உடல் வெளுக்குமே கைகால் உணங்குமே"

1. Hoarsenss of voice
2. Breathlessness
3. Vomiting
4. Cough

5. Malaise
6. Copious amounts of sputum
7. Fatigue
8. Imperfect digestion
9. Loss of appetite
10. Anaemia
11. Loss of weight

DETAILED PATHOLOGICAL VIEW OF VADHA CHAETMA KSHAYAM

SIDDHA ASPECT

Introduction about Kabam:

“கபத்தினையன்றி வியர்வை குளிர்ச்சி வராதே”

- தேரையர்

Kaba disease also denotes “Silathuma Noi”

“தானனு மீரேழ் நூறு தன்னிலெண்பத்து மூன்று
ஊனுயிர் சீதளத்தி னூழ்யவினை யதிகஞ் செய்தே
யீனமர முடலும் வற்றி யெமுந்தபின் நோயரதெல்லஞ்
தேனமர மொழியாய் வண்ணஞ் சேத்தமஞ் செப்பலுற்றேன்”

- அகத்தியர் 2000

Types of kabam produced diseases are 1483. These are occur due to cooling and poorva kanmam and it produce emaciation of the body.

“சேத்துமந் தண்ணீர்”

So Kabam is “Neer Bootha” amsam.

- Enippu - Mann + Neer
- Uppu - Thee + Neer

In 6 tastes, Enippu and Uppu are “Neer Bootha” amsam.

| | | |
|--------------|---|--------------------|
| Vatham | - | Aakayam + Kaatru |
| Pitham | - | Thee |
| Kabam | - | Mann + Neer |

Mann and Neer are combined to produce “kaba Thathu”. If any one or both boothas increase, it produces diseases of kaba.

At the same time, increased intake of Enippu or Uppu, it also altered kaba thathu and produce kaba diseases.

In our body. Place of Kabam is neck to head.

Kabam stabilizes, maintains and lubricates all movements.

Locations of Kabam:

Kabam is located in

Samanan , Blood, Bones, Semen, Nose, Large intestine, Head, Chest, Eyes,
Tongue, Nerves, Stomach, Bone Marrow, Brain, Pancreas

Character of Kabam:

Kabam is responsible for

- 1) Stability
- 2) Smoothness
- 3) Lubrication
- 4) It fixes the joints
- 5) It gives ability to cope with hunger, thirst and heat, etc.

Functions of Kabam:

- ❖ Itching, dullness, cold, heaviness, oiliness, loss of sensation.
- ❖ White complexion.
- ❖ Indigestion
- ❖ Excess sleep
- ❖ Sweetness in mouth
- ❖ Whitish discolouration of skin, eyes, urine and motion.

Classification of kabam:

1. Avalambagam : Present in lungs, it controls the
functions of lungs and heart and other kabas.
2. Kilethagam : Lives in stomach, it gives moisture and
softness to the ingested food.
3. Pothagam : Tongue is the centre of pothagam, and
responsible for identifying the tastes.
4. Tharpagam : Present in the head and responsible for
coolness of the both eyes.
5. Santhigam : Responsible for the lubrication and free
movements of the joints which are situated joints.

In Increased condition

- ❖ Loss of appetite
- ❖ Excessive salivation
- ❖ Heaviness
- ❖ Dyspnoea
- ❖ Excessive sleeping
- ❖ Whiteness of complexion
- ❖ Diminished activity

In decreased condition

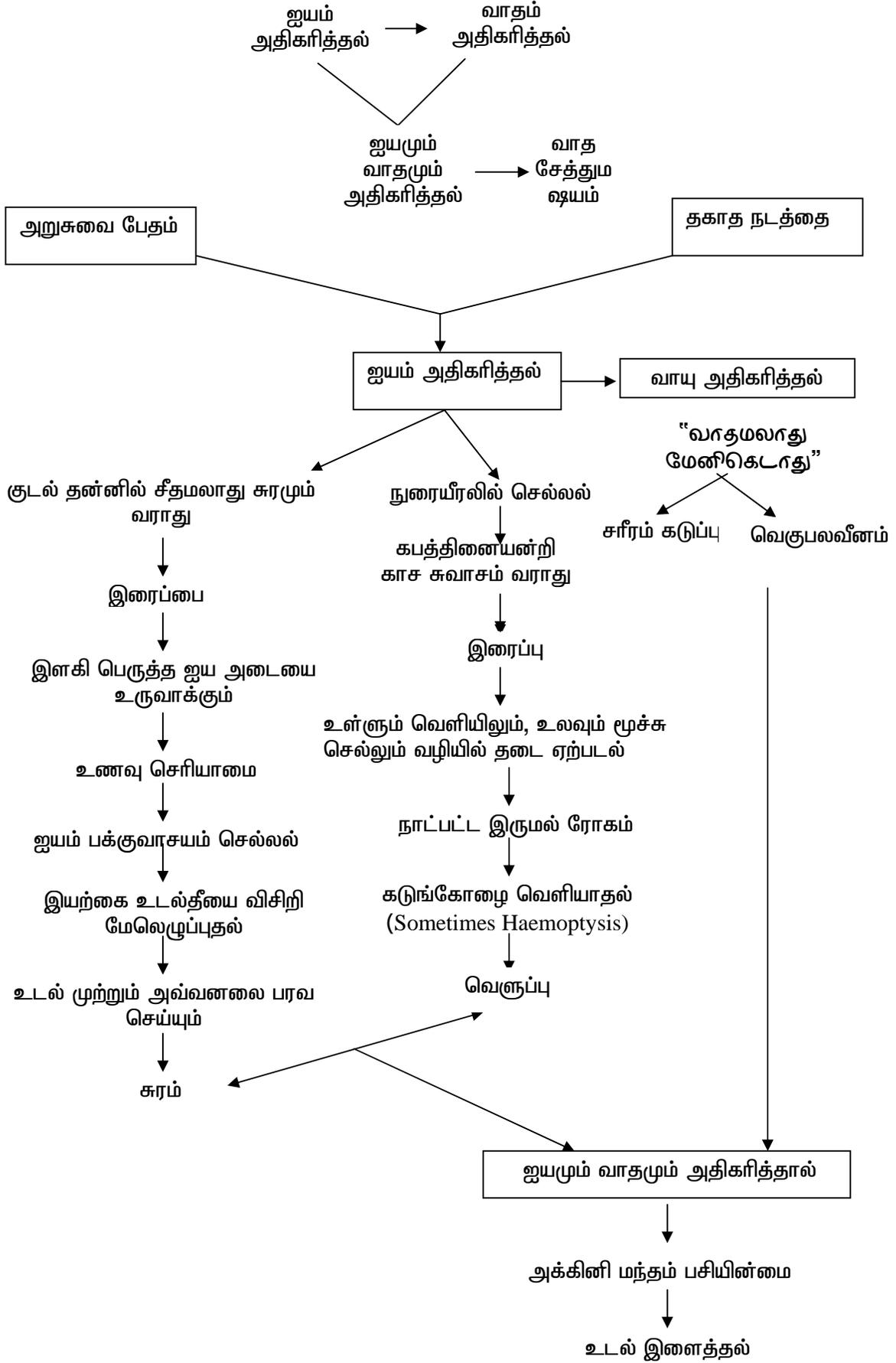
- ❖ Prominence of bony edges
- ❖ Dry cough
- ❖ Lightness
- ❖ Profuse sweating
- ❖ Palpitation
- ❖ Giddiness
- ❖ Dryness of the joints

Six qualities of Kabam

- | | | |
|-------------|---|------------|
| 1) Cold | – | குளிர்ச்சி |
| 2) Heavy | – | பளுவு |
| 3) Immobile | – | அசைவின்மை |
| 4) Sweet | – | இனிப்பு |
| 5) Unctuous | – | ஈரம் |
| 6) Viscid | – | வழுவழப்பு |

Pathogenesis of Vadha Chaetma Kshayam:

சித்த மருத்துவத்தின்படி உடலில் பிணி ஏற்படுவதற்கு ஆதி காரணம் வளி-அழல் - ஐயம் என்னும் மூன்று உயிர்தாதுக்களில் ஏற்படும் மாற்றமே (மிகுதல், குறைதல்) ஆகும்.



Introduction about Kabam:

Any alteration in the food habits (or) Seasonal variations (or) changes in the activities affected kaba thatthu that Produce increased kabam, then the kaba kutram affect the vatha thatthu and produce increased Vatham to produce *Vadha Chaetma Kshayam*, so pitham is decreased in condition respectively.

In this disease, vadha chaetma kshayam following alterations are takes place.

I.Alterations in Mukkutra Nilaigal

Iyam :

- Avalambagam - Cough with expectoration wheezing
- Kilethagam - Anorexia, Indigestion.
- Pothagam - No taste , Salt taste in tongue.
- Tharpagam - burning sensation in eyes
- Santhagam - Malaise, fatigue.

Vali:

- Pranam - Wheezing, Hoarseness of voice
- Apanan - Constipation
- Viyanan - Faligue, malaise
- Udhanam - Cough with expectoration, Vomiting Hoarseness of voice, wheezing.
- Samanan - Anorexia, Indigestion.
- Koorman - faligue, watery oozing from the eyes.
- Kirukaram - Cough, Anorexia, Indigestion.
- Thevathathan - fatigue.

Azhal:

- Anar pitham - Indigestion, anorexia

Ranjaga pitham - Pallor of the conjunctiva and tongue.

Sadhaga pitham - fatigue, malaise

Inference:

Iyam (Increased) - Avalambagam, Kilethagam, Pothagam
Tharpagam, Santhigam are affected.

Vali (Increased) - Pranan, Abaanan, Udhanan, Viyanan, Samanan,
Kirukaran, Koorman, Thevathathan are affected.

Azhal (decreased) - Anar pitham, Ranjaga pitham, Sadhaga pitham are
affected.

II. Alterations in Udal thathugal:

Saaram - Fatigue, malaise, cough, wheezing, anorexia,
whiteness, weight loss.

Senneer - Pallor in the conjunctiva and tongue, fatigue,
anorexia.

Oon - Weight loss, fatigue, malaise

Kozhuppu - Weight loss.

Enbu - Joints Pain

Moolai - Sunken eyes

Sukkilam - Preejaculation of sperm

Inference:

Saaram, Seneer, Oon, Kozhuppu, Enbu, Moolai, Sukkilam are affected.

DETAILED PATHOLOGICAL VIEW OF DISSERTATION TOPIC

“தூணான தொனி பேதங் தொண்டைக்கம்மல்

சரங்கமரஞ் சுரமோடு சுவரசஞ் சத்தி

கரணான இருமல் சரீரங் கடுப்புக்

கடுங்கோழை வெகு பலவீனமுமு யாகும்

ஆணான அக்கினி மந் தத்தினோடு அரோசிகமரஞ்

சரீரமது வெளுப்புண்டாகும்

வரணான கல்கையும் வற்ற வாகும்

வரத சேட்ம ஷயத்தின் வரற தாமே”

➤ யூகி வைத்திய சிந்தாமணி பாடல் எண் : 681

The stanza reveals the pathogenesis of the disease explained as follows.

“தூணான தொனிபேதங் தொண்டைக்கம்மல்”

This line denotes that the patient suffers from hoarseness of voice because of sore throat.

Hoarseness:

Hoarseness is the name for the breathy, coarse, or harsh sounding speech produced from a variety of causes.

Causes a hoarse voice:

Any illness or process that directly or indirectly affects the Vocal cords in the Larynx (Voice box), that does not allow the vocal cords to close completely, will result in a hoarse voice.

The vocal cords can be affected directly by colds and croup or may be affected indirectly by non-infections processes, environmental or traumatic causes, and congenital and genetic syndromes.

Hoarseness also may be caused by any process that affects the nerve that moves the vocal cords (the recurrent laryngeal nerve). This results in Vocal cord paralysis.

More common infectious causes of hoarseness:

Viral and bacterial infections can directly affect the throat and vocal cords, resulting in hoarseness. These illnesses are known as laryngitis, laryngotracheitis (croup), and laryngotracheobronchitis (bronchiolitis)

Sinusitis:

Sinusitis or any infection involving a runy/stuffy nose resulting in drainage of the secretions into the throat (post-nasal drip) may also affect the vocal cords, resulting in hoarseness.

Non – infections processes can result in hoarseness:

Allergies are a common non-infectious processes that can result in hoarseness. The secretions produced in common allergies can drip into the throat (post – nasal drip) irritating the throat and vocal cords. Allergies can also cause swelling of the vocal cords resulting in hoarseness.

Excessive use or misuse of the voice leading to formation of Vocal cord Nodules is another relatively common cause of hoarseness.

Gastroesophageal reflux disease (GERD) or reflux of stomach acid into the back of the throat will also cause hoarseness and may be more common than previously thought. Because reflux can be silent in many children, examination of the vocal cords and testing for reflux may be necessary to establish this cause of hoarseness.

Other non-infectious processes are much unusual causes of hoarseness. These can include vocal cord polyps, endocrine (glandular problems) and tumors of the larynx among others.

More common traumatic causes of hoarseness:

Traumatic causes of hoarseness refer to damage of the neck or vocal cords through trauma. Some examples include caustic ingestions (acid, poisons), intubation (breathing tube placement), feeding tube placement, birth trauma, or other trauma (Car or bike accidents).

Congenital and genetic causes of hoarseness:

An infant may be born with a deformity of the larynx (voice box), or a nerve problem causing hoarseness. In many cases, there may be Stridor or noisy breathing as well. These causes of hoarseness can include vocal cord paralysis, laryngomalacia, cysts, webs (a membrane blocking the opening) or clefts in the voice box. Some genetic (inherited) syndromes also involve deformities causing hoarseness.

Indirect causes of hoarseness:

Recurrent laryngeal nerve that moves the vocal cords may result in hoarseness. This may include many rare diseases involving the brain or nerves in the body. Surgery in the chest and around the heart and large blood vessels may also result in damage to the nerve.

As hoarseness from a variety of causes, the best person to evaluate hoarseness is an ear, nose and throat specialist.

“சரங்கமரங் கரமேரடு சுவரசஞ் சத்தி”

This line denotes that the patient suffers from fever, wheezing, vomiting.

Fever:

A fever is defined as a temperature 1⁰ or more above the normal 98.6 degrees Fahrenheit (F) or 37 degrees Celsius (C).

Signs and symptoms of a Fever:

There are different symptoms of a fever. The symptoms of a fever depends on what is causing it. Sometimes a fever can cause a chill. A chill occurs because when the brain raises the body's "thermostat," the body responds by shivering to raise the temperature. Shivering produces heat in the body. Once the temperature goes up, the person often feels warm. When the fever goes away, the person may start to sweat.

Causes:

Fever can be caused by many conditions. Some conditions that cause them are: infection such as strep throat, pneumononia, flu and chickenbox, tissue injuries, silicosis, tumors or cancer diseases that cause inflammation, rheumatoid arthritis, medications, and being in a hot environment for too long.

Types:**Remittent Fever:**

- Daily elevated temperature (>38 C or 100.4F)
- Returns to baseline but not to normal

Intermittent Fever (Periodic Fever):

- Intermittently elevated temperature (>38 C, 100.4F)
- Return to baseline and to normal

Examples:

- PFAPA Syndrome: Fever every 3-4 weeks.
- Most common cause in children age < 5 years.
- Relapsing Fever (*Borrelia* species): Every 2-3 weeks.

- Malaria: Fever every other or every third day.
- Rat Bite Fever: Fever every 3 to 5 days.
- Hodgkin's Disease: Pel-Ebstein Fever.
- Cyclic Neutropenia: Fever every 3 weeks.
- Associated with Mucosal Ulcer.

Hectic Fever:

- Daily elevated temperature (>38 C or 100.4F)
- Either remittent or intermittent pattern
- Temperature excursion > 1.4 C (2.5 F)

Examples:

- Intermittent bacteremia (dental abscess, UTI)
- Epstein – Barr Virus
- Familial Mediterranean Fever
- Crohn's Disease
- Still's Disease (Juvenile Rheumatoid Arthritis)

Sustained or Continuous Fever:

- Daily elevated temperature (>38 C or 100.4 F)
- Fluctuation of elevated temperature < 0.3 C (0.5 F)
- Associated conditions
- Drug Fever
- Salmonella

Pulse – Temperature Dissociation:

- Pulse slower than normal fever degree
- Associated conditions
- Typhoid Fever
- Rickettsial infection

Classifications:

- Fever without Focus
- Age < 24 months
- Fever without localizing signs
- Acute onset of fever persisting < 1 week
- Assess for Occult Bacteremia
- Fever of unknown Origin (FUO)
- Fever exceeding 1 week duration
- Fever documented in the hospital
- All possible investigations performed during the week

Special Circumstances:

- Fever in adults over age 65 years
- Fever temperature rise of 1.1 C (2 F) over baseline
- High fever suggesting severe infection : 38.3 C (101F)

Technique: Axillary temperature

- Age < 5 weeks old
- Rectal = Axillary Temperature + 0.2/ week of age (C)
- Age > 1 month old
- Rectal = Axillary Temperature + 1 (Celsius)
- Axillary temperature accurate by recent study (n=20)

Wheezing:

Wheezing is a high-pitched whistling sound produced by air flowing through narrowed breathing tubes, especially the smaller ones deep in the lung. It is a common finding in asthma and chronic obstructive pulmonary diseases (COPD).

Considerations:

The clinical important of wheezing is that it is an indicator of airway narrowing, and it may indicate difficulty breathing.

Common Causes:

Asthma, **Bronchiectasis**, Bronchiolitis, Bronchitis, Pneumonia, Emphysema, Insect sting which causes an allergic reaction , Inhalation of foreign matter into the lungs.

Characteristics:

Wheezes occupy different portions of the respiratory cycle depending on the site of airway obstruction and its nature. The proportion of the respiratory cycle occupied by the wheeze (Wheezerate) roughly corresponds to the degree of airway obstruction. Bronchiolar disease usually causes wheezing that occurs in the expiratory phase of respiration. The presence of expiratory phase wheezing signifies that the patient's peak expiratory flow rate is less than 50% of normal. Wheezing heard in the inspiratory phase on the other hand is often a sign of a stiff stenosis, usually caused by tumors, foreign bodies or scarring. This is especially true if the wheeze is monotonal, occurs throughout the inspiratory phase (ie. Is "holoinspiratory"), and is heard more distally, in the trachea. Inspiratory wheezing also occurs in hypersensitivity pneumonitis. Wheezes heard at the end of both expiratory and inspiratory phases usually signify the periodic opening of deflated alveoli, as occurs in some diseases that lead to collapse of parts of the lungs.

The location of the wheeze can also be an important clue to the diagnosis. Diffuse processes that affect most parts of the lungs are more likely to produce wheezing that may be heard throughout the chest via a stethoscope. Localized processes, such as the occlusion, of a portion of the respiratory tree, are more likely to

produce wheezing at that location, whence the sound will be loudest and radiate outwardly. The pitch of a wheeze does not reliably predict the degree of narrowing in the affected airway.

Vomitting:

Vomitting also called throwing up or emesis is the forceful expulsion of the contents of one's stomach through the mouth and sometimes the nose. Vomiting may result from many causes, ranging from gastritis or poisoning to brain tumors, or elevated intracranial pressure (ICP). The feeling that one is about to vomit is called nausea.

Vomiting center:

Vomiting is coordinated in the vomiting center in the lateral medullary reticular formation in the pons. Receptors on the floor of the fourth ventricle of the brain represent a chemoreceptor trigger zone, stimulation of which can lead to vomiting. The chemoreceptor zone lies outside the blood brain barrier, and can therefore be stimulated by blood – borne drugs that can stimulate vomiting, or inhibit it.

Vomiting act:

The vomiting act encompasses three types of outputs initiated by the chemoreceptor trigger zone: Motor, parasympathetic nervous system (PNS), and sympathetic nervous system (SNS).

Definitions:

Retching:

Spasms of respiratory muscle activity before emesis.

Pathophysiology:

Nausea usually precedes vomiting

Physiologic control of vomiting

- Lateral reticular formation in medulla
- Chemical stimulation via chemoreceptor trigger zone.

Vomiting is of involuntary mechanism:

- Golttis closes
- Diaphragm contracted and fixed pylorus closes
- Gastric wall and esophageal orifice relaxes
- Abdominal muscles contract forcefully

Associated physiologic events:

- Ptyalism (Excessive Salivation)
- Trachycardia (occurs with nauses)
- Bradycardia (occurs with retching)
- Defecation (may accompany vomiting)

“கரணன இருமல் சரீரங் கடுப்பு”

This lines denotes that the patient suffers from chronic cough with malaise.

Chronic cough:

Cough for more than three weeks, it is considered a chronic cough. “Chronic” means it lasts for a long time.

Chronic cough can interfere with your daily activities and make sleeping and eating difficult. A chronic cough could be a sign of a serious lung disease.

Smoker’s coughs:

Coughing up streaks of blood or more phlegm (mucus). Any of these may be a sign that something is wrong. A nagging “smokers cough” should not be ignored. A chronic cough in a smoker or former smoker may be a sign of COPS chronic obstructive pulmonary disease, including emphysema and chronic bronchitis.

Malaise:

Malaise is a feeling of general discomfort or uneasiness, an “out of sorts” feeling, often the first indication of an infection or other disease. Malaise is often in medicinal research as a “general feeling of being unwell”

“கடுங்கோழை வெகு பலவீனமுமே யாகும்”

This lines denotes that the patient is coughed out excessive amount of sputum and get a feeling of being extremely tired.

Estimate daily volume of Sputum:**Small amounts:**

- Lung Abscess
- Pneumonia
- Tuberculosis

Copious amounts (>200 cc/day)

- **Bronchiectasis**
- Bronchopleural Fistula

Sputum Color:

- Bloody Sputum (hemoptysis)
- Rusty Sputum (Prune-juice)
- Pneumococcal Pneumonia
- Colour alone does not distinguish bacterial infection.

Sputum Turbidity:

- Frothy Sputum (air bubbles, Hemoglobin)
- Pulmonary edema
- Foamy, clear material
- Saliva
- Nasal secretions

Sputum Viscosity:

- Bloody gelatinous Sputum (Currant – Jelly)
- Klebsiella Pneumonia
- Pneumococcal Pneumonia
- Stringy Mucoïd Sputum (may also appear frothy)
- Follows Asthma exacerbation
- Cloudy, mucoïd Sputum
- Chronic Bronchitis
- Three layered appearance (stagnant, Purulent Sputum)

Sputum with Feculent Odor:

- Anaerobic infection
- Bronchiectasis

Fatigue (medical):

Fatigue (also called exhaustion, lethargy, languidness, languor, lassitude, and listlessness) is a state of awareness.

Types:**Muscle weakness:**

Physical fatigue or muscle weakness (or “lack of strength”) is a direct for the inability to exert force with one’s muscles to the degree that would be expected given the individual’s general physical fitness.

Somnolence:

Somnolence decreased wakefulness or just as a general decrease of attention, not necessarily including sleepiness. It may also be described as more or less decreased level of conscioness.

Causes:

Working mental stress, overstimulation and understimulation, active recreation, depression, and also boredom, disease and lack of sleep. It may also have chemical causes, such as poisoning or mineral or vitamin deficiencies. Massive blood loss frequently results in fatigue.

The sense of fatigue is believed to originate in the reticular activating system of the lower brain. Musculoskeletal structures may have co – evolved with appropriate brain structures so that the complete unit functions together in a constructive and adaptive fashion. The entire systems of muscles, joints, and proprioceptive and kinesthetic functions plus parts of the brain evolve and function together in a unitary way.

Diseases and conditions:

Temporary fatigue is likely to be a minor illness like the common cold as one part of the sickness behavior response that happens when the immune system fights an infection. Chronic fatigue, on the other hand, meaning of six months or more duration, is a symptom of a large number of different diseases or conditions. Some major categories of diseases that feature fatigue include.

- Blood disorders such as anemia and hemochromatosis
- Chronic fatigue syndrome (CFS)
- Eating disorders, which can produce fatigue due to inadequate nutrition.
- Fibromyalgia
- Infectious diseases such as infectious mononucleosis and influenza
- Physical trauma and other pain – causing conditions, such as arthritis.

“ஆனான அக்கினிமந்தத்தினோடு அரோசிகமளஞ்”

This line denotes that the disease will cause the patient to suffer from imperfect digestion and loss of appetite.

Indigestion:

Indigestion is a vague feeling of abdominal discomfort – possibly including belching, heartburn, a feeling of fullness, bloating, and nausea.

Considerations:

Indigestion is usually not a serious health problem, unless other symptoms also occur such as weight loss or trouble swallowing.

Indigestion is a common problem. It may be triggered by eating particular foods, or drinking alcoholic or carbonated drinks. It may also be caused by eating too fast or by overeating. Some people may find that spicy foods, high – fiber foods, fatty foods, or too much caffeine can all make this problem worse. Symptoms may be worsened by anxiety and depression.

Causes:

- Junk food.
- Alcohol.
- Caffeinated beverages.
- Smoking.
- Irregular dieting.
- Stress, anxiety.
- Medicines like aspirin and anti-inflammatory medicines.
- pregnancy.
- peptic ulcer.

Anorexia:

It is a morbid loss of desire to eat. Unlike satiety, which occurs only on taking food, anorexia may be present even when the person is hungry. Anorexia may accompany gastrointestinal and liver diseases. Infections like tuberculosis (or) psychological disturbances like depression.

“சரீரமது வெளுப்புண்டாகும்”

This line denotes that the patient have Anaemia.

Anaemia:

Abnormally low amount of red blood cells. When red blood cells and therefore haemoglobin are low the blood fails to supply the body's tissues with sufficient amounts of oxygen. As your lungs heart will then have to work harder to get oxygen into the blood, symptoms of anaemia, such as difficulty in breathing will begin to develop.

Anaemia mainly affects women during pregnancy or women who suffer with heavy periods.

Causes:

- Heavy periods
- Diet low in iron.
- Internal bleeding, for example if you have ulcer or a tumour.
- Diet low in vitamin B12 or folic acid.
- Blood diseases such as leukaemia.
- Infections, such as malaria.

Iron deficiency anaemia:

The most common type of anaemia is iron deficiency anaemia, which basically means the body is running low on iron. The body iron to successfully produce haemoglobin the substance that carries oxygen throughout the body.

Symptoms:

The main symptom is usually chronic tiredness and palpitations. Other symptoms you may get could include.

- Pale appearance
- Shortness of breath and dizziness
- Angina

“வாணான கால் கையும் வற்றலாகும்”

This line denotes that the patient have loss of weight.

Weight loss:

This is not a phenomenon specific to gastrointestinal diseases but in many alimentary disorders considerable weight loss occurs. Diminution of food intake, and absorption, loss of nutrients, accelerated metabolism and parasitism may contribute to the weight loss.

ANATOMY

Anatomy of the lungs:

The lungs are the essential organs of respiration. They have respiratory and non – respiratory functions:

Two lungs are situated within the thorax.

Parts of the Lung:

- Apex
- Base
- Body of the lung

Each Lung has 3 borders:

- Anterior border
- Posterior border
- Inferior border

Each lung has 2 surfaces:

- Costal surface
- Mediastinal surface

Apex:

- It is the pointed upper part of the lung.
- It passes above the clavicle and reaches the root of the neck.

Base:

Concave in shape

It is related to

- Diaphragm
- Right lobe of liver on the right side.

Left side is related to:

- Diaphragm
- Fundus of the stomach
- Spleen
- Left lobe of liver

The Anterior border:

- This border separates the costal and mediastinal surfaces.
- It is thin and sharp.

The posterior border:

- It is thick and rounded.
- It separates the costal and mediastinal surfaces.

The Inferior Border:

- It is sharp Laterally and rounded medially.
- The Inferior border separates costal surface from the base and mediastinal surface.

Costal surface:

- It is convex and related to ribs, intercostal spaces and pleura.

Medial Surface:

This surface is divided into an anterior mediastinal surface and posterior vertebral part. The vertebral part is related to the bodies of thoracic vertebrae.

Organs related with mediastinal surface:

Right Lung:

Cardiac impression, Inferior vena cava, Superior vena cava, Right brachiocephalic vein, Azygos vein, Brachiocephalic artery, Trachea and Right vagus, Oesophagus.

Left Lung:

Cardiac impression, Pulmonary trunk, Arch of Aorta, Descending thoracic Aorta, Left brachiocephalic vein, Left subclavian artery, Thoracic duct, Oesophagus.

Fissures Of The Lung :

The Right lung shows two fissures and left lung has only one fissure.

The fissures of the right lung are

Oblique fissure, Transverse fissure.

But the left lung has only oblique fissure.

Lobes:

The right lung have 3 lobes namely upper, middle and lower lobes.

The left lung have only 2 lobes upper and lower lobes.

The lingual is a tongue shaped process of the left lung. It may be considered as the middle lobe of the left lung.

Root of The Lung :

Structures that connect the lung and the mediastinal forms root of the lung.

Vertebral level :

5th, 6th and 7th thoracic vertebrae.

The root is formed by the following structures.

Bronchus, Pulmonary artery, Pulmonary veins, Bronchial arteries, Pulmonary plexus of nerves, Lymph vessels of the lung (Broncho pulmonary nodes), Lymph nodes called hilar nodes, Connective tissue.

Bronchopulmonary Segments:

This is the anatomical unit of the lung supplied by the tertiary bronchus. The segments are independent by function, between the segments.

The right lung have 10 segments

The left lung has 8 segments:

The segments are pyramidal in shape. The segments of the right lung are the following.

TABLE - 12

Right lung:

| Upper Lobe | Middle Lobe | Lower Lobe |
|-------------------|--------------------|--|
| Apical | Medial | Superior |
| Anterior | | Anterior basal |
| Posterior | Lateral | Posterior basal Lateral basal Medial basal |

Left lung:

The segments of the left lung are upper lobe.

Upper lobe branches divides into upper and lower divisions.

TABLE - 13

| Upper division | Lingular lobe | Lower Lobe |
|-----------------------|----------------------|--|
| Apico posterior | Superior | Apical |
| Anterior | Inferior | Anterior basal Posterior basal Lateral basal |

Blood supply:

Bronchial arteries to supply the lung parenchyma and related bronchial system. The right lung has one bronchial artery and left lung has two bronchial arteries. Bronchial arteries enter the lung through the hilum. There are two groups of bronchial veins namely superficial and deep bronchial veins.

Lymphatic drainage :

Superficial plexus of Lymph vessels, Deep plexus of lymph vessels nerve supply.

Nerve Supply:

The anterior and posterior of pulmonary plexus of nerves contributed by the parasympathetic and sympathetic.

Para Sympathetic supply:

The vagus nerve gives parasympathetic fibres to the lung

This nerve supplies:

Bronchial smooth muscles, Bronchial mucous glands, Sensory fibres to carry stretch reflexes and for the cough reflex.

Sympathetic:

T₁-T₄ sympathetic ganglion. They reduce the spasm and secretory activity of the lung tissue.

Structure of the lung:

The lung is made up of lobes which are ultimately made into functional units called Lobules. The lobules are pyramidal shaped. The base of the lobule is directed peripherally and the apex is directed towards the root of the lung structurally the lung has the following features.

Bronchial tree, Respiratory alveoli, Blood vessels nerves and lymphatics.

The bronchus divides into lobar bronchi Each lobar bronchus divides into segmental bronchi. The segmental bronchi are further divided and becomes the terminal bronchiole. The terminal bronchiole leads to the respiratory bronchioles. The bronchi have hyaline cartilage in their wall. Whereas the bronchioles are elastic structures, no cartilage present within the bronchiole. The respiratory bronchioles

terminally form the alveolar ducts. The alveolar sacs of the lung parenchyma are attached to the alveolar ducts. Each duct leads to a chamber called atrium. Each atrium leads to large number of alveolar sacs. The walls of alveolar sacs are provided with alveoli. The bronchioles are lined by ciliated columnar (or) ciliated cuboidal epithelium.

There are non ciliated cells called clara cells. They have secretory function and they may secrete surfactant. The bronchiole may also have APUD cells called Kulchitsky cells lining it. The respiratory bronchiole is lined by cuboidal epithelium.

Bronchus → lobar bronchus → segmentation → bronchus → Terminal bronchus → Alveolar ducts → Atrium → Alveolar sac → Alveolus.

Alveoli :

They are closely packed lung Parenchymal tissue and inter alveolar septum separates adjacent alveoli. The alveoli lined by simple squamous epithelium. The inter alveolar septum has a central capillary plexus and epithelial lining on either side. These are smooth muscle fibers and elastic fibres are also found in the inter alveolar septum. There are openings called alveolar pores found in the inter alveolar septum. The inter alveolar septum has the following types of cells lining it.

Endothelial cells found within the capillaries, Squamous epithelium, Glandular pneumocytes – They are found deep to epithelial cells. They may project into the lumen of the alveoli.

There are macrophages found on the septum, of them siderophages (scavenger cells) are important. During congestive heart failure these siderophages engulf haemosiderin pigment obtained from the RBC. Hence these scavenger cells are called heart failure cells.

PHYSIOLOGY

PHYSIOLOGY OF THE RESPIRATORY SYSTEM :

INTRODUCTION :

The term “respiration” refers to the gaseous interchange between the organism and its environments. The more obvious features of this process are the absorption of O₂ and elimination of CO₂.

The study of respiratory physiology will include :

1. The respiratory organs - mechanism responsible for uptake of O₂ from the external environment and expulsion of the CO₂ from the lung to the external environment.
2. The Transport of O₂ from the lungs to the tissues and CO₂ to the lungs.
3. Exchange of respiratory gases between the cells and the internal environment.
4. The control of rhythmic breathing.

MECHANISM OF RESPIRATION:

This is the process by which the lungs expand to take in air then contract to expel it. The cycle of respiration, which occurs about 15 times per minute consists of three phases.

- Inspiration
- Expiration
- Pause

The expansion of the chest during inspiration occurs as result of muscular activity, partly voluntary and partly involuntary. The main muscle of respiration in normal quiet breathing are the intercostals muscles and the diaphragm. During difficult (or) deep breathing they are assisted by the muscles of the neck, shoulders and abdomen.

CYCLE OF RESPIRATION:

As described previously, the visceral pleura is adherent to the lungs and the parietal pleura to the inner wall of the thorax and to the diaphragm. There is a potential space between these 2 layers of serous membrane called the pleural cavity, containing a very thin layer of serous fluid. The two layers of pleura with serous fluid between them behave in the same way as two pieces of glass separated by a thin film of water. They can slide over each others easily but can only be pulled apart with great difficulty due to the surface tension between membrane and fluid.

When the capacity of the Thoracic cavity is increased by Thoracic cavity is increased by simultaneous contraction of the intercostals muscles and the diaphragm the parietal pleura moves with the walls of the thorax and diaphragm. This reduces the pressure in the pleural cavity to a level considerably lower than atmospheric pressure. The visceral pleura follows the parietal pleura. During this process the lungs are stretched and the pressure within the alveoli and in the air passages is reduced, drawing air into the lungs in an attempt to equalize the atmospheric and alveolar air pressures. This is inspiration and it is described as active because it is the result of muscle contraction.

In normal quiet breathing there are about 15 complex respiratory cycles per minute. The lungs and the air passages are never empty and as the exchange of gases takes place only across the walls of the alveolar ducts and alveoli the remaining capacity of the respiratory passages is called the “anatomical dead space” (about 150ml).

Tidal volume (about 150ml) is the amount of an which passes into and out of the lungs during each cycle of quiet breathing.

Inspiratory capacity is the amount of air that can be inspired with the maximum effect. It consists of the tidal volume (500ml) plus the inspiratory reserve volume.

Functional residual volume is the amount of air remaining in the air passages and alveoli at the end of quiet expiration. Tidal air mixes with this air, causing relatively small changes in the composition of alveolar air. As blood flows continuously through the pulmonary capillaries this means that the interchange of gases is not interrupted between breaths, preventing marked changes in the concentration of blood gases. The functional residual volume also prevents collapse of the alveoli on expiration.

Vital capacity is the tidal volume plus the inspiratory and expiratory reserve volume.

Alveolar ventilation is the amount of air which moves into and out the alveoli each minute.

Alveolar ventilation = respiratory rate (tidal volume - dead space volume)

$$= 15 (500-150)\text{ml}$$

$$= 5.25 \text{ litres per minute.}$$

Interchange of Gases:

The interchange of gases in the lungs occurs between the blood in the capillary network surrounding the alveoli and the air in the alveoli.

The atmospheric pressure at sea level is 1013.3 kilo pascals (kpa) (or) 760 millimeters of mercury (mm Hg). This pressure is exerted on the mixture of gases that make up air.

During respiration, the lungs and respiratory passages are never empty of air. The tidal ebb and flow of air results in inspired air being mixed with the air already in the lungs. When it reaches the alveoli the air is saturated with water vapour and because of the tidal movement the concentration of gases in the alveoli remains fairly constant.

The total pressure exerted on the walls of the alveoli by the mixture of gases is the same as atmospheric pressure 101.3 kpa(760mm Hg). Each gas in the mixture exerts a part of the total pressure proportional to its concentration, i.e, the partial pressure. The composition of inspired and expired air.

TABLE - 14

| | Inspired Air % | Expired air % |
|-------------------------|----------------|---------------|
| Oxygen | 21 | 16 |
| Carbon dioxide | 0.04 | 4 |
| Nitrogen and rare gases | 78 | 78 |
| Water vapour | Variable | Saturated |

1mm Hg = 133.3 Pa=0.1333kPa

1kPa = 7. mmHg

The partial pressure of nitrogen (PN₂) is the same in the alveoli as it is in the blood. This stable state is maintained because nitrogen as a gas is not used by the body but it can diffuse across the walls of the alveoli and the capillaries. The partial pressure of oxygen (PO₂) in the alveoli is higher than that in the deoxygenated blood in the capillaries of the pulmonary arteries. As gases diffuse from an area of higher to one of lower concentration, the movement of Oxygen is from the alveoli to the blood. The reverse is true of CO₂. The PCO₂ is higher in deoxygenated blood than in alveolar air, so carbon dioxide passes across the walls of the capillaries and the alveoli.

The partial pressure of each gas in the blood when leaving the lungs via the pulmonary various is the same as in the alveolar air. The slow movement of blood through the capillaries surrounding the alveoli allows time for the interchange of gases to take place and for the uptake of oxygen by the erythrocytes in the blood. Oxygen is transported round the body in solution in the blood water and in combination with haemoglobin in the erythrocytes.

CONTROL OF RESPIRATION:

Control of respiration is partly voluntary but mainly involuntary voluntary control is exerted during activities such as speaking and singing. This control, with its centre in the cerebral cortex, is overridden by chemical and nerve activity when the individual has “held his breath” for a very short time. Involuntary respiration, needed to maintain life, is controlled by nerve cells in the brain stem, the respiratory centre in the Medulla oblongata and Pneumotoxic centre in the pons varolii. The cells in the respiratory centre are concerned with inspiration and those in the pneumotaxic centre with the inhibition of inspiration which results in expiration. Nerve impulses which originate in the respiratory centre pass to the diaphragm in the phrenic nerves and to the intercostal muscles in the intercostal nerves, resulting in contraction of these muscles and inspiration.

There are nerve endings in the lungs sensitive to stretch which are stimulated when the lungs are inflated. The nerve impulses produced are passed to the pneumotaxic centre in the afferent fibres of the vagus nerves and expiration occurs. There are chemoreceptor in the walls of the aorta and carotid arteries. They are the aortic and carotid bodies, consisting of cells that are sensitive to changes in PCO_2 and PO_2 in the blood. The nerve impulses which originate in these cells are transmitted to the respiratory centre in the gloss - pharyngeal and the vagus nerves. The chemoreceptor and the respiratory centre are stimulated by an increase in the PCO_2 in the blood which results in increased ventilation of the lungs. A small reduction in the PO_2 has the same effect but a substantial reduction tends to have a depressing effect.

Normally, quiet breathing is sufficient to maintain balance between the blood PCO_2 and PO_2 while the individual is at rest or taking light exercises.

During strenuous exercise breathing becomes deeper and more rapid in response to the needs of the muscles for more oxygen and in order to excrete the excess carbon dioxide produced.

In normal quiet breathing the intercostal muscles and the diaphragm are the only muscles involved but in deep (or) forced breathing other muscles come into play.

They are the accessory muscles of respiration and the most important are the sternocleidomastoid . The contraction of these muscles in addition to the diaphragm and intercostal muscles ensures the maximum increase in the capacity of the thoracic cavity.

Internal (or) cell respiration

This is the name given to the interchange of gases which takes place between the blood and the cells of the body.

Oxygen is carried from the lungs to the tissues dissolved in plasma and in chemical combination with haemoglobin as oxyhaemoglobin. The exchange in the tissues takes place between the arterial and of the capillaries and the tissue fluid. The process involved is the same as that which occurs in the lungs that is diffusion from a higher concentration to a lower concentration. In this case the higher concentration of oxygen is in the blood and the lower concentration is in the tissue fluid. The cells therefore obtain their oxygen from the tissue fluid by diffusion.

Oxyhaemoglobin is an unstable compound which breaks up easily to liberate oxygen. As the cells of the body require a constant supply of oxygen, the process of diffusion of oxygen from the blood across the capillary wall to the tissue fluid and then into the cells is continuous. The rate at which this process is carried on is increased in

the presence of a high concentration of carbon dioxide, which occurs when cells in a particular area are more than usually active.

The higher PCO_2 assists the release of oxygen from oxyhaemoglobin. In this way cells receive a supply of oxygen consistent with their activity and the supply changes as the amount of activity changes.

Carbon dioxide is one of the waste products of carbohydrate and fat metabolism in the cells. The method of transfer of carbon dioxide from the cells into capillary blood is also by diffusion. Blood transports carbon dioxide by three different mechanisms.

Some is dissolved in the water of the blood plasma.

1. Some is transported in chemical combination with sodium in the form of sodium bicarbonate.
2. The remainder is transported in combination with haemoglobin.

LUNG DEFENCES :

Each day our lungs are directly exposed to more than 7000 particles as well as potential lethal bacteria and viruses. In general terms, physical mechanism including cough are particularly important in defense of the upper airways, whereas the lower airways are protected by complex mucociliary mechanisms, by the antimicrobial properties of surfactant and the lung lining fluids and by resident alveolar macrophages.

PATHOLOGY

BRONCHIECTASIS

Definition:

Bronchiectasis is a rare disease that affects people lung.

With bronchiectasis, peoples airways (bronchial tubes) are damaged.

Bronchiectasis is defined as abnormal and irreversible dilatation of the bronchi and bronchioles (greater than 2mm in diameter) developing secondary to inflammatory weakening of the bronchial walls. The most characteristic clinical manifestation of bronchiectasis is persistent cough with expectoration of copious amounts of foul – smelling, purulent sputum.

Post-infectious cases commonly develop in childhood and in early adult life.

Bronchiectasis can't be cured, but with the right treatment, most people with bronchiectasis can live relatively normal lives.

People with advanced cases of bronchiectasis can have more difficulty with day – to – day activities.

Bronchiectasis affects adults, children and infants.

Adults usually acquire bronchiectasis after an infection in the lungs for example, after pneumonia (or) tuberculosis. Infants and children with bronchiectasis are often born with a congenital problem that leads to bronchiectasis. The main congenital cause of bronchiectasis is cystic fibrosis.

ETIOLOGY

The origin of inflammatory destructive process of bronchial walls is nearly always a result of two basic mechanisms.

1. obstruction
2. infection

- Endobronchial obstruction by foreign body, neoplastic growth or enlarged lymph nodes causes resorption of air distal to the obstruction with consequent atelectasis and retention of secretions.
- Infection may be secondary to local obstruction and impaired systemic defence mechanism promoting bacterial growth, or infection may be a primary event i.e. bronchiectasis developing in suppurative necrotizing Pneumonia.
- These 2 mechanisms – endobronchial obstruction and infection, are seen in a number of clinical settings.

These are as under :

1. Hereditary and congenital factors:

Several hereditary and congenital factors may results secondarily in diffuse bronchiectasis. These include.

- Congenital bronchiectasis caused by development defect of the bronchial system.
- Cystic fibrosis, a generalized defect of exocrine gland secretions, results in obstruction, infection and bronchiectasis.
- Hereditary immune deficiency diseases are often associated with high incidence of bronchiectasis
- Immotile ilia syndrome that includes kartageners syndrome is characterized by ultrastructural changes in the microtubules causing immotility of cilia of he respiratory tract epithelium, sperms and other cells. Males in this syndrome are often infertile.
- Atopic bronchial asthma : Patients have often positive family history of allergic diseases and may rarely develop diffuse bronchiectasis.

2. Obstruction:

Post – obstructive bronchiectasis, unlike the congenital hereditary forms is of the localized variety, usually confined one part of the bronchial system. The cases of endobronchial obstruction include foreign bodies, endobronchial tumours, compression by enlarged hilar lymph nodes and post – inflammatory scarring (eg: in healed tuberculosis) all of which favour the development of post – obstructive bronchiectasis.

3. Secondary complication:

Necrotising pneumonias such as in staphylococcal suppurative, pneumonia and tuberculosis may develop bronchiectasis as a complication.

PATHOGENESIS

Bronchiectasis is an abnormal dilation of the proximal and medium - sized bronchi (>2mm in diameter) caused by weakening or destruction of the muscular and elastic components of the bronchial walls. Affected areas may show a variety of changes, including transmural inflammation, edema, scarring and ulceration, among other findings. Distal lung parenchyma may also be damaged secondary to persistent microbial infection and frequent post obstructive pneumonia. Bronchiectasis can be congenital or acquired but is most often the latter.

Congenital bronchiectasis usually affects infants and children and results from developmental arrest of the bronchial tree. The more commonly acquired forms occur in adults and older children and require an infectious insult, impairment of drainage, airway obstruction, and / or a defect in host defense. The tissue is also damaged in part by the host response of neutrophilic proteases, inflammatory cytokines, nitric oxide, and oxygen radicals. This results in damage to the muscular and elastic components of the bronchial wall. Additionally, peribronchial alveolar tissue may be damaged, resulting in diffuse peribronchial fibrosis.

The result is abnormal bronchial dilatation with bronchial wall destruction and transmural inflammation. The most important functional finding of altered airway anatomy is severely impaired clearance of secretions from the bronchial tree.

Impaired clearance of secretions causes colonization and infection with pathogenic organisms, contributing to the common purulent expectoration observed in patients with bronchiectasis. The result is further bronchial damage and a vicious cycle of bronchial damage, bronchial dilation, impaired clearance of secretions, recurrent infection, and more bronchial damage.

In 1950, Reid characterized bronchiectasis as cylindrical, cystic, or varicose in nature.

- Cylindrical bronchiectasis involves diffuse mucosal edema, with resultant bronchi that are dilated minimally but have straight, regular outlines that end squarely and abruptly.
- Cystic or saccular bronchiectasis has ulceration with bronchial neovascularization and a resultant ballooned appearance that may have air-fluid levels.
- Cystic and cylindrical bronchiectasis of the right lower lobe on a posterior anterior chest radiograph.
- Varicose bronchiectasis has a bulbous appearance with a dilated bronchus and interspersed sites of relative constriction and, potentially, obstructive scarring. The latter may subsequently result in postobstructive pneumonitis and additional parenchymal damage. (see media file 3).
- Varicose bronchiectasis with alternating areas of bronchial dilatation and constriction.

Pathologic Changes:

The disease characteristically affects distal bronchi and bronchioles beyond the segmental bronchi.

Macroscopically:

The lungs may be involved diffusely or segmentally. Bilateral involvement of lower lobes occurs most frequently. More vertical air passages of left lower lobe are more often involved than the right.

The pleura is usually fibrotic and thickened with adhesions to the chest wall. The dilated airways depending upon their gross or bronchographic appearance, have been sub classified into the following different types.

1. Cylindrical:

The most common type characterized by tube – like bronchial dilatation.

2. Fusiform:

Having spindle – shaped bronchial dilatation.

3. Saccular:

Having rounded sac like bronchial distension.

4. Varicose:

Having irregular bronchial enlargements.

Cut surface of the affected lobes, generally the lower zones, shows characteristic honey – combed appearance. The bronchi are extensively dilated nearly to the pleura, their walls are thickened and the lumina are filled with mucus or mucopus. The intervening lung Parenchyma is reduced and fibrotic.

Microscopically:

Fully developed cases. Show the following histologic features.

- The bronchial epithelium may be normal, ulcerated or may show squamous metaplasia.
- The bronchial wall shows infiltration by acute and chronic inflammatory cells and destruction of normal muscle and elastic tissue with replacement by fibrosis.
- The intervening lung parenchyma shows fibrosis, while the surrounding lung tissue shows changes of interstitial pneumonia.
- The pleura in the affected area is adherent and shows bands of fibrous tissue between the bronchus and the pleura.

CLINICAL FEATURES:

Hoarseness of voice (Raspy voice), Fever (intermittent), Wheezing Vomiting, Chronic cough with copious amounts of sputium, sometimes haemoptysis, Lassitude (or) fatigue. Anorexia, Indigestion, Anaemia, Weight loss.

Complications:

Development of clubbing of the fingers, Metastatic abscesses (often to the brain), Amyloidosis, Vasculitis, Cor Pulmonale and respiratory failure.

Investigations :

1. Blood Tests :

a. Neutrophil function :

- Neutropenia
- Superoxide Production

2. Sputum Culture

- Gram Stain
- Aerobic
- Anaerobic
- Selective medium

3. Radiology

➤ CT SCAN

Prevention:

1. Not smoking and avoiding second – hand smoke
2. Eating a balanced diet
3. Fighting germs by washing your hands properly.

EVALUATION OF DISSERTATION TOPIC

MATERIALS AND METHODS:

The clinical study on *Vadha Chaetma Kshayam* has been taken in the post graduate department of *Noi Naadal*.

The clinical study was done in 21 cases. The author had selected 21 cases to evaluate typical picture by siddha parameters along with modern parameters.

The detailed history of the present and past illness and family history were observed.

Evaluation of Clinical Parameters:

The detailed history and clinical features of the patients were taken carefully.

The clinical history

Detail history of present and past illness.

Personal and family history

Diet habits

Exposure to cold weather

Clinical features for *Vadha Chaetma Kshayam* are

Hoarseness of voice

Fever

Wheezing

Vomiting

Chronic cough with malaise

Copious amounts of sputum with fatigue.

Digestive disturbance

Anorexia

Anaemia

Weight loss

STUDY ON SIDDHA CLINICAL DIAGNOSIS:

Siddha diagnosis was also made by the following methods.

Poriyal arithal

Pulanal arithal

Vinathal

Mukkutra nilaigal

Udal thathukkal

Envagai thervugal (including Neerkuri, Neikuri)

Nilam

Kaalam.

Manikkadai Nool

THE CLINICAL INVESTIGATION:

For further detailed study about the disease the following Laboratory investigation was done in all cases.

Blood:

- Total count – WBC
- Differential count – WBC
- Haemoglobin
- Erythrocyte Sedimentation Rate
- Blood Sugar
- Blood Urea
- Serum Cholesterol

Urine:

- Albumin
- Sugar
- Deposit

Motion:

- Ova
- Cyst
- Occult blood

Other Test:

- Chest X – ray
- CT scan – Thorax.
- Pulmonary function test.

OBSERVATION AND RESULTS

TABLE - 15 AGE

| Sl.No. | Age | No of cases | Percentage |
|--------|---------------|-------------|------------|
| 1. | <33 years | 3 | 14 |
| 2. | 33 – 66 years | 13 | 62 |
| 3. | >66 years | 5 | 24 |

Out of 21 cases, 62% of cases belonged to middle age group

TABLE - 16 - SEX

| Sl.No. | Sex | No of cases | Percentage |
|--------|--------|-------------|------------|
| 1. | Male | 15 | 71 |
| 2. | Female | 6 | 29 |

Among 21 cases 71% were males and 29% were females.

TABLE -17 OCCUPATION

| Sl.No. | Type of occupation | No of cases | Percentage |
|--------|--------------------|-------------|------------|
| 1. | Manual Labour | 12 | 57 |
| 2. | Former | 4 | 19 |
| 3. | Home maker | 5 | 24 |

The incidence of the disease was found to be higher in labouring groups (57%).

TABLE - 18 SOCIOECONOMIC STATUS

| Sl.No. | Socioeconomic | No of cases | Percentage |
|--------|--------------------|-------------|------------|
| 1. | High class | - | - |
| 2. | Middle class | 4 | 19 |
| 3. | Below poverty line | 17 | 81 |

Out of 21, 81% of cases belonged to below poverty line and 19% of cases were middle class.

TABLE - 19 FAMILY HISTORY

| Sl.No. | Family History | No of cases | Percentage |
|---------------|-----------------------|--------------------|-------------------|
| 1. | Positive | 2 | 10 |
| 2. | Negative | 19 | 90 |

10% of cases had related family history and 90% of cases had no related family history.

TABLE – 20 PERSONAL HABITS

| Sl.No. | Habits | No of cases | Percentage |
|---------------|-----------------|--------------------|-------------------|
| 1. | Smoker | 15 | 71 |
| 2. | Betelnut Chawer | 2 | 10 |
| 3. | Tea | 4 | 19 |

Out of 21, 71% of cases were smoker.

TABLE – 21 DIET HABITS

| Sl.No. | Age | No of cases | Percentage |
|---------------|----------------|--------------------|-------------------|
| 1. | Vegetarian | 12 | 57 |
| 2. | Non vegetarian | 9 | 43 |

Out of 21, 57% of cases were vegetarian, 43% of cases were non vegetarian.

ETIOLOGICAL FACTORS

TABLE - 22 FOOD HABITS

| Sl.No. | Age | No of cases | Percentage |
|---------------|---------------------------------|--------------------|-------------------|
| 1. | Excessive intake of spicy foods | 7 | 33 |
| 2. | Mal – nourished diet | 3 | 14 |
| 3. | Frequent starvation | 11 | 53 |

Out of 21 cases, 80% of cases had improper diet habits.

TABLE - 23 ENVIRONMENTAL FACTORS

| Sl.No. | Environmental Factors | No of cases | Percentage |
|--------|-----------------------|-------------|------------|
| 1. | Air pollution of Home | 14 | 67 |
| 2. | Polluted water | 4 | 19 |
| 3. | Sitting near the fire | 3 | 15 |

100% of cases were affected by Environmental factors.

TABLE - 24 MENTAL AND SOCIAL FACTORS

| Sl.No. | Mental and social factors | No of cases | Percentage |
|--------|---------------------------|-------------|------------|
| 1. | Extremepoverty | 17 | 80 |
| 2. | Sleeplessness | 2 | 10 |
| 3. | Excessive hard work | 2 | 10 |

100% of cases were affected by mental and social factors.

TABLE - 25 SEASONAL VARIATION (PARUVA KAALAM)

| Sl.No. | Paruva kaalam | No of cases | Percentage |
|--------|-------------------|-------------|------------|
| 1. | Pinpani Kaalam | 10 | 48 |
| 2. | Elavenir Kaalam | 8 | 38 |
| 3. | Mudhuvenir Kaalam | 3 | 14 |

Out of 21 cases, 48% of cases reported during pinpani kaalam, 38% of cases reported during Elavenir kaalam and 14% of cases during Mudhuvenir kaalam.

TABLE - 26 THINAI (GEOLOGICAL DISTRI BUTTON)

| Sl.No. | Thinai | No of cases | Percentage |
|--------|----------|-------------|------------|
| 1. | Marutham | 19 | 90 |
| 2. | Neidhal | 2 | 10 |

90% of cases reported from Marutha nilam.

TABLE - 27 KAALAM (LIFE SPAN)

| Sl.No. | Kaalam | No of cases | Percentage |
|--------|--|-------------|------------|
| 1. | Kabha Kaalam <33yrs 4months | 4 | 19 |
| 2. | Pitha Kaalam 33yrs 5 ms – 66yrs 8ms | 12 | 58 |
| 3. | Vatha Kaalam >66yrs 8months | 5 | 24 |

Out of 21, 58% of cases were under pitha kaalam, 24% of cases were under vatha kaalam, 19% of cases under kabha kaalam.

TABLE - 28 SYMPTOMS

| Sl.No. | Clinical Features | No of cases | Percentage |
|--------|--------------------------|-------------|------------|
| 1. | Hoarseness of voice | 21 | 100 |
| 2. | Fever | 21 | 100 |
| 3. | Wheezing | 21 | 100 |
| 4. | Vomiting | 10 | 48 |
| 5. | Cough | 21 | 100 |
| 6. | Malaise | 21 | 100 |
| 7. | Copious amount of sputum | 21 | 100 |
| 8. | Fatigue | 21 | 100 |
| 9. | Anorexia | 21 | 100 |
| 10. | Anaemia | 21 | 100 |
| 11. | Weightloss | 21 | 100 |

The clinical features of Vadha chaetma kshayam were positive in 100% of cases.

TABLE - 29 SIGNS

| Sl.No. | Thinai | No of cases | Percentage |
|--------|-------------------------------|-------------|------------|
| 1. | Chest signs – bronchophony | 21 | 100 |
| 2. | Clubbing | 10 | 48 |

TABLE - 30 ALTERED CHARACTERS OF IYAM

| Sl.No. | Increased Iyam | No of cases | Percentage |
|---------------|-----------------------|--------------------|-------------------|
| 1. | Avelembagam | 21 | 100 |
| 2. | Kilethagam | 21 | 100 |
| 3. | Podhagam | 15 | 71 |
| 4. | Tharbagam | 10 | 48 |
| 5. | Santhigam | 21 | 100 |

Out of 21 cases, Avalambagam, kilethagam, Podhagam, Santhigam were affected 100% of cases, Podhagam was affected 71% of cases Tharpagam was affected 48% of cases.

TABLE - 31 ALTERED CHARACTERS OF VALI

| Sl.No. | Increased Iyam | No of cases | Percentage |
|---------------|-----------------------|--------------------|-------------------|
| 1. | Praanan | 21 | 100 |
| 2. | Abaanan | 12 | 57 |
| 3. | Viyaanan | 21 | 100 |
| 4. | Uthaaan | 21 | 100 |
| 5. | Samaanan | 21 | 100 |
| 6. | Naagan | 2 | 10 |
| 7. | Koorman | 9 | 43 |
| 8. | Kirukaran | 21 | 100 |
| 9. | Devadhathan | 21 | 100 |
| 10. | Thananjeyan | - | - |

Out of 21 cases, praanan, viyanan, uthanan, samaanan, kirukaran, Devadhathan were affected in 100% of cases, abaanan was affected in 57% of cases koorman was affected in 43%.

TABLE - 32 ALTERED CHARACTERS OF AZHAL

| Sl.No. | Decreased Azhal | No of cases | Percentage |
|---------------|------------------------|--------------------|-------------------|
| 1. | Anilam | 21 | 100 |
| 2. | Ranjagam | 21 | 100 |
| 3. | Saathagam | 21 | 100 |
| 4. | Aalosagam | - | |
| 5. | Prasagam | - | |

Out of 21 cases, Anilam, Ranjagam, Saathagam, were affected 100% of cases.

TABLE - 33 UDAL THADHUKKAL

| Sl.No. | Decreased Udalthadhukkal | No of cases Affected | Percentage |
|---------------|---------------------------------|-----------------------------|-------------------|
| 1. | Saaram | 21 | 100 |
| 2. | Senneer | 21 | 100 |
| 3. | Oon | 21 | 100 |
| 4. | Kozhuppu | 21 | 100 |
| 5. | Enbu | 17 | 81 |
| 6. | Moolai | 13 | 62 |
| 7. | Sukkilam Sronitham | 5 | 24 |

Out of 21 cases, saaram, senneer, Oon, kozhuppu, were affected 100% of cases enbu was affected in 81% of cases, Moolai was affected in 62% of cases, sukkilam / sronitham was affected in 24% of cases.

TABLE - 34 KOSAM

| Sl.No. | Kosam | No of cases Affected | Percentage |
|---------------|--------------------|-----------------------------|-------------------|
| 1. | Annamaya Kosam | 18 | 86 |
| 2. | Praanamaya Kosam | 21 | 100 |
| 3. | Manomaya Kosam | - | - |
| 4. | Vingnanamaya Kosam | - | - |
| 5. | Aanandhamaya Kosam | 5 | 24 |

In 100% of cases, praanamaya kosam was affected, Annamaya kosam was affected in 86% of cases.

TABLE - 35 MANIKKADAI NOOL

| Sl.No. | Viralkadai alavu | No of cases Affected | Percentage |
|---------------|-------------------------|-----------------------------|-------------------|
| 1. | 6 | 15 | 71 |
| 2. | 6 ¼ | 6 | 29 |

Out of 21 cases in 71% of cases, the manikkadai alavu was 6.

TABLE - 36 ENNVAGAI THERVUGAL

| Sl.No. | Ennvagai Thervu | No of cases Affected | Percentage |
|---------------|------------------------|-----------------------------|-------------------|
| 1. | Naa | 21 | 100 |
| 2. | Niram | 18 | 86 |
| 3. | Mozhi | 21 | 100 |
| 4. | Vizhi | 18 | 86 |
| 5. | Sparisam | 15 | 71 |
| 6. | Malam | 12 | 57 |
| 7. | Moothiram | 21 | 100 |
| 8. | Naadi | 21 | 100 |

Out of 21 cases, Naa, Mozhi, Moothiram, Naadi were affected in 100% of cases. Niram, Vizhi were affected in 86% of cases.

TABLE - 37 NEIKURI

| Sl.No. | Spreading of oil | No of cases Affected | Percentage |
|---------------|-------------------------|-----------------------------|-------------------|
| 1. | Pearl | 21 | 100 |

Out of 21 cases showed features of kabha neer.

TABLE - 42 X-RAY CHEST

| Sl.No. | Case No. | Op No. | Impression |
|---------------|-----------------|---------------|--|
| 1. | 5 | 65519 | Bronchiectasis (left lower lobe) |
| 2. | 11 | 65905 | Bronchiectasis (left lower lobe) |
| 3. | 13 | 68307 | Bronchiectalic changes with patchy consolidation |
| 4. | 12 | 68306 | Brochiectasis (Right side Middle lobe leading to consolidation |
| 5. | 21 | 68606 | Broachiectasis (Right side lower lobe) |

TABLE - 43 CT - THORAX

| Sl.No. | Case No. | Op No | Impression |
|---------------|-----------------|--------------|--|
| 1. | 5 | 65519 | Bronchiectasis (left lower lobe) |
| 2. | 17 | 68609 | Bronchiectasis (Medial segment of right middle lobe and left inferier lingual segments |
| 3. | 19 | 68602 | Bronchiectasis Right Upperlobe Apical segment. |

TABLE - 45 PULMONARY FUNCTION TEST

| Sl.No. | Case No. | Op No. | Impression |
|---------------|-----------------|---------------|-------------------------------|
| 1. | 5 | 65519 | Obstructive pulmonary disease |
| 2. | 12 | 68306 | Obstructive pulmonary disease |

DISCUSSION

The functional units of our body are the three vital forces, which are Vali Azhal and Iyam. Any disturbance in the Vital humour will affect the function of the organ. In chronic condition, it may lead to pathological changes in the affected organ.

“சேடம சீதமரய் துடைத்து”

INTERPRETATION OF CLINICAL PARAMETERS

AGE :

Out of 21, 62% of cases were middle aged people.

Sex :-

Males were affected commenly. Out of 21, 71% of cases were males.

OCCUPATION :

Out of 21, 57% of cases were related with labour group.

SOCIOECONOMIC STATUS :

Out of 21,17 cases were affected. 57% of cases were in below poverty line. Vadha Chaetam Kshayam was common in below poverty line.

FAMILY HISTORY :

Out of 21, 10% of cases had related family history.

PERSONAL HABITS :

Out of 21, 71% of cases were affected and who were heavily smoker.

DIET HABITS :

Out of 21, 57% cases were vegetarian.

ENVIRONMENTAL FACTORS :

Environmental factors were found to be major etiological factor.

Air Pollution of Home 67 % (14 cases)

SEANSONAL VARIATIONS

Vadha Chactma Kshayam was aggravated during Pinpanikaalam and Elavenir Kaalam due to derangement of Kabha humor.

THINAI :

Out of 21, 90% of cases were reported from Marutham.

KAALAM :-

Out of 21., 58% of cases were found in Pithakaalam .

INTERPRETATION OF CLINICAL FEATURES

SYMPTOMS OF VADHA CHAETAM KSHAYAM:

All the patients depicted the clinical features mentioned in the poem “**Vadha Chaetma Kshayam**” in the text book of Yugi Vaithiya Chinthamani.

SIGNS:-

Chest Signs – Bronchophony was present in 100 % of cases.

Clubbing was present in 48 % of cases.

INTERPRETATION OF SIDDHA PARAMETERS

CHANGES IN UYIRTHADHUKKAL:

IYAM :

Out of 21 cases, Avalambagam, kilethgam,santhigam 100% of cases were affected

Out of 21 cases, Pothagam 71% of cases were affected

Out of 21 cases, Tharpagam 48% of cases were affected

VALI :-

Out of 21 cases, Praanan, Abaanan , Uthaanan, Samaanan , Kirukaran, Devadhathan 100% of cases were affected

Out of 21 cases, Abaanan 57% of cases were affected

Out of 21 cases, Naagan 10% of cases were affected

Out of 21 cases, Koorman 43% of cases were affected.

Azhal :

Out of 21 cases, Anilam, Ranjagam, Saathagam 100% of cases were affected

INTERPRETATION IN UDAL THATHUKKAL :-

Out of 21 cases, Saaram, Senneer, Oon, Kozhuppu 100 % of cases were affected

Out of 21 cases, Enbu 81% of cases were affected

Out of 21 cases, Moolai 62% of cases were affected

Out of 21 cases, Sukkilaml Sronitham 21% of cases were affected

INTERPREATION OF ENVAGAI THERVUGAL :-

Out of 21 cases, Naadi, Naa, Mozhi , Moothiram 100 % of cases were affected.

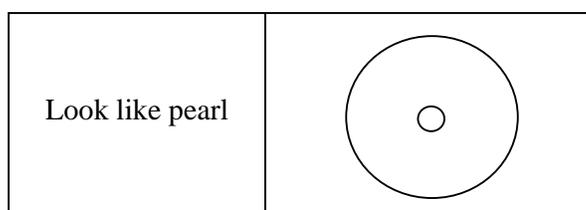
Out of 21 cases, Niram Vizhi 86% of cases were affected.

Out of 21 cases, Sparisam 71% of cases were affected.

Out of 21 cases, Malam 57% of cases were affected

Neikuri :-

Out of 21,21 patients Neikuri exhibited as the oil, its look like pearl (Muthothu nitral) (100%).



INTERPRETATION OF MODERN PARAMETES :-

Suspected cases were subjected to screening test of haematology.

Total count WBC – out of 21, 21 cases were having increased TC (100%)

Differential count for – out of 21, 21 cases WBL having increased.

ESR : out of 21,21 cases having raised ESR (100%)

HB : Out of 21, 18 cases having decreased HB (86%)

X-ray chest :-

Out of 21, 21 cases having bronchiectatic changes in the lung (100%).

CT-SCAN- THORAX

In some case, CT scan study of Thorax gave impression as bronchiectatic changes in different lobes of lungs. (left lower lobe, Medial segment of right middle lobe, left inferior lingual segments and right upper lobe apical segment).

Pulmonary function Test :-

In some case, Palmonary function study of lungs gava impression as chornic obstructive pulmonary disease (Brochiecatsis).

HIGH LIGHTS OF THE DISSERTATION TOPIC

Vadha Chaetma Kshayam comes under Kshaya Roga Nithanam in yugi vaithiya sinthamani which is characterized by hoarseness of voice fever, wheezing, vomiting, cough, malaise, **Copious amounts of sputum** fatigue Indigestion Anorexia, Anaemia, weight loss.

The Special Character of **Vadha Chaetma Kshayam** has **copious amounts of sputum** that is “கடுங்கோழை”. But in other songs of Kshaya Roga Nithanam. Yugi says, the patient have only sputum, sputum with blood, yellow colour sputum.

Copious amounts of sputum

- >200 cc/day
- Sputum with fuculent odour

Three Layered sputum (stagnant, purulent sputum)

- Upper layer contains froth
- Middle Layer Contains Liquid
- Lower Layer Contains Heavier particles

Eg: Epithelial debris, bacterial masses, foul smelling dettrich's plugs

Vadha Chaetma Kshayam is precisely diagnosed early with the help of sound knowledge of clinical features.

Vadha Chaetma Kshayam is correlate with clinical features of bronchiectasis.

NOI KANIPPU VIVADHAM

பித்தஷயம்

"என்றதோர் விலகக்கழுத்து மிகச்ச ருங்கி

இசைக்குமே இருமலொடு கோழை யுண்டாம்

குன்றதோர் குளுமையுண்டா யிரத்த வாந்தி

கொடிதான மூர்ச்சைகுரல் கம்ம லாகும்

தின்றதோர் தீபனந்தான் செரிகெ டாது

தேகமெங்கும் வெளுத்துமே மஞ்ச ளாகும்

மென்றதோர் மூத்திரமூ மஞ்சள் காணும்

யீறுபித்த ஷயமென்றே மொழிய லாமே"

➤ Yugi Vaithiya Chintamani

In pitha shayam, even though intercostal muscle and neck muscle wasting and emaciation, added sounds, cough with expectoration, chills, haemoptysis, dyspnoea, hoarseness of voice, indigestion, yellowish white body colour associated with yellowish urine are present, but the special symptoms of Vadha Chaetma Kshayam such as copious amount of sputum, fever, fatigue are not present.

பித்த காசம்

"சீரான இருமல்மிகப் புரட்ட லாகித்

தித்தித்து உப்பரைக்குஞ் சர்த்தி யுண்டாம்

தாராகத் தலையுடம்பு தான்வ லிக்கும்

தாகித்துக் குரல்கம் மும்ரத்தம் வீழும்

ஆராக வங்கத்தான் மிகலி னைக்கும்

அன்னந்தான் செல்லாமற் புளித்தேக் காகும்

மாராமயிர் கூச்சச் சுரமுண்டாம்

மதியயங்கும் பித்தகா சத்தின் வண்மை

Yogi Vaithiya Sinthamani

In pitha Kasam, eventhough persistent cough, sensation of sweet and salt taste in the tongue, vomiting, headache, body pain, burning sore throat, haemoptysis, dyspnea, anorexia with sour taste regurgitation, horripillation, fever and state of confusion, but the special symptoms of Vadha Chaetma Kshayam such as copious amount of sputum, weight loss are not present.

சுவாசகாசம்

“வண்மையாய்க் கோழைகட்டி இருமி வீழும்

மாநாகம் போலவே வாக்குஞ் சுவாசம்

திண்மையாய்ச் செருமலுண்டா மடிக்க டிக்குச்

சிரணயில்லா மலே வயிறு ஊதும்

நண்மையாய் நாகியது தணல்போ லாகும்

நளுந்துடம்பு வற்றிவருங் குரலுங் கம்மும்

உண்மையா யுண்ணாக்கி லூறுங் கேணி

உழற்றுமே சுவாசகா சத்தி னொப்பே”

Yogi Vaithiya Sinthamani

In suvasa kaasam, even though cough with expectoration, added sounds, indigestion with abdominal distension, burning sensation in the nose, weight loss, sore throat, associated with excessive salivation are present, but the special symptoms of Vadha Chaetma Kshayam such as copious amount of sputum, fever, fatigue are not present.

| Vivathathirkuria Noigal | Present Symptoms | Absent Symptoms |
|--------------------------------|--|--|
| Pitha Kshayam | Intercostals and neck muscle wasting and emaciation, added sounds, cough with expectoration, chills, haemoptysis, dyspnoea, hoarseness of voice, indigestion, yellowish white body colour associated with yellowish urine | Copious amounts of sputum fever,. |
| Pitha Kasam | Persistent cough, sensation of sweet and salt taste in the tongue, vomiting, headache, body pain, burning sore throat, haemoptysis, dyspnoea, anorexia with sour taste regurgitation, horripillation, fever and state of confusion | Copious amounts of sputum, weight loss |
| Suvasa Kasam | Cough with expectoration, added sounds, indigestion with abdominal distension, burning sensation in the nose, weight loss, sore throat, associated with excessive salivation | Copious amounts of sputum, fever are |

CONCLUSION

Identification of disease and its pathogenesis are pre requisite for medical practice. A detailed history Taking, clinical examinations as per siddha guidelines is necessary to arrive at precise diagnosis The study on **Vadha Chaetma Kshayam** was carried out in the dissertation, giving importance to the characteristics of the disease like hoarseness of voice, fever, wheezing, vomiting, chronic cough with malaise, fatigue, indigestion anorexia, weight loss.

Diagnosis can be carried out by detailed history taking, classical, clinical examination of siddha system, via Envagathervugal including Naadi and Neerkuri, and changes in seven physical constituents and three humours whether this disease is curable or not is also be carried out by the examination of siddha system, via Neikuri and Manikkadai nool.

This study on **Vadha Chaetma Kshayam** may be correlates with bronchiectasis, which has given relevance to modern clinical entity.

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TABLE - 38
INTERPRETATION OF UYIR THAADHUKKAL

| Case No | OP.NO | AGE | SEX | VALI | | | | | | | | | | AZHAL | | | | | IYAM | | | | |
|---------|-------|-----|-----|------|----|----|----|----|----|----|----|----|----|-------|----|----|----|----|------|----|----|----|----|
| | | | | Pr | Ab | Vi | Ud | Sn | Na | Ko | Kr | De | Tj | Pa | Ra | St | Aa | Ps | Av | Ki | Po | Th | Sd |
| 1 | 38429 | 73 | M | A | A | A | A | A | NA | A | A | A | - | A | A | A | NA | NA | A | A | A | A | A |
| 2 | 38642 | 83 | M | A | A | A | A | A | A | A | A | A | - | A | A | A | NA | NA | A | A | A | A | A |
| 3 | 44546 | 55 | M | A | A | A | A | A | NA | NA | A | A | - | A | A | A | NA | NA | A | A | A | A | A |
| 4 | 53015 | 80 | M | A | A | A | A | A | A | A | A | A | - | A | A | A | NA | NA | A | A | A | A | A |
| 5 | 65519 | 65 | M | A | A | A | A | A | NA | A | A | A | - | A | A | A | NA | NA | A | A | A | A | A |
| 6 | 65891 | 68 | M | A | A | A | A | A | NA | A | A | A | - | A | A | A | NA | NA | A | A | A | A | A |
| 7 | 65894 | 22 | F | A | NA | A | A | A | NA | NA | A | A | - | A | A | A | NA | NA | A | A | NA | NA | A |
| 8 | 65897 | 68 | M | A | A | A | A | A | NA | A | A | A | - | A | A | A | NA | NA | A | A | A | A | A |
| 9 | 65899 | 45 | M | A | NA | A | A | A | NA | NA | A | A | - | A | A | A | NA | NA | A | A | NA | NA | A |
| 10 | 65903 | 24 | F | A | NA | A | A | A | NA | NA | A | A | - | A | A | A | NA | NA | A | A | NA | NA | A |
| 11 | 65905 | 60 | M | A | A | A | A | A | NA | A | A | A | - | A | A | A | NA | NA | A | A | NA | A | A |
| 12 | 68306 | 63 | F | A | A | A | A | A | NA | A | A | A | - | A | A | A | NA | NA | A | A | A | A | A |
| 13 | 68307 | 44 | M | A | NA | A | A | A | NA | NA | A | A | - | A | A | A | NA | NA | A | A | A | NA | A |
| 14 | 68308 | 33 | F | A | NA | A | A | A | NA | NA | A | A | - | A | A | A | NA | NA | A | A | NA | NA | A |
| 15 | 68309 | 47 | M | A | NA | A | A | A | NA | NA | A | A | - | A | A | A | NA | NA | A | A | A | NA | A |
| 16 | 68310 | 48 | F | A | A | A | A | A | NA | NA | A | A | - | A | A | A | NA | NA | A | A | A | NA | A |
| 17 | 68600 | 51 | M | A | A | A | A | A | NA | NA | A | A | - | A | A | A | NA | NA | A | A | A | NA | A |
| 18 | 68602 | 40 | M | A | NA | A | A | A | NA | NA | A | A | - | A | A | A | NA | NA | A | A | A | NA | A |
| 19 | 68604 | 26 | F | A | NA | A | A | A | NA | NA | A | A | - | A | A | A | NA | NA | A | A | A | NA | A |
| 20 | 68606 | 62 | M | A | A | A | A | A | NA | A | A | A | - | A | A | A | NA | NA | A | A | A | A | A |
| 21 | 68609 | 45 | M | A | NA | A | A | A | NA | NA | A | A | - | A | A | A | NA | NA | A | A | A | NA | A |

Ab-Abaanan
Ud- Udaanan
Vi - Viyaanan
Sn - Samaanan

Ko - Koorman
Kr - Kirukaran
De - Devadhathan
Tj - Thananjeyan

Ra-Ranjagam
St - Sathagam
Aa - Aalosagam
Ps - Prasagam

KI - Kiletbaam
Po - Pothagam
Th - Tharpagam
Sd - Sandhigam

A - Affected NA - Not Affected

TIRUNELVELI MEDICAL COLLEGE HOSPITAL

DEPARTMENT OF THORAX

Pulmonary Function Test

OP. No. : 202042
Name : **THADIVEERAN**
Age / Sex : **65m**
Date : 16.12.2009

PFT :

| Indica | Value | Pred. | % Pred | Best |
|-----------------------|--------------|--------------|---------------|-------------|
| FEV ₁ | 0.64 | 2.88 | 22 | 0.64 |
| FVC | 1.23 | 3.71 | 33 | 1.23 |
| PEF | 44 | 463 | 9 | 44 |
| FEV ₁ /FVC | 52 | 75 | 69 | 52 |

Interpretation : Poor effort

Poor effort
H. H.
10/12/09