

**A STUDY ON
THALASTHAMBAM**

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HIGHLIGHTS OF THE DISSERTATION TOPIC

Thalasthambam comes under Vatha roga nithanam in Yugi Vaithya Sinthamani 800.

For any type of disease the vali humour is first affected. Followed by alteration in other humour.

In thalasthambam, yugi explains that the altered vali humour is aggravated by the excessive intake of salt and sour (i.e) these tastes acts as a pre-disposing factor for the disease.

The disease is characterized by the presence of heaviness of the foot, pain in the foot, blackening of the foot, spreading upwards from foot, weight loss, Dyspnoea, fatigue, dryness of the body, thirst.

In this disease, the Udal thathukkal Saram, Senneer, Oon, Kozhuppu, Enbu, Moolai are affected as 6 out of 7 udal thathukkal gets deranged the disease is not – curable.

The underlying pathogenesis for the Thalasthambam is the peripheral atererial occlusive disorder resulting in gangrene formation due to pan-arthritis leading to thrombosis as seen in “Thrombo Angitis obliterans”.

REVIEW OF LITERATURE

In Segarasasekaram Vaithyam, the following poem is mentioned.

In Sarabanthirar vaithya maraigal and Thanvanthiri Vaithyam. The thalasthambam is explained with the same poem mentioned by Yugi in Yugi Vaithya Sinthamani.

INTRODUCTION

Siddha System is the science of right living and as such is intended to be incorporated in daily life. It works on all aspects of the persons life. The physical, vital, mental, emotional, pshysic and spiritual.

Siddha Medicines not only cures the diseases but inaddition it aims at bringing the different bodily functions into perfect co-ordination. So, that they work for the good of the whole body.

Siddhars, the founder of Siddha System has given the techniques to purify the body, mind and energy to prepare the ground for higher practices of meditation and for the ultimate experience of cosmic consciousness.

To attain all they need is a healthy body. So, they begin to praise the body.

உடற்சிறப்பு

”தேகமிருந்ததல்லோ சித்தெல்லாமடலாம்

தேகமிருந்தாக்காற் சேரலாம் பூரணம்

தேகமிருந்தாக்காற் செயலெல்லாம் பார்க்கலாம்

தேகமிருந்தாக்கால் சேரலாமுத்தியே.”

- திருமூலர் வைத்தியம் கருக்கடை - 600,

பாடல் எண் - 545

Siddha System of Medicines were not primarily for the sick but for the healthy also.

Kaayakarpam and Astanga yogam are needed for a healthy mind and body. It activates and regulates the life force, to attain a higher state of vibratory energy.

Kaayakarpam are rejuvenator of our body, they include

Anti-oxidants.

Astanga yoga includes,

1. Iyamam - Self restrains.
2. Niyamam - Self observances.
3. Aasanam - Various exercising posture.
4. Praanaayaamam - Expansion of the dimension of vital Energy.
5. Prathyagaaram - Disassociation of consciousness from the outside environment.
6. Dhaaranai - Concentration.
7. Dhyaanam - Meditation.
8. Samaathi - Identification with pure consciousness.

In the past itself Siddhars got clear cut idea on many fields like, Medicinal preparations, Astrology, etc., They also followed many techniques which include,

- Naadi - To Diagnose the various diseases and to assess the prognosis of the diseases and fate of the diseases.
- Manikkadai nool - used as a diagnostic tool
- Neikuri - used to observe the prognosis of the patient and fate of the diseases.

As we are in the twentyfirst century, a spiritual heritage are being reclaimed of which Siddha System is very much important.

Now, the Modern world wants everything to be based on scientific proof. So, it is our duty to explore our siddha system by a Science Which correctly judges our medicine and Siddhars thoughts.

This dissertation work is a small dew on the vast research.

SIDDHA PHYSIOLOGY

Man is not merely a mixture of Muscles, bones and Nerves as think by physiologist. But Siddhars thought clearly says that man, the Microcosm is having himself all the things within the universe, the macrocosm.

Each human body is made up of 2 kinds of body.

Paru Udal (Visible body)

Nun Udal (Invisible body)

PARU UDAL

It includes, bones, muscles, Blood vessels, Nerves, and all the functional system of human body like Digestive system, Respiratory system etc, The Paru Udal is known as the “FUNCTIONAL UNIT OF HUMAN BEING”

NUN UDAL

It is the basic for the Paru Udal. It makes the Paru Udal to be active.

The universe is made up of 5 basic elements called Earth, Water, Fire, Air and Space. As we said before the human being is also made up of these basic 5 elements.

Each basic elements exists in two forms.

Paru Nilai (Visible form)

Nun Nilai (Invisible form)

PARU NILAI

Those things which are recognized by our senses are called as Paru Nilai.

NUN NILAI

Those things which are not recognized by our senses but they are existing in our body are called as Nun Nilai .

Physiology means that the basic process underlying the functioning of a species.

Basic things for functioning of human beings as explained by Siddhars include,

96 Thathuvangal

7 Udal katugal

6 Suvaigal.

The factors which influence the functioning of human body are,

Udal Vanmai.

Udal Thee.

96 Thathuvam

According to siddhar's view, the 96 basic factors are located in the human body. When the sperm fertilizes the ovum, the human embryo have the 96 basic factors. They also added that the each and every atom in universe has this 96 basic factors.

Panchabootham- Five basic elements:

- Mann (Earth) - Gives shape to the body and release its energy.
- Neer (Water) - It makes the earth supple and helps in Transmission of energy.
- Thee (Fire) - It makes the body steady and gives vigour stimulation.
- Vayu (Air) - Ignite the fire and works as a life carrier and it is the support of all contact and exchange.
- Aagayam(Ether)- It is the creator of life itself in the body.

Pori -5 – Five sense organs

1. Mei - organ of tactile sensation
2. Vaai - Organ of taste
3. Kan - Organ of vision
4. Mooku - organ of smell
5. Sevi - organ of hearing

Pulan-5 – Functions of the five sense organs.

1. Sapham - Hearing.
2. Sparisam - Touch.
3. Roopam - Vision.
4. Rasam - Taste.
5. Gaantham - Smell.

Kanmaenthiriyam -5 – Five Motor organs

1. Vaai - Organ for speech.
2. Kaal - Organ for locomotion.
3. Kai - Organ for performing skilled movements.
4. Eruvaai - Organ for defaecation.
5. Karuvaai - Organ for Reproduction.

Gnanenthiriyam -5 – Functions of five Motor organs

1. Vasanam - Speech.
2. Kamanam - Walk.
3. Dhanam - Movements of the upper limbs (Flexion, Extension, Supination and pronation).
4. Visarkam - Defecation.
5. Aananatham - Ejection of semen (or) ovum.

Anthakaranam -4 - Four Intellectual

1. Manam - Mind for thinking.
2. Buthi - Power of Discriminating the right from wrong.
3. Sitham - Doing the right thing.
4. Agankaaram - Firm conviction.

Arivu -1

Intellect (or) wisdom

Naadi -10

1. Idakalai - Arises from right big toe and coils round the suzhumunai and enter the left nostril.
2. Pinkalai - Arises from left big toe and coils round the suzhumunai and enter the right nostril.
3. Suzhumunai - It flow along the vertebral column upto medulla oblongata.
4. Siguvai - Present in uvula and help in swallowing.
5. Purudan - Present in right eye and help in right vision.
6. Gaandhaari - Present in left eye and help in left vision.
7. Aththi - Present in right ear and controls its hearing.
8. Alampudai - Present in left ear and controls its hearing.
9. Sangini - Present in external genitalia.
10. Gugu - Present in anus.

Vayu -10 – Ten air forces

1. Praanan
2. Abaanan
3. Viyaanan
4. Uthaanan
5. Samaanan
6. Naagan
7. Koorman
8. Girugharan
9. Thaevathaththan
10. Dhananjeyan - (explained under thodam)

Aasayam -5 – Five visceral cavities

1. Amarvaasayam - Stomach.
2. Pagirvaasayam - Liver, small intestine.
3. Salavaasayam - urinary bladder.
4. Malavaasayam - Rectum, Large Intestine.
5. Sukkilavaasayam - Seminal vesicles (or) ovary.

Kosam -5

1. Annamayakosam - Made up of seven udalthathus.
(The food (or) Material body)

2. Praanamayakosam - Made up of pranam and kanmenthiriyam.
(The Vital energy body)
3. Manomayakosam - Made up of manam and Gnanenthiriyam.
(The mental body)
4. Vingananmayakosam - Made up of puthi and Gnanenthiriyam.
(The psychic (or) vital energy body)
5. Aanandhamayakosam - Made up of pranam and suzhuthi .
(The bliss body)

Aatharam -6

1. Moolaathaaram - It lies between the Anus and
genitalia as kundalini, a vital force.
2. Swaathitaanam - It lies 12 inches above the moolatharam.
3. Manipooragam - It lies 8 inches above the swathitanam.
4. Anaagatham - It lies 10 inches above the Manipooragam.
5. Visuthi - It lies 10 inches above the anaagatham.
6. Aackinai - It lies inbetween the two eyebrows.

Malam -3

1. Aanavam - selfishness of all things around him.
2. Kanmam - It is related to both Aanavam and Maayai
it makes good and bad deeds.
3. Maayai - False thinking like others possession is
also belonging to be them.

Mandalam -3

1. Gnayirumandalam - It is located in the cardiac region and 4 inches above the stomach.
2. Thingalmandalam - It is located in the head.
3. Agnimandalam - It is situated 2 inches above the moolatharam and spreads up to umbilical region.

Thodam-3

1. Vali
2. Azhal
3. Iyam

VALI

Location:

Abaanan, faeces, Idakalai, pelvic bone, Spermatic cord, skin, nerves, joints, hairs and muscles.

Natural character

In normal condition, vali is responsible for respiration and control of all movements. It governs the 14 reflexes of our body. It also controls udal thathukkal. It gives strength to five sensory organs.

Functions When Exaggarated

Body pain like pricking and twitching in nature.

Tremor

Dryness

Loss of body weight

Boring pain

Joint dislocation

Not responding to external stimuli

Thirst

Goose flesh

unable to move upper and lower limbs

Astringent sense of taste in the mouth

Blackish discoloration of skin, stool, urine and conjunctiva.

Types of Vali

Based on its functions and location it has been classified into 10 types.

They are,

1. Uyirkkaal -Praanan

It is responsible for respiration and helps in digestion of ingested food material.

2. Keelnokkukkaal - Abaanan

It expels urine and faecal mater It constrict the anal sphinchter. It helps in proper distribution of digested food material.

3. Paravukhaal – Viyaanan

It is responsible for the movement of various body parts. It percive tactile sensation. It fills the body with digested food materials and nourishes the body.

4. Melnökkukhaal – Udhanan

Responsible for all kinds of upward motion

5. Nadukhaal – Samaanan

It controls all other vayus. It is responsible for proper digestion, assimilation and carries digested Nutrients to each and every organs.

6. Vaanthikkaal - Naagan

It is responsible for learning higher intellectual functions. It causes opening and closing of eye-lids.

7. Vizhikkaal - Koorman

Responsible for vision and yawning It makes eyes opening and closing.

8. Thummikkaal - Kirugaran

It is situated in the tongue. Induces appetite, sneezing and cough.

9. Kottavikkaal - Devathaththan

It is situated in Anus and genitalia. It makes laziness while awakening from bed. It is responsible for ocular movements and anger.

10. Veengukkaal - Dhananheyam

It is situated in cranium and produces swelling of the body. It leaves three days after the death of a person forming way through the skull bone.

AZHAL

Location

Piraanavayu, bladder, Moolakkini, Heart, umbilical region, abdomen, sweat, saliva, blood, eyes, skin, pingalai and head.

Types of Azhal

1. Aakkanal - Anala pitham

It lies in between stomach and duodenum it is responsible for digestion of food.

2. Vannaeri - Ranjaka pitham

It lies in intestine. It is responsible for colouring of the blood.

3. Aatralangi - Saathaga pitham

It is situated in the heart and it is responsible for fulfilling a function.

4. Nokkazhal - Aalosaka pitham

It lies in eye and is responsible for the perception of vision.

5. Ollolithe - Praasaka pitham

It is situated in the skin and is responsible for the complexion of skin.

IYAM

Location

Samaanan, suzhumunai, Semen, head, fat, bone marrow, blood, Nose, Colon, Joints, Chest and tongue.

Types of Iyam

1. Ali Iyam - Avalambagam

It is situated in the lungs. It controls the heart and other four forms of Iyam.

2. Neerppi Iyam - Kiledhagam

Present in the stomach it makes the food wet and helps in digestion.

3. Suvaikaan Iyam - Pothogam

It is situated in the tongue. It helps in perception of taste.

4. Niraivu Iyam - Tharpagam

It lies in head and is responsible for the coolingness of the eye.

5. Ondri Iyam - Santhigam

It is located in the joints and it is responsible for the free movement of the joints.

Edanai -3 Three physical Bindings

1. Porul patru - Material bindings.
2. Puthalvar patru - Relative bindings.
3. Ulaga patru - Worldly bindings.

Gunam-3

1. Sathuvam - Good characters.
2. Raasadham - Manly characters.
3. Thaamasam - Bad characters.

Vinai -2 – Two types of Actions

1. Nalvinai - Good activities.
2. Theevinai - Bad activities.

Raagam-8

1. Kaamam - Desire.
2. Krotham - Hatred.
3. Ulopam - Stingy.
4. Moham - Lust.
5. Madham - Pride.
6. Marchariyam - Internal conflict.
7. Idumbai - Mockery.
8. Agankaaram - Ego.

Avathai -5 – Five states of consciousness

1. Nanavu - Wakefulness.
2. Kanavu - Dream.
3. Urakkam - Sleep.
4. Paerurakkam - Stupor.
5. Uyirpadakkam - State of samathi.

7 UDAL KATTUGAL

These are responsible for the formation and maintenance of the entire structure of the body. They are formed one by one.

Functions

1. Saaram - Plasma

It strengthens our body both mentally and physically.

2. Senneer - Blood

It imparts colour to the body. It restores strength, Nourishment and intellect of an individual.

3. Oon - Muscle

It moulds the shape of the body according to the physical requirement and helps in bone growth.

4. Koozhuppu - Fat

It lubricates the different organs while doing their function and maintains oily matter of the body.

5. Enbu - Bone

It give support to the body and protects the internal organs and acts as a basic for movements of the body.

6. Moolai - Marrow

It fills the bone cavity and gives softness and strength to the bone.

7. Sukkilam / Suronitham - Sperm/ Ovum

It is responsible for the maintenance of reproduction

SUVAIGAL

Combination of two Boothams results in the formation of one taste.

NATURAL CHARACTERS OF SUVAIGAL

1. Inippu – earth + water

This taste gives happiness to mind and body. It gives tastier feeling to the mouth.

Functions

It gives nourishment to the body, It extends life span, It increases hair growth, It corrects vitiated Vali and Valiazhal thodams , It increases milk secretion, It removes poison from the body.

2. Pulippu - earth + fire

It stimulates the secretion of saliva. It produce goose flesh. It clears waste materials from the mouth.

Functions

It increases appetite and removes tastelessness, It excretes waste gas from the body. Iyam, Blood and azhal aggravates from its place due to pulippu.

3. Uppu - water + fire

It increases salivation, It produce inflammation in cheek and throat.

Functions

It removes dryness, constipation, Iyam from our body, It Increases, Sweating, It produce diarrhoea.

4. Kaippu - air + ether

It removes waste materials from the mouth. It decreases the perception of other tastes. It is not tastier to mouth.

Functions

Though it produces tastelessness, It also removes loss of taste, It removes poison from the body, It kills worms in the body, It normalizes the excess salivation, It cleanses the throat and mothers milk.

5. Kaarppu - air + fire

It causes burning sensation in tip of the mouth and cheek. It increases secretion of eye, nose and tongue. It produces hot sensation in mouth and face.

Functions

It removes the skin diseases, It clears throat problems, It increases digestion, It clears waste material from the body, It removes the damage produced by Iyam.

6. Thuvarppu - earth + air

It delays the perception of other tastes.

Functions

It removes the Azhal and Iya thodam, It gives heat sensation to the body, It clears the blood, It causes nourishment to skin.

UDAL VANMAI

The udal vanmai is divided into 3 types. These are,

1. Iyarkai Vanmai - Innate Immunity

The Natural immunity one can get by birth itself.

2. Kaala Vanmai

Improvement of stamina and Immunity according to age and seasonal variation.

3. Seyarkai Vanmai - Acquired Immunity

Regulation of healths by taking nutritious food, good activities and through medicines.

UDAL THEE – FOUR BODY FIRES

The internal fire which keeps body and soul in good condition is called as body fire. Which is of 4 types.

They are,

1. **Samaakkini** - Naturally Situated Samaanavayu
2. **Vishamaakkini** - Altered Samaanavayu from its Natural place
3. **Deekshanaakkini** - Samaanavayu in the Place of Azhal
4. **Mandhaakkini** - Samaanavayu in the Place of Iyam

SIDDHA PATHOLOGY

“ WHERE THERE IS LOVE FOR MANKIND THERE IS

LOVE FOR THE ART OF HEALING ”

-Hippocrates.

To heal a patient it is necessary to understand what is the pathology occurring inside him. So, pathology is very much basic and necessary for any type of diseases. This has been well explained by our Siddhars in the poem,

“மதித்திடற்கருமை வாய்ந்த
மண்பரிகார மெல்லாம்
துதித்திட வுணர்ந்தானேனுந்
துகறாப் பிணியின்றன்மை
பதித்திடவுணரானாகிற்
பயனுறானாகலானே
விதித்திடு பிணித்திறத்தை
விளம்புது முதற்கண்மன்னே”

- சிகிச்சாரத்ன தீபம்.

Before discussing about pathology. It is important to understand what is health? and what is Diseases?

HEALTH

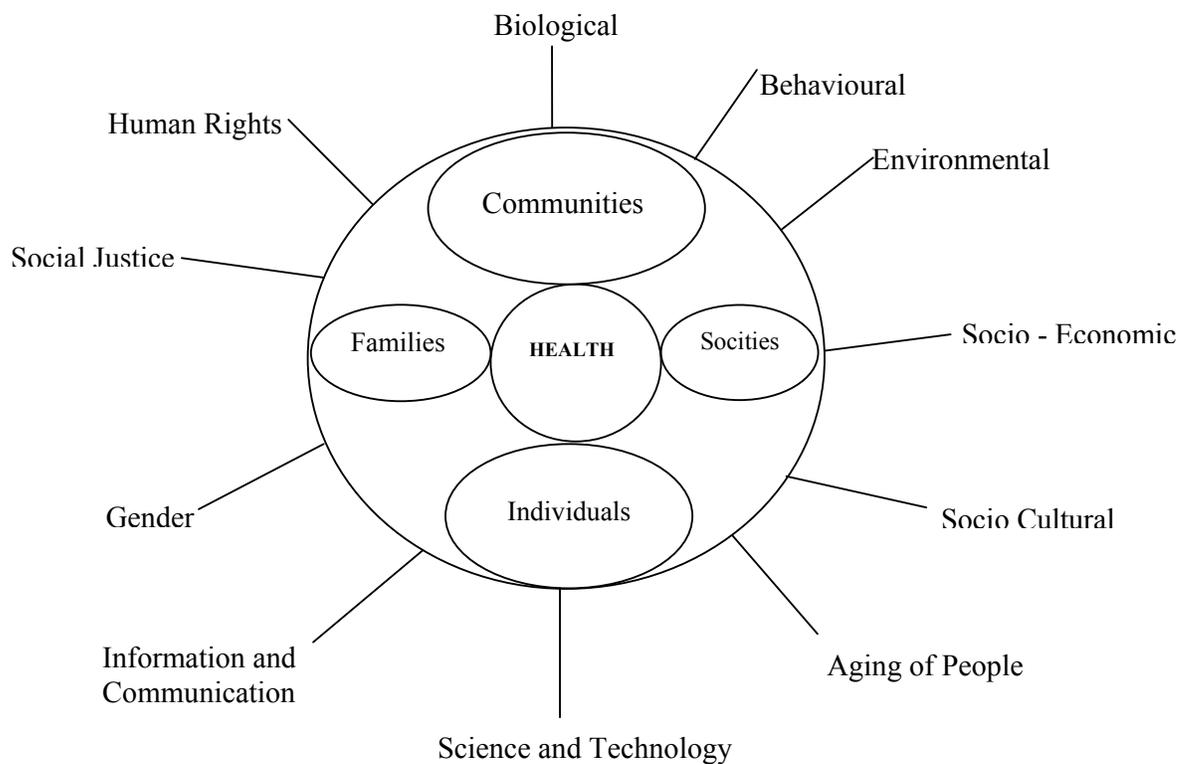
Health is a state of complete physical mental, spiritual and social well being and not merely an absence of diseases (or) infirmity.

DISEASE

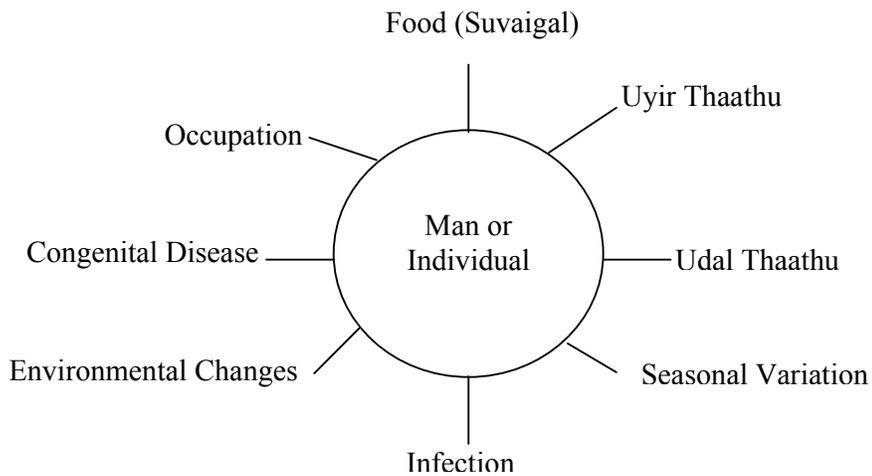
The Disease literally means without ease (uneasiness) the opposite of ease.

Diseases is a condition of the body (or) some part (or) organ of the body in which its function are deranged (or) disrupted.

DETERMINANTS OF HEALTH



All these factors contribute a major part on health. In our Siddha System, the basic factor which are responsible for the health of an individual are,



Among these, Suvaigal, uyir thathu, udal thathu are related to one another(i.e) Derangement in one can alter the function of other.



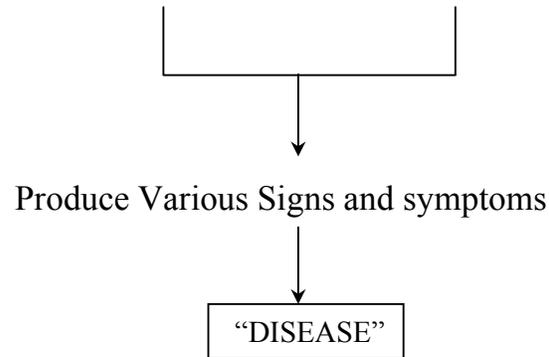
It can be represented as ,

Suvaigal	Banchapootham	Uyir thathu	Udal thathu
Enippu - Sweet	Earth+water	Iyam	Plasma, oon, fat, lymph, Reproduceive
Pulippu -Sour	Earth+Fire	Azhal	Blood
Uppu - Salt	Water+Fire	Vali	Muscular tissue(எண்பு)
Kaippu - Bitter	Air+Ether		
Kaarppu - pungent	Air+Fire		
Thuvarppu - Astringent	Earth + air		

Derangement of Kaippu, Kaarppu and Thuvarppu → Derangement of Vali → Derangement of udal Thathuesp. Muscular tissue

Derangement of Pulippu, Kaarppu and uppu → Derangement of Azhal → Derangement of udal Thathu especially Blood

Derangement of Enippu, pulippu and uppu → Derangement of Iyam → Derangement of udal thathu.



ALTERED SIX TASTES

Increased intake of taste in food makes a way for various diseases.

They are explained as follows.

1. Enippu

It produces obesity, Excessive fat, increased mucous secretion, hunger, Indigestion, Diabetes, cervical adenitis, increased Iyam and its diseases.

2. Pulippu

It produces fatigue, dull vision, drowsiness, anemia, dropsy, dryness of tongue, Acne, blisters, urticaria etc.,

3. Uppu

Greging of hair, hair loss, Aging, herpes, dryness of the tongue, debility etc.,

4. Kaippu and kaarppu

Dryness of tongue, generalized malaise, tremor, back pain, etc.,

5. Thubarppu

Abdominal discomfort, chest pain, Tiredness, impotence, Vascular constriction, constipation, dryness of tongue etc.,

INCORRECT TRI – HUMORS

Table 1. Vali kuttram

Exaggerated Vali kuttram	Decreased Vali kuttram
<ul style="list-style-type: none">➤ Loss of Body weight➤ Desire for hot foods➤ Shivering➤ Flatulence➤ Constipation➤ Weakness➤ Sleeplessness➤ Impaired function of sensory organs➤ Giddiness➤ Tiredness	<ul style="list-style-type: none">➤ Body pain➤ Slurred speech➤ Impaired work➤ Poor intelligence➤ unconsciousness➤ Increased Iyam <p>Symptoms are seen.</p>

Table 2. Azhal Kuttram

Exaggerated Azhal Kuttram	Decreased Azhal Kuttram
<ul style="list-style-type: none">➤ Yellowish discolouration of eye, face, urine and skin➤ Increase in appetite and Thirst.➤ Generalized Burning Sensation➤ Decreased Sleep	<ul style="list-style-type: none">➤ Heaviness of Stomach➤ Cold➤ loss of normal body colour➤ Disturb the normal kapha in body.

Table 3. Iya Kuttram

Exaggerated Iya Kuttram	Decreased Iya Kuttram
<ul style="list-style-type: none">➤ Increased Salivation➤ Laziness➤ Fullness of Stomach➤ Heaviness of body and body becomes chill in nature.➤ Loss of body weight➤ Wheezing, Flatulence, cough and Excessive Sleep.	<ul style="list-style-type: none">➤ Giddiness➤ Destruction of Joint➤ Decreased iyam in all body fluids.➤ Increased Sweating➤ Palpitation

Table 4. DERANGED UDAL THATHUKAL

Udal Thathukal	Increased state	Decreased State
1. Saaram	<ul style="list-style-type: none"> ➤ It indicates Exaggerated Symptoms of Iyam like, ➤ Excessive Salivation ➤ Fullness of Stomach ➤ Heaviness of body ➤ Excessive Sleep etc., 	<ul style="list-style-type: none"> ➤ Hardness of skin ➤ Body pain ➤ Wasting of Muscles ➤ Weakness of body ➤ Sound intolerance
2. Senneer	<ul style="list-style-type: none"> ➤ Formation of boils in Eyebrow, Neck, Chest, umbilicus, lips, leg, hip, bigtoe, etc., ➤ Splenomegaly ➤ Tumour ➤ Pain ➤ Loss of appetite ➤ Blood Dyscariasis ➤ Leprosy ➤ Jaundice ➤ Mental Disorders ➤ Haemangiomas ➤ Conjunctivitis ➤ Haematuria ➤ Hypertension 	<ul style="list-style-type: none"> ➤ Desire for sour foods ➤ Nervous weakness ➤ Dry skin ➤ Anaemia

3. Oon	<ul style="list-style-type: none"> ➤ Cervical lymphadenitis ➤ Tumours in cheeks, stomach, male genitalia etc, ➤ Increased musculature in Neck 	<ul style="list-style-type: none"> ➤ Poor functioning of Sensory organs ➤ Joint Diseases ➤ loss of musculature in cheeks, gluteal, Male genitalia etc.,
4.Koluppu	<ul style="list-style-type: none"> ➤ Diseases of Increased State of oon. ➤ Tiredness ➤ Dyspnoea on mild Work ➤ Increased Musculature on genitalia,chest, stomach etc., 	<ul style="list-style-type: none"> ➤ Decreased Stability of Hip Joint ➤ Splenomegaly ➤ Wasting of Muscles
5. Enpu	<ul style="list-style-type: none"> ➤ Hypercalcemia on bones and teeth, leading to hypertrophy of bone and extra teeth formation 	<ul style="list-style-type: none"> ➤ Joint pain ➤ Loss of teeth ➤ Breaking of Nails ➤ Falling of hairs
6. Moolai	<ul style="list-style-type: none"> ➤ Obesity ➤ feeling of heaviness in Eyes ➤ Clubbing of fingers and toes ➤ Oliguria ➤ Incurable ulcers 	<ul style="list-style-type: none"> ➤ Osteoporosis ➤ Giddiness ➤ Delusion
7.Sukkila thathu	<ul style="list-style-type: none"> ➤ Increased Sexual Desire ➤ Formation of Calculi 	<ul style="list-style-type: none"> ➤ Pain in genital organs ➤ Burning sensation in sexual organs ➤ Dyspareunia

Table 5. SEASONAL VARIATION

Season	Period	Muklutram		
		Vali	Azhal	Iyam
Kaar kalam	ஆவணி, புரட்டாசி	◆	★	
Kuthir Kaalam	ஐப்பசி, கார்த்திகை.	★	◆	
Munpani Kaalam	மார்கழி, தை.		★	
Pinpani kaalam	மாசி, பங்குனி			★
Elavenil kaalam	சித்திரை, வைகாசி			◆
Muthuvenir Kaalam	ஆனி, ஆடி	★		★

- ★ Normal State (தன்னிலையாதல்)
- ★ Alteration from Normal State (தன்னிலை வளர்ச்சி)
- ◆ Aggrevation and spread to other humour (பிறநிலை வளர்ச்சி)

ENVIRONMENTAL CHANGES

Kurinchi (குறிஞ்சி)

Fever that affect blood cells. Ex:- Malaria, Abdominal Mass will develop, Accumulation of Iyam.

Mullai (முல்லை)

Azhal diseases, Vali diseases will develop, Liver disorders may develop.

Marutham (மருதம்)

Healing of Vali, Azhal and Iyam diseases. It is a good place for living.

NEITHAL (நெய்தல்)

Vali diseases, Liver Enlargement, Flatulence, Obesity may develop in lean persons.

Paalai (பாலை)

All diseases of Vali, Azhal and Iyam may develop, Not a good place to live.

INFECTION

It has been not elaborately dealt by siddhars. But the following poem speaks about some diseases,

“கிருமியால் வந்த தோடம் பெருகவுண்டு
கேட்கிலதன் பிரிவுதனைக் கிரமமாக
பொருமி வரும் வாயுவெல்லாக் கிருமியாலே
புழுக்கடிபோல் காணுமது கிருமியாலே
செருமிவரும் பவுத்திரங்கள் கிருமியாலே
தேகமதில் சேகைக் குட்டங் கிருமியாலே
துருமிவருஞ் சுரோணிதங் கிருமியாலே
சூட்சமுடன் கிரிகைப்பால் தொழில் செய்வீரே”.

Urticarial rash, Fistula, Anaemia, skin diseases, Sexually transmitted Diseases, Indigestion may occur due to various Infective organisms.

OCCUPATION

In modern World, occupation is also one of the risk factor for various diseases. Occupation affect our body in 2 conditions. It may affect,

1. Uyir thathu
2. Udal thathu

By affecting this it results in diseases of the particular thathu as mentioned before.

CONGENITAL DISEASE

The acquisition of certain disease from parents to offspring leads to formation of congenital disease.

In our siddha system ,it has been explained as follows,

“பேறு இளமை இன்பம் பிணியுப்பு சாக்காடு
ஆறும் கருவிலமைப்பு”

ENNVAGI THERVUGAL

It is otherwise called as piniyari Muraimai diagnosis of the diseases.

Rules and methods

The diagnosis is based upon three main principles such as,

1. Poriyaalarithal
2. Pulanaalarithal
3. Vinaathal

Poriylarithal and pulanalarithal

Sensory organs - functions

1. Nose - Smell
2. Tongue - Taste
3. Eyes - Vision
4. Skin - Touch
5. Ear - Sound

These two are very much helpful in the diagnosis of the diseases.

Vinaathal - Interrogation

Interrogating with patient or Neighbour (In case, he is not able to speak or for children) while doing this doctor can use his pori and pulan for examining patients pori and pulan.

Ennvagai Thervugal

Theraiyar mentions the envagai thervugal as follows.

“ஐக்குறி கொடுவட வாணில் அமர்ந்தோர்
கைக்குறி தெரிந்த நம் கடவுளை துதித்தே
மெய்க்குறி நிறந்தொனி விழி நூவிருமலம்
கைக்குறி முழுவதும் கற்றார்.”

- தேரையர்

மேலும்,

“நாடிப்பரிசம் நாநிறம் மொழிவிழி
மலம் மூத்திரமிவை மருத்துவராயுதம்.”

1. Naa - Tongue
2. Niram - Colour
3. Mozhi - Speech
4. Vizhi - Eye
5. Malam - Motion
6. Moothiram - Urine
7. Naadi - Pulse
8. Sparisam - By touching (palpation)

Neikkuri

Freshly voided urine in the early morning is taken in a bowl having smooth surface. A drop of gingely oil is dropped on the upper surface of urine and watch the mode of spread of gingely oil.

Naadi - pulse

Naadi can be felt at different site. The Important ten sites are mentioned in our siddha literatures.

such as,

குதி சந்து, காமியம், உந்தி, மார்பு, காது, மூக்கு, கண்டம், கரம், புருவம் உச்சி.

Among this ten places கரம், lower end of radial artery is considered to be a best place as it is situated superficial to the radial bone.

Naadi is felt in,

Vali - Tip of Index finger

Azhal - Tip of Middle finger

Iyam - Tip of ring finger

In Normal condition, The ratio of the naadi is

“மெய்யளவு லாதமொன்று

மேல் பித்தம் மேராரையாம்

ஐயங்கர லென்றே அறி.”

-கண்ணுசாயம்

Table -6

Mukutram	Normal State	Alteration from Normal State	Aggrevation and spread to other humour		
Vali-V	1 Maathirai	2 Maathirai	V.A, V.I	V-2 Maathirai V-2 Maathirai	A- ½ to 1 Maathirai I-1/4 to ½Maathirai
Azhal-A	½ Maathirai	1 Maathirai	A.V, A.I	A-1 Maathirai A -1 Maathirai	V-1 to 2 Maathirai I- ¼ to ½ Maathirai
Iyam-I	¼ Maathirai	½ Maathirai	I.V, I.A	I -1/2 Maathirai I-1/2 Maathirai	V-1 to 2 Maathirai A-1/2 to 1 Maathirai

AIM AND OBJECTIVES

The author had selected the disease THALASTHAMBAM for dissertation work because,

The Disease is more common in India and other developing countries.

The patients are disturbed by both functionally and emotionally.

The sufferings, its prevalence and its major complications made the author to choose the disease.

AIM

To study the disease on the basis of Siddha physiology and Siddha Pathology emphasizing more importance to muktram, suvaigal, panja bootha theory, Udal thathukkal and diagnose the patient on the basis of Ennvagai thervugal and confirm the prognosis on the basis of “Neikuri”.

OBJECTIVES

To fulfil the aim the following objectives has been drawn.

1. To collect all literary evidences about vadha diseases in detail
2. To study each and every aspect of the diseases THALASTHAMBAM in the topic of its etiology, signs and symptoms from various literature in siddha aspect.

3. To concentrate the clinical course of the disease THALASTHAMBAM by observing carefully its etiology, pathology, clinical features, Diagnosis and prognosis in patients.
4. To Study in detail about the incidence of the disease with age, Sex, Socio-economic status, habits and prevalence.
5. To confirm the diagnosis in Siddha System with the help of modern parameters.

ELUCIDATION ABOUT THALASTHAMBAM

தலஸ்தம்பம்

“கருதியே மிகக்கனத்து முள்ளங் காலைக்
கனக்கவே குடைந்து நொந்து கருகிக் கண்ணும்
வருதியே வணக்கஞ்சற்றிலாம வேற
வலித்துமே மேனோக்கி வருத்தங் கண்ணும்
கருதியே சடமுலர்ந்து மேல்முச்சு கண்டாய்த்
தாகமாயு டம்புலர்ந்து தளர்ந்து கண்ணும்
கருதியே கடுவுப்பு புளிப்பு தன்னாற்
கனவாதங் கோபித்தே தலஸ்தம்பங் கண்ணே.”

(வாத ரோக நிதானம்)

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பொருள்

தலம்	-	உறுப்பு, உள்ளங்கால் (Organ, Foot, base)
ஸ்தம்பம்	-	தூண் (Not responding to any stimuli)
கனத்து	-	Thick
குடைந்து	-	Pain
நொந்து	-	Destruction
கருகி	-	கறுத்து (Blackening)
உலர்ந்து	-	சோம்பல் (Tiredness)
மேல்முச்சு	-	Dyspnoea
தாகம்	-	Increased Thirst
உலர்ந்து	-	Dryness of the Skin
கோபித்த	-	Deranged

“கருதியே மிகக்கனத்து முள்ளங் காலக்
கனக்கவே குடைந்து நொந்து கருகிக் கண்ணும்”

Pathology of the disease is described in this first line of poem. There is thickening of foot, unremitting pain in the foot, there is destruction of surrounding areas in the foot all of these makes the foot a blackish appearance.

“வருதியே வணக்கஞ்சற்றிலாம வேற
வலித்துமே மேனோக்கி வருத்தங் கண்ணும்”

Progression of disease is described in this line, the disease is not responding to treatment and the diseases progresses upwards (i.e) from foot to upwards.

“கருதியே சடமுலர்ந்து மேல்மூச் கண்டாய்த்
தாகமாயு டம்புலர்ந்து தளர்ந்து கண்ணும்”

This line clearly says the condition of patient due to chronic illness the patient becomes fatigue, dyspnoea, there is excessive thirst and loss of body weight.

“கருதியே கடுவுப்பு புளிப்பு தன்னாற்
கனவாதங் கோபித்தே தலஸ்தம்பங் கண்ணே.”

This line point out the aggravating factors of this diseases. The increased intake of salt and sour in diet aggravates the altered vali humour and forms the Thalasthambam diseases.

In Thalasthambam, Vali humour is altered. The increased intake of salt and sour in diet aggravates the altered vali humour. As a result of this,

There is

Thickening of the foot,

Pain in the foot,

Gangrene of the foot,

Diseases not responding to treatment it progress above from foot,

Excessive thirst,

Dryness of the body,

Dyspnoea,

Fatigue and

Weight loss are occur.

DETAILED PATHOLOGICAL VIEW OF

DISSERTATION TOPIC

SIDDHA ASPECT

In the disease THALASTHAMBAM – the author yugi muni explains about the pathology and prognosis of the diseases. He also explains the tastes which acts as a pre-disosing factor for the diseases. He explains these changes in an orderly form.

To explain the pathology of the disease on the basis of Vali - Azhal -Iyam.

The Derangement of Vali shows the following symptoms,

“கருதியே மிகக் கனத்து முள்ளங்காலைக்
கனக்கவே குடைந்து நொந்து கருகி காணும்”.

The Dwelling place of vali as explained by yugimuni is,

“நாமென்ற வாதத்துக்குக் கிருப்பிடமே கேளாய்
நாபிக்குக் கீழென்று நவிலலாகும்.”

With the support of above mentioned poem, when vali humour gets altered it has been reflected in their dwelling place.

“வாதமலரது மேனி கெடாது”

- தேரையர்

According to the Therayar, for any type of diseases, the vali humour is affected first.

In the disease Thalasthambam, the increased vali humour produces changes in the affected part (i.e) sole of the foot ,producing heaviness of the foot, making the foot a blackish appearance.

Increased Vali Humour Produces the following symptoms,

- Blackening of the affected part.
- Weakness.
- Weakness of the sense organs.
- Weight loss.
- Sleep disturbance.

The increased Vali humour can affect the body in two ways.

- i) The altered Vali humour disturbs the Azhal and Iya thaathu.
- ii) The changes in Uyirthaathu can be reflected in the udalthaathu.

Altered Iya Humour

Increased Iya Humour Produces the following symptoms,

- Sluggishness.
- Dyspnoea.
- Weight loss.

The decrease in udal thathu will produce different Symptoms in the body.

Altered Udal thathukkal

Udal thaathukkal

Decreased Nature

- | | | |
|-------------|---|---|
| 1. Saaram | - | Dryness of the skin ,Dyspnoea and Tiredness |
| 2. Seneer | - | Desire to take sour food, Dryness of the body |
| 3. Oon | - | Weakness of sense organs |
| 4. Kozhuppu | - | Weight Loss |
| 5. Enbu | - | Falling of hair |
| 6. Moolai | - | Making hole in the bone |
| 7. Sukkilam | - | No change. |

Thus, decrease in saram will produce decrease in other thathus too. Based upon the affected part and the duration of the disease it will produce different symptoms in the body.

In Thalasthambam, the decrease in udal thathukkal will produce the following symptoms.

“கருதியே சடமுலர்ந்து மேல் மூச்சுண்டாய்த்
தளகமாயு டம்புலர்ந்து தளர்ந்து கரணும்”

The symptoms produced are,

Dryness of the body.

Dyspnoea.

Increased Thirst.

Weight loss.

“வருதியே வணக்கஞ் சற்றிலாம வேற
வலித்துமே மேனோக்கி வருத்தங் காணும்”

In this disease as there is decrease in 6 Udal thaathukal the disease is not responding to treatment. The disease progresses to upwards.

The last line depicts that,

“கருதியே கடுவுப்பு புளிப்பு தன்னாற்
கனவாதங் கோபித்தே தலஸ்தம்பங்காணு.”

It clearly says that the increased intake of salt and sour in diet increases vali and Azhal humour respectively and pre-disposes to formation of Thalasthambam.

To prove the fact,

“புளிதுவற் விஞ்சுகறியாற் பூரிக்கும் வாதம்
ஒளியுவற் கைப் பேறில் பித்தும் சீறும்”.

- கண்ணுசாமியம்

“மாத்திய புளிப்பு மீறில் வந்திடும் வாதமாகும்”

- அகத்தியர் நாடி

“வாதமே புளிப்பு வேண்டும் வன்பித்தங் கசப்பு வேண்டும்”

- இரத்தின சுருக்கநாடி

Hence, increased intake of Vali and Azhal again disturbs the Vali itself. This has been clearly mentioned in the poem.

இதனையே,

“பித்தமே கதித்த போது பெருத்திடும் வாதமுண்டாம்
பித்தமே கதித்த போது பெருத்திடும் வயிற்றில் வாயு
பித்தமே கதித்த போது பிதற்றிடும் பித்தே கேளு
பித்தமே கதித்த போது பிறந்திடும் பிணியனேகம்”

- குணவாகட நாடி

Hence Increased intake of both sour and salt in diet Pre disposes to formation of Thalasthambam.

MODERN ASPECT

தலஸ்தம்பம்

The foot which gets affected due to gangrene is cold and motionless. Due to arterial occlusion, the limb distal to the obstruction becomes useless and numb, (i.e) having no sensation.

“கருதியே யிகக்கனத்து முள்ளங்கலைக்

கனக்கவே குடைந்து நொந்து கருகிக் கரணும்”.

In Chronic heavy smoker due to nicotine poison, there is inflammation of arteries, which involve all the three layers of arteries. The injury to endothelial layer of blood vessel initiates haemostatic repair mechanism or Thrombogenesis.

Thrombus Formation

When endothelial injury occur the sub-endothelium gets direct contact with flowing blood, the sub-endothelium consists of Thrombosis favouring factors like collagen, elastin, fibronectin, laminin and glycosaminoglycans. which are thrombogenic and thus plays an important role in initiating haemostasis as well as thrombosis.

Following this the platelet gets aggregate at the site of endothelial injury, Von-willibrend factor is responsible for the aggregation between collagen and platelets.

Due to sudden increase in platelets at the site of endothelial injury there is hypercoagulability of blood vessel, which increases the thrombus size.

When thrombus increase in size it results in arterial occlusion.

Due to arterial occlusion, there is damage to tissue. Alteration in the micro vasculature (Arterioles, Capillaries and venules) is the earliest response to tissue injury.

The alteration include,

Haemodynamic changes and

Changes in Vascular permeability

These changes at last leads to local inflammation in the affected site (கனத்து).

The pan-arteritis of vessel walls leads to thrombosis. When the lumen is occluded by a thrombus, pain is produced in the affected part due to,

- i. Insufficient blood supply to the affected part.
- ii. Due to inadequate blood flow, there is accumulation of excessive 'P' substance which is the cause for pain.
- iii. Fibrotic involvement of the nerve accounts for a certain amount of pain.
- iv. The intensity of pain increases with the rate of tissue damage as a result of Ischaemia.

- v. There is accumulation of large amounts of lactic acid in the tissues, formed as a result of anaerobic metabolism.
- vi. Due to increased cell damage, there is production of chemicals like Bradykinin and proteolytic enzymes, It can directly attack the nerve endings and excite pain.
- vii. Ischaemic neuritis

Pain

Pain is defined as an unpleasant sensation and emotional experience associated with (or) without actual tissue damage.

The pain has 2 components.

- i. Fast pain
- ii. Slow pain

Fast pain

This type of pain felt when a needle is stuck into skin (or) when the skin is cut with a knife. The fast pain is carried by A-delta fibers.

Slow pain

This pain is associated with tissue destruction due to ischaemia. It can become excruciating and can lead to prolonged, unbearable suffering. The slow pain is carried by C-type of nerve fibers.

In this diseases, Thalasthambam, the pain receptors in the skin and arterial walls are all free nerve endings, they act as receptors for both components of pain (i.e) slow pain and fast pain.

Due to the causes mentioned before, the receptors gets excited and transmit pain to the first order neuron situated in the posterior root ganglion.

First order Neuron

These neurons receive impulse of pain sensation from the pain receptors through their dendrites and their axons reach the spinal cord. After reaching the spinal cord, the fibre synapse with the second order neurons in the posterior grey horn.

Second order neuron

The marginal cells and the cells of substantia gelatinosa form the second order neurons. Fibers from these cells ascend in the form of the lateral spinothalamic tract.

Fibers of marginal cells for fast pain form the Neo-Spinothalamic tract - a part of lateral spinothalamic tract.

These nerve fibers terminate in ventral postero-lateral nucleus of thalamus. Some of the fibers terminate in ascending reticular system of brainstem.

The fibers of slow pain which arise from substantia gelatinosa cross the midline and run along with fibers of fast pain as paleo-spinothalamic fibers in lateral spinothalamic tract.

One fifth of these fibers terminate in ventral postero-lateral Nucleus of Thalamus. The remaining fiber terminate in nuclei of

reticulate formation in brain stem or in tectum of midbrain (or) in the grey matter surrounding aqueduct of sylvius.

Third order Neuron

They are the Neurons of thalamic nucleus, reticular formation, tectum and grey matter around aqueduct of sylvius.

Axons from these neurons reach the sensory area of cerebral cortex. Some fibers from reticular formation reach hypothalamus.

Center for pain sensation

The center is in the posterior central gyrus of parietal cortex.

Fibers reaching hypothalamus are concerned with arousal mechanism due to pain stimulus.

The slow pain sensation carrier type C-fibres, when synapsing in the dorsal horns of the spinal cord, they release substance-P, a synaptic neuro transmitter.

The substance-P is slow to build up at the synapse and slow to be destroyed. This is the cause for progressive increase in intensity of slow chronic pain with time and also the persistence of the slow pain.

(குடைந்து, நொந்து)

Gangrene of the foot:

Massive death of the tissue is the end phase of severe ischaemia. On top of it putrefaction sets in and foul smelling gangrene results. The

colour changes due to ischemia takes place as follows, at first, there is pallor,

Later, there may be dusty grey (or) purple discoloration due to pooling of blood in the part.

Finally, the colour changes to a greenish (or) brownish black, due to the disintegration of haemoglobin and formation of iron sulphide (கருகி காணும்).

Gangrene usually begins in the digits and in arterial obstruction of the lower limbs, usually on the undersurface of the toes. (உள்ளங்கால்)

“வருதியே வணக்கஞ்சற் றிலாம வேற
வலித்துமே மேனோக்கி வருத்தங் காணும்”

The Patient is unable to flex the affected part , (வணக்கம் சற்றிலாமல்)

The disease has a tendency to progress inspite of treatment. It progresses from foot to leg. The progression is characterized by advancing gangrene. The pain is of full and diffuse in nature producing pain in the small muscle of foot, muscles of calf and muscles of Thigh and Gluteus maximus.

“கருதியே சடமுலர்ந்து மேல்முச்சண்டாய்த்
தரகமாய் உடம்புலர்ந்து தளர்ந்து காணும்.”

In chronic arterial insufficiency, The Muscles, subcutaneous tissue, skin and skin appendages shows the effect of long standing impairment of blood supply.

The skin becomes glossy and dry (parch).

Muscle wasting is noted in calf muscles.

Atrophy of several inches of calf muscles is frequent, though part of it is due to disuse atrophy.

Dyspnoea is as a result of spasm in bronchi.(மேல்மூச்சு)

If the arterial occlusion affects the main arteries of trunk there is poor supply of blood and nutrients to the affected parts but there is continuous venous drainage this will lead to dryness of the affected parts (உடம்பு உலர்ந்து).

“கருதியே கடுவுப்பு புளிப்பு தன்னாற்
கனவாதம் கோபித்தே தலஸ்தம்பம் காணே.”

When Excess amount of salt is taken in the diet, the salt is not excreted so easily, As it accumulates in the body, salt indirectly increases the extracellular fluid volume in two ways.

When there is excess salt in the tissues, the osmolality of the body fluids increases, and this in turn stimulates the thirst centre, lateral nucleus of hypothalamus, making the person to drink extra amounts of water to dilute the extracellular salt to a normal concentration. This increases extra cellular fluid volume (தூகம்)

The increase in osmolality in the extracellular fluid also stimulates the hypothalamic posterior pituitary gland secretory mechanism to secrete increased quantities of antidiuretic hormone, ADH. The ADH in turn

causes the kidney to reabsorb increased quantities of water from the renal tubular fluid before it is excreted as urine, thereby diminishing the volume of urine, while increasing the extracellular fluid volume.

The small increases in extra cellular fluid volume can often increase the arterial pressure greatly due to increase in hydrostatic pressure. Thus, the accumulation of even a small amount of extra salt in the body can lead to a considerable elevation of the arterial pressure.

Increased arterial pressure acts as a major risk factor in the development of Thrombosis.(அதிக உப்பு)

During increased intake of tamarind (rich sour food taken daily) it produces a chemical substance ,which acts like Bradykinin and excite the pain. (அதிக புளிப்பு)

REVIEW OF LITERATURE

In Sarabenthirar Vaithya Muraigal The Thalasthambam is explained with the same poem mentioned by Yugi in Yugi Vaithya Sinthamani under the vatha roga nithanam. Sarabenthirar also kept the Poem in vatha roga nithanam. Which is mentioned below,

தலஸ்தம்பம்

“கருதியே யிகக்கனத்து முள்ளங் கரலைக்
கனக்கவே குடைந்து நொந்து கருகிக் கரணும்
வருதியே வணக்கஞ்சற்றிலாம வேற
வலித்துமே மேனோக்கி வருத்தங் கரணும்
கருதியே சடமுலர்ந்து மேல்முச் கண்டாய்த்
தாகமாயு டம்புலர்ந்து தளர்ந்து கரணும்
கருதியே கடுவுப்பு புளிப்பு தன்னாற்
கனவாதங் கோபித்தே தலஸ்தம்பங் கரணே.”

Thus clinical signs and symptoms mentioned by both Yugi and Sarabenthirar are same.

**THEORETICAL VIEW OF DISSERTATION TOPIC IN
MODERN ASPECT
ANATOMY**

Bones of The Foot

Each foot is made up of

7 tarsal bone

5 metatarsal bone

14 phalanges

Tarsus

The tarsus is made up of seven tarsal bones, arranged in two rows. In the proximal row, the talus above and the calcaneum below. In the distal row, From medial to lateral side these are the medial cuneiform, the intermediate cuneiform, the lateral cuneiform and the cuboid. Another bone, the navicular is interposed between the talus and the three cuneiform bones.

Each tarsal bone is roughly cuboidal in shape, having six surfaces.

Metatarsus

They are made up of 5 metatarsal bones, which are numbered from medial to lateral side .

Phalanges

They are 14 in number. Two for the great toe, and 3 for each of the other toes.

Muscles and fasciae of the foot

The skin and superficial fascia on the dorsum of the foot are thin and loosely adherent.

The underlying deep fascia, a thin layer is continuous above with the superior and inferior extensor retacula on both sides of the foot, it blends with the plantar aponeurosis, and anteriorly it invests the tendons on the dorsum of the foot.

Plantar muscles of the foot

Muscles of the sole are conventionally described in four layers,

Table - 7

First layer	Flexor digitorum brevis Abductor digiti minimi
Second layer	Quadratus plantaris Lumbricals
Third layer	Flexor hallucis brevis Adductor hallucis flexor digiti minimi
Fourth layer	Dorsal interossei -4 Plastar interossei -3.

HISTOLOGY OF BLOOD VESSELS

ARTERIES

All arteries are composed of 3 coats,

1. Tunica intima – Inner coat
2. Tunica media – Intermediate coat
3. Tunica adventitia – external coat

1. TUNICA INTIMA

It consists of endothelial cells. The endothelium is a single layer of simple squamous cell, polygonal, oval in shape, with rounded nuclei.

The endothelial cells rests on basal lamina.

In large arteries, connective tissue forms a sub-endothelial layer, that intervenes between endothelium and internal elastic membrane.

The internal elastic membrane have perforations (or) elongated apertures through which the cytoplasmic processes of endothelial cells achieve contact with the tunica-media.

The Internal elastic membrane forms the chief thickness of the tunica intima.

2. TUNICA MEDIA

It is principally composed of thin, cylindrical smooth muscle cells and elastic tissues.

It accounts for the bulk of the wall of most arteries.

The smooth muscle cells are held together by an abundant amount of glycoprotein, which contains collagen fibres and reticular and elastic fibres.

The thickness of tunica media varies with the size of a vessel.

The external margin of tunica media is made up of elastic tissue called external elastic membrane.

3.TUNICA ADVENTITIA

It consists of areolar connective tissue that contain fibroblasts with in a fine meshwork of elastic fibers and bundles of collagen.

Tunica adventitia is not as thick as tunica media.

It consists of vasa vasorum, which are the arteries and veins that supply the vessel walls. It also contains fine lymphatic vessels and fibers that supply the arteries.

VEINS

They are made up of 3 layers,

Tunica Adventitia

Tunica adventitia is several times thicker than the tunica media.

Tunica adventitia constitutes a major part of the vessel wall.

It is made up of loose connective tissue with longitudinal elastic fibres.

Tunica media

It is thinner than accompanying arteries

It is composed of smooth muscle cells

Tunica Intima

It is made up of endothelial cells.

The nuclei of endothelial cells are more oval and less flattened than those in arteries.

ARTERY**FEMORAL ARTERY**

The femoral artery is the main arterial stem of the lower limb.

Commencement

Femoral artery - Commences as the downward continuation of the external iliac artery. It commences at mid - inguinal point.

Course

The upper half of the artery passes within the femoral triangle and the lower half of the artery passes within the sub - sartorial canal. It passes through the adductor opening of the adductor magnus muscle.

Termination

It terminates by becoming the popliteal artery at adductor opening of the adductor magnus.

THE POPLITEAL ARTERY

This is the artery of the popliteal fossa.

Commencement

It is the continuation of the femoral artery at the adductor opening

Course

It runs downwards and slightly laterally and then vertically downwards within the depth of the popliteal fossa.

Termination

It terminates by dividing into anterior and posterior tibial arteries.

ANTERIOR TIBIAL ARTERIES

This is the artery of the anterior compartment of the leg.

Commencement

It is the smaller terminal branch of popliteal artery. It commences at the lower border of the popliteus muscle, in the back of the leg.

Course

The artery passes forwards between the two heads of tibialis posterior muscles.

It crosses the upper border of the interosseus membrane, and enters the anterior compartment of the leg. It runs downwards and slightly medially and reaches the interval between the two malleoli.

Termination

It terminates by becoming the dorsalis Pedis artery.

THE DORSALIS PEDIS ARTERY

This is the artery of the dorsum of the foot.

Commencement

It is the continuation of anterior tibial artery. It commences midway between the two malleoli.

Course

It passes downwards along the medial aspect of the dorsum of the foot, towards the first dorsal interosseous muscle. It passes between the two heads of the first dorsal interosseous muscle and reaches the sole.

Termination

It terminates by anastomosing with the deep branch of the lateral plantar artery to form the plantar arch. This artery is accompanied by a pair of venae comitantes.

THE POSTERIOR TIBIAL ARTERY

This is the artery of the posterior compartment of the leg.

Commencement

It commences from the Popliteal artery, at the lower border of the popliteus muscle. Posterior tibial artery is the large terminal branch of the popliteal artery.

Course

It passes downwards deep to the origin of soleus muscle and reach the back of the leg. And then it enters the flexor retinaculum of the ankle.

Termination

It terminates by dividing into medial and lateral plantar arteries under cover of the flexor retinaculum.

THE MEDIAL PLANTAR ARTERY**Commencement**

As one of the terminal branches of the posterior tibial artery. It commences under the flexor retinaculum of the ankle.

Course

It passes deep to the abductor hallucis and enters the foot. It then passes between the abductor hallucis and flexor digitorum brevis.

Termination

It terminates by joining the first plantar meta tarsal artery along the medical border of the big toe.

THE LATERAL PLANTAR ARTERY**Commencement**

It is the larger terminal branch of the posterior tibial artery under flexor retinaculum of the ankle.

Course

It passes deep to adductor hallucis and enter the sole.

It passes between flexor digitorum brevis and flexor digitorum accessories and reaches the base of 5th meta tarsal bone. It lies between flexor digitorum brevis and abductor digiti minimi. It then turns medially to the first inter meta tarsal space.

Termination

It terminates by anastomosing with the dorsalis pedis artery to form the plantar arch.

THE PLANTAR ARCH**Situation**

Deeper aspect of the sole.

Extent

From the base of 5th meta tarsal bone to the first inter meta tarsal space.

PHYSIOLOGY

The function of the circulation is to serve the needs of the tissues.

To Transport nutrients to the tissues.

To Transport waste products away from tissues.

To conduct hormones from one part of the body to another.

In general, to maintain an appropriate environment in all the tissue fluids for optimal survival and function of the cells.

Types of Circulation

The circulation is divided into 2 types as mentioned below,

1. Systemic Circulation
2. Pulmonary Circulation

Systemic Circulation

It supplies blood to all tissues of the body except the lungs, it is also called the greater circulation (or) peripheral circulation.

Pulmonary circulation

It supplies blood to the lungs

Functional parts of the Circulation

Arteries

The arteries transport blood under high pressures to the tissues. Hence, the arteries have strong vascular walls and blood flow rapidly in the arteries.

Arterioles

These are the last small branches of the arterial system, and they act as control valves through which blood is released into the capillaries.

Capillaries

The function of the capillaries is to exchange fluid, nutrients, electrolytes, hormones and other substances between the blood and interstitial fluid.

The capillary walls are very thin and permeable to small molecular substance.

Venules

The venules collect blood from capillaries they gradually coalesce into progressively larger veins.

Veins

The vein function as a conduits for transport of blood from the tissues back to the heart.

Blood Flow

Blood flow means the quantity of blood that passes a given point in the circulation in a given period.

Velocities of blood flow

Aorta	-	2.5 cm ²
Small arteries	-	20 cm ²
Arterioles	-	40 cm ²
Capillaries	-	2500 cm ²
Venules	-	250 cm ²
Small Veins	-	80 cm ²
Venae cavae	-	8 cm ²

Blood Pressure

Blood pressure is the force exerted by the blood against any unit area of the vessel wall.

Effect of Pressure on Blood flow

The Increase in pressure increases the blood flow in two ways.

- It increases the force that tends to push blood through the vessel.
- It distends the vessel and increase the blood flow.

GENERAL CHARACTERISTICS OF LEUKOCYTES

Functions of W.B.C

Neutrophils

It play an important role in the defense mechanism of the body.

Along with monocytes, the neutrophils provide the first line of defense against the invading microorganisms.

They are the free cells in the body and wander freely through the tissue and no part of the body is spared by these leukocytes.

Neutrophils secrete platelet Activating factor, which accelerate the aggregation of platelets during injury to the blood vessel.

Eosinophils

It play an important role in the defense of the body.

They are specifically meant for acting against the parasites.

Eosinophil count increases during parasitic infestation and allergic conditions.

Basophils

It plays an important role in healing processes after inflammation and in acute hypersensitivity reactions.

The number of basophils is increased during healing process.

Monocytes

It play an important role in defense of the body.

Monocytes are motile and phagocytic.

It secretes interleukin-1(IL-1), Colony stimulating factor(CSF)and platelet activating factor (PAF)

They are the precursors of the tissue macrophages.

Lymphocytes

It Play an important role in immunity

They are classified into 2 types,

Namely

i) T- Lymphocytes

ii) B- Lymphocytes

i) T- Lymphocytes

They are responsible for the development of cellular immunity

ii) B- Lymphocytes

They are responsible for the development of humoral immunity.

Platelets

The platelets are inactive and execute their actions only when activated.

They are responsible for the onset of blood clotting.

Actin, the contractile proteins are responsible for clot retraction.

Platelets have adhesive property.

It secretes 5 Hydroxy tryptamine, which cause the constriction of blood vessels.

PATHOLOGY

THROMBO ANGITIS OBLITERANS

Thrombo Angitis obliterans is an obstructive arterial diseases caused by segmental Inflammatory and proliferative lesions of the medium and small arteries and veins of the limbs.

ETIOLOGY

Idiopathic

The cause is not known.

Age

Common between the ages of 25-40 years.

Sex

Formerly considered to be exclusively a disease of male. Recent reports show that there is an increase in the incidence of the disease in female, consistent with the increase in their smoking habits.

Race

T.A.O is known to be present throughout the world and no race or colour is known to be immune.

Heredity

No hereditary basis is established.

Occupation

Has no relation. But it is believed to be more common in farmers from low socioeconomic group.

Climate

Geographic location and climate are questionable factors. However cold has a deleterious effect on patients suffering from T.A.O by causing vasoconstriction superimposed on arterial occlusion.

Tobacco

The great majority suffering from T.A.O are heavy smokers. If the patient with T.A.O continues to smoke, the disease has a tendency to progress inspite of treatment. But if the patient discontinues smoking the disease tends to run a favourable course and exacerbations and new vascular occlusions are rare.

Pre-disposing factors

Hypertension

Diabetes mellitus

Cigarette smoking

Physical exercise – Lack of physical exercise predisposes to
atherosclerosis

Role of highly saturated fats and cholesterol

The above have been proven to be key factors for assessing risk of premature Atherosclerosis

Clinical classification of TAO

Allen-Barker-Hynes have classified the disease into 8 groups.

- Arterial occlusion causing intermittent claudication as the only symptom.
- Intermittent claudication with cold digits and mild rest pain.
- Severe ischaemic neuritis.
- Marked colour changes and Raynauds phenomenon.
- Minor gangrene with local infection.
- Gangrene of digits.
- Severe gangrene spreading on to foot or hand.
- Thrombophlebitis as major or only complaint.

Clinical Features

- Intermittent Pain
- Colour Changes
- Skin Temperature
- Absence of Arterial Pulsation
- Nutritional Changes
- Gangrene

Intermittent Pain

This type of pain is otherwise known as intermittent claudication.

The term stems from the Latin verb Claudicare, meaning to limp. It was

found to be associated with obliteration of the main artery of leg. Intermittent claudication in man is an indication of obstruction to the free flow of blood to the tissues of the affected limb. Intermittent claudication is a symptom and not a disease

The site of claudication is a rough measure of the level of vascular occlusion. It is more commonly observed in the calf and small muscles of the foot than in the thigh because in the thigh there is a generous collateral circulation to compensate for the partial occlusion of the main vessel.

Colour Changes

Lewis classic monograph (1936) concludes that skin colour is a good index of the adequacy of peripheral blood flow when the normal responses to environmental conditions are known.

The colour of skin attributable to circulation depends on two factors (i) Amount of blood (ii) Colour of blood. The depth of the colour of skin depends upon the amount of blood contained within the capillaries of the skin.

Skin Temperature

The skin temperature of resting limb is dependent upon the balance between the amount of heat brought to it by the blood and the amount of heat lost to its surroundings, when the blood flow to a limb is reduced the amount of heat brought to it is reduced. Hence the part becomes cool.

Environmental factors also influence the skin temperature, but when both limbs are examined under identical conditions, the colder one may be justly assumed to have impaired flow.

Absence of Arterial Pulsations

All arteries are felt against a bone. It constitutes an important part of examination. While searching for pulsations, the volume and amplitude of pulsations are recorded and compared with the other limb.

The vessels are examined in the following order.

Femoral artery

Popliteal artery

Dorsalis Pedis Artery

Posterior Tibial artery

Peroneal artery

Radial artery

Ulnar artery

Brachial artery

Digital arteries

Abdominal aorta, temporal and carotid arteries may be examined to exclude any generalised involvement of arterial trunk.

Nutritional changes

Atrophy: In chronic arterial insufficiency, muscles, subcutaneous tissue, skin and skin appendages show the effect of long standing impairment of blood supply. These are most noticeable in the distal parts of the limb.

The skin becomes glossy, parchment like and the digital pulp atrophies. Muscle wasting can be detected by measurements. Atrophy of several inches of calf muscles is frequent, though part of it is due to disuse.

Gangrene

Massive death of the tissue is the end phase of severe ischaemia. It often follows ulceration.

Gangrene usually begins in the digits and in arterial obstruction of the lower limbs, usually on the undersurface of the fifth or first toe. But if it is precipitated by trauma it arises at the site of trauma.

Buerger's angle of circulating insufficiency

This has been recommended to estimate the state of circulation in a limb.

A normal limb retains its colour even when held at ninety degrees to the horizontal unlike an ischaemic limb that develops pallor after elevation to an angle less than ninety degrees. This angle is called Buerger's angle.

In Thrombosis angitis obliterans, the underlying pathology is that due to excessive smoking, there is deposition of Nicotine in blood vessels producing arteritis. The arteritis is followed by thrombosis.

THROMBOSIS

Definition and Effects

Thrombosis is the process of formation of solid mass in circulation from the constituents of flowing blood, the mass itself is called a thrombus.

Human beings possess inbuilt system by which the blood remains in fluid state normally and guards against the hazards of thrombosis and haemorrhage. However, injury to the blood vessel initiates haemostatic repair mechanism or Thrombogenesis. Virchow described three primary events which predispose to thrombus formation.

Virchow's triad

Endothelial injury, alteration in flow of blood, and hypercoagulability of blood. These events are discussed below.

1. ROLE OF BLOOD VESSEL WALL.

The integrity of blood vessel wall is important for maintaining normal blood flow. An intact endothelium has the following functions.

i. It protects the flowing blood from the thrombogenic influence of subendothelium.

ii. It elaborates a few anti-thrombotic factors (thrombosis inhibitory factors) e.g

- a. Heparin-like substance which accelerates the action of antithrombin III and inactivates some other clotting factors.
- b. Thrombomodulin which converts thrombin into activator of protein C, an anticoagulant.
- c. Inhibitors of platelet aggregation such as ADPase, PGI₂ or prostacyclin.
- d. Tissue plasminogen activator which accelerates the fibrinolytic activity.

iii. It can release a few prothrombotic factors which have procoagulant properties (thrombosis favouring factors) e.g

- a. Thromboplastin or tissue factor released from endothelial cells.
- b. Von willebrand factor that causes adherence of platelets to the subendothelium.
- c. Platelet activating factor which is activator and aggregator of platelets.
- d. Inhibitor of plasminogen activator that suppresses fibrinolysis.

Vascular injury exposes the subendothelial connective tissue (e.g. collagen, elastin, fibronectin, laminin and glycosaminoglycans) which are

thrombogenic and thus plays important role in initiating haemostasis as well as thrombosis. Endothelial injury is of major significance in the formation of arterial thrombi. Cigarette smoking may cause vascular injury and predispose to the formation of thrombi. These are as under.

2. Role of Platelets

Following endothelial cell injury, platelets come to play a central role in normal haemostasis as well as in thrombosis. The sequence of events is as under.

i. Platelet adhesion

The platelets in circulation recognize the site of endothelial injury and adhere to exposed sub-endothelial collagen (primary aggregation), von willebrand's factor is required for such adhesion between platelets and collagen. Normal non-activated platelets have open canalicular system with cytoplasmic organelles (granules, mitochondria, endoplasmic reticulum) dispersed throughout the cytoplasm.

During the early adhesion process, there is dilatation of canalicular system with formation of pseudo-pods and the cytoplasmic organelles shift to the centre of the cell.

ii. Platelet release reaction:

The activated platelets then undergo release reaction by which the platelet granules are released to the exterior. Two main types of platelet granules are released.

- a. Alpha granules containing fibrinogen, fibronectin, platelet-derived growth factor, platelet factor 4 (an anti-heparin) and cationic proteins.
- b. Dense bodies containing ADP (adenosine diphosphate). Ionic calcium, 5-HT (serotonin), histamine and epinephrine.

As a sequel to platelet activation and release reaction, the phospholipids complex-platelet factor 3 gets activated which plays important role in the intrinsic pathway of coagulation.

iii. Platelet aggregation

Following release of ADP, a potent platelet aggregating agent, aggregation of additional platelets takes place (secondary aggregation). This results in formation of temporary haemostatic plug. However, stable haemostatic plug is formed by the action of fibrin, thrombin and thromboxane A₂.

3. ROLE OF COAGULATION SYSTEM

Coagulation mechanism is the conversion of the plasma fibrinogen into solid mass of fibrin. The coagulation system is involved in both haemostatic process and thrombus formation. The schematic representation of the cascade of intrinsic (blood) pathway, the extrinsic (tissue) pathway, and the common pathway leading to formation of fibrin polymers.

i. In the intrinsic pathway

Contact with abnormal surface leads to activation of factor XII and the sequential interactions of factors XI, IX, VIII and finally factor X, alongwith calcium ions (factor IV) and platelet factor 3.

ii. In the extrinsic pathway

Tissue damage results in the release of tissue or thromboplastin. Tissue factor on interaction with factor VII activates factor X.

iii. The common pathway

Begins where both intrinsic and extrinsic pathways converge to activate factor X which forms a complex with factors Va and platelet factor 3, in the presence of calcium ions. This complex activates prothrombin (factor II) to thrombin (factor IIa) which, in turn, converts fibrinogen to fibrin. Initial monomeric fibrin is polymerised to form insoluble fibrin by activation of factor XIII.

iv. Regulation of coagulation system

The blood is kept in fluid state normally and coagulation system kept in check by controlling mechanisms.

These are as under,

a) Protease inhibitors

These act on coagulation factors so as to oppose the formation of thrombin e.g. anti-thrombin III, protein C, C₁ inactivator, α 1-antitrypsin, α 2-macroglobulin.

b) Fibrinolytic system

Plasmin, a potent fibrinolytic enzyme is formed by the action of plasminogen activator on plasminogen present in the normal plasma.

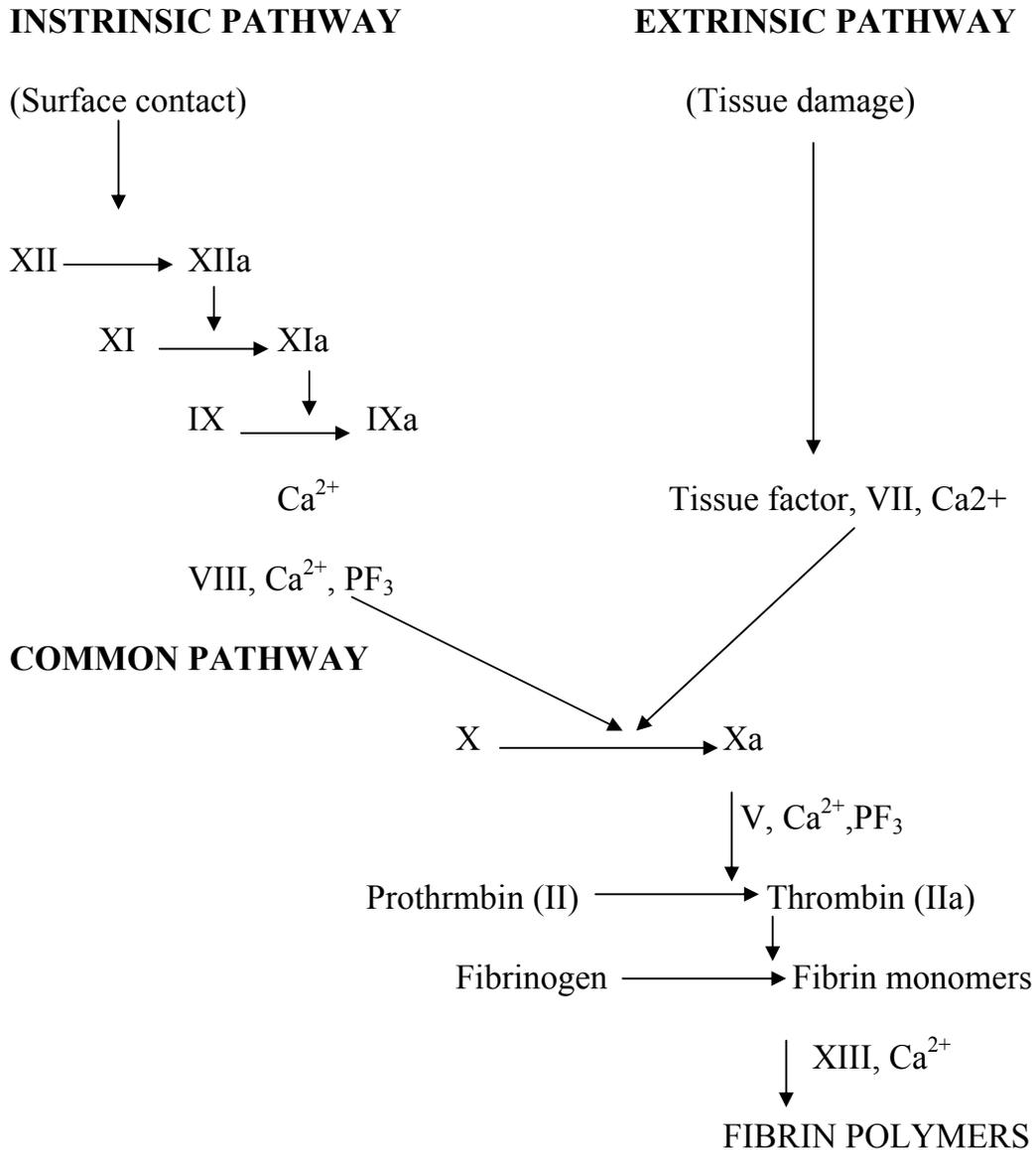
Two types of plasminogen activators (PA) are identified:

Tissue-type PA derived from endothelial cells and leucocytes.

Urokinase-like PA present in the plasma.

Plasmin so formed acts on fibrin to destroy the clot and produces fibrin split products (FSP).

**SCHEMATIC REPRESENTATION OF PATHWAYS OF
COAGULATION MECHANISM.**



4. HYPERCOAGULABILITY OF BLOOD

The effect of hypercoagulability on thrombosis is favoured by advancing age, smoking, use of oral contraceptives and obesity. Hypercoagulability may occur by the following changes in the composition of blood.

- i) Increase in coagulation factors e.g. fibrinogen, prothrombin, factor VIIa, VIIIa and Xa.
- ii) Increase in platelet count and their adhesiveness.
- iii) Decreased levels of coagulation inhibitors e.g. antithrombin III, fibrin split products.

5. ALTERATION OF BLOOD FLOW

Formation of arterial and cardiac thrombi is facilitated by turbulence in the blood flow

- i) Normally, there is axial flow of blood in which the most rapidly moving central stream consists of leucocytes and red cells. The platelets are present in the slow moving laminar stream adjacent to the central stream while the peripheral stream consists of most slow moving cell free plasma close to endothelial layer
- ii) In turbulence and stasis, the normal axial flow of blood is disturbed so that the platelets come into contact with the endothelium.

Besides the inhibitors of coagulation fail to reach the site of thrombus resulting in enlargement of thrombus size. Turbulence may actually injure the endothelium resulting in deposition of platelets and fibrin.

EVALUATION OF THE DISSERTATION TOPIC

MATERIALS AND METHODS

The study on the Noi Naadal aspect (i.e) pathological view of THALASTHAMBAM was carried out in the post graduate Department of Govt. Siddha Medical Collage, Palayamkottai and Mangalam hospital, Palayamkottai. In this study, patients were treated as out- patients.

Selection of cases

The auther has selected 10 cases with similar symptoms of THALASTHAMBAM under the supervision of professor, faculties and lecturer of post graduate, Noi - Naadal Department. The cases were selected for the study on Noi - Naadal aspect of THALASTHABAM.

EVALUATION OF CLINICAL PARAMETERS

Clinical Features of Thalasthambam

1. Heaviness of the foot.
2. Pain in the foot
3. Blackening of the foot
4. Spreading upwards from foot
5. Excessive thirst
6. Dryness of the body
7. Dyspnoea
8. Fatigue
9. Weight loss.

Study on siddha clinical diagnosis

The following siddha parameters such as Vinaathal, poriyalarithal, Pulanaal arithal were used to study the,

- Mukkutra Nilaigal
- Udul kattugal Nilaigal
- Envagai Thervugal Nilaigal

Envagai Thanugal is the most important of all the diagnostic methods.

The prognosis of the diseases is assed using “Neikuri”

The Clinical Investigations

The author used the following investigatory parameters for further detailed study about this disease.

They include,

Haematological

- Total count of R.B.C.
- Differential count of W.B.C.
- Haemoglobin
- ESR

Bio-Chemical

- Blood Sugar
- Urine analysis and
- Motion test were done.

Others

- Doppler study of lower limb.

OBSERVATION AND RESULTS

1. Results are observed with respect to the following aspects:

- i. Age and Sex reference.
- ii. Socio economic status
- iii. Etiological factors
- iv. Mukkutra nilai
- v. Udal Thathukkal
- vi. Envagai Thervugal
- vii. Viral kadai alavu
- viii. Clinical Features
- ix. Laboratory Findings.

Table 8. Age and Sex reference:

Age	Sex		No. of cases
	Male	Female	
10 - 20 yrs	-	-	-
20 - 30 yrs	2	-	2
30 - 50 yrs	8	-	8

Table 9. Socio-Economic status:

SI. No	Socio-Economic Status	No. of Cases
1	Rich	-
2	Middle class	3
3	Poor	7

Table 10. Etiological factors:

SI. No	Etiological factors	No. of Cases
1	smoking	10
2	Increased Intake of salt and sour	6

Table 11. Mukkuttra nilai

Derangement of Vali:

S. No	Types of Vali	No of cases affected	Changes
1.	Praanan	6	Dyspnoea
2.	Abaanan	5	Constipation
3	Viyaanan	10	Pain, Restricted Movements
4	Uthaanan	7	Thirst
5	Samaanan	10	Balancing Fuctions is disturbed
6	Naagan	-	-
7	Koorman	-	-
8	Kirukaran	-	-
9	Devathaththan	9	Tiredness
10	Dhananjeyan	-	-

Table 12. Derangement of Azhal:

S. No	Types of Azhal	No of cases affected	Changes
1	Anar pitham	-	-
2	Ranjagam	7	Anemia
3	Saadhagam	10	Restricted Movement
4	Aalosagam	-	-
5	Praasagam	10	Gangrene

Table 13. Derangement of Iyam:

S. No	Types of Iyam	No of cases affected	Changes
1	Avalampagam	10	Balancing Fuctions is disturbed
2	Kilethagam	-	-
3	Pothagam	-	-
4	Tharpagam	-	-
5	Santhigam	10	Restricted Movement

Table 14. Udal Thaathukkal:

S. No	Udal Thaathukkal	No of cases affected	Changes
1	Saaram	10	Dryness of the skin
2	Senneer	10	Desire to take sour food
3	Oon	10	Necrosis of the foot
4	Kozhuppu	10	Necrosis of the foot
5	Enbu	9	Reduction of bone size in the foot, Falling of hair.
6	Moolai	9	Formation of hole in the bone
7	Sukkilam	-	-

Table 15. The Picture of Envagai Thervugal:

Case No	Naa	Niram	Mozhi	Vizhi	Malam	Moothiram	Naadi	Sparisam
1	A	A	Urathali	A	A	Mellana paraval,saladaikan	Vali Iyam	A
2	N.A	A	Samali	N.A	N.A	Mellana paraval,saladaikan	Azhal Iyam	A
3	N.A	A	Samali	N.A	N.A	Mellana paraval	Vali Iyam	A
4	N.A	A	Samali	N.A	A	Mellana paraval,saladaikan	Azhal Iyam	A
5	A	A	Samali	A	A	Mellana paraval	Vali Iyam	A
6	N.A	A	Samali	N.A	N.A	Mellana paraval	Vali Azhal	A
7	A	A	Urathali	N.A	A	Mellana paraval,saladaikan	Vali Azhal	A
8	N.A	A	Samali	A	N.A	Mellana paraval,saladaikan	Vali Iyam	A
9	N.A	A	Samali	A	A	Mellana paraval	Azhal Iyam	A
10	A	A	Urathali	A	N.A	Mellana paraval,saladaikan	Vali Iyam	A

A - Affected

N.A - Not Affected

Table 16. Viral Kadai alavu

S.No	Viral Kadai alavu	No of cases
1.	9	8
2.	9 1/2	2

From the Viral kadai alavu, the majority of cases are having 9 as viral kadai alavu, the symptom mentioned under this is difficulty in walking ,which is seen in patients of Thalasthambam.

Table 17. Clinical Features.

S. No	Clinical Features	No of cases
1	Heaviness of the foot	10
2	Pain in the foot	10
3	Blackening of the foot	10
4	Spreading upwards from foot	10
5	Excessive thirst	7
6	Dryness of the body	1
7	Dyspnoea	6
8	Fatigue	9
9	weight loss	2

Table 18. Laboratory Findings

Case No	Blood				ESR		Hb gm	Bio Chemical	Urine			Motion	
	Tc cells/cumm	DC Cells			1/2 hr mm	1 hr mm		Sugar mgs% Random	Alb	Sug	Dep NAD	Ova	Cyst
		P%	L%	E%									
1	8000	60	35	5	8	12	10.8	130	Nil	Nil	-	Nil	Nil
2	9500	68	32	-	10	15	14.0	120	Nil	Nil	Nil	Nil	Nil
3	10400	58	40	2	15	30	13.8	122	Nil	Nil	Nil	Nil	Nil
4	9800	54	46	-	8	12	12.8	128	Nil	Nil	Nil	Nil	Nil
5	8900	66	34	-	6	12	12.5	126	Nil	Nil	-	Nil	Nil
6	10500	58	32	-	20	53	12.9	126	Nil	Nil	Nil	Nil	Nil
7	12600	70	28	2	10	15	11.3	138	Nil	Nil	Nil	Nil	Nil
8	9500	65	33	2	2	4	11	95	Nil	Nil	-	Nil	Nil
9	7800	54	44	2	10	30	9.6	120	Nil	Nil	Nil	Nil	Nil
10	7100	71	24	5	6	14	10.8	126	Nil	Nil	Nil	Nil	Nil

NAD – No Abnormal Defects

STATISTICAL ANALYSIS AND INTERPRETATIONS

The study results were analysed by the statistics, mean, advariations of the variable. The analysed results were interpreted statistically by studies 't' test and epidemiological rates and ratio for assessing the risk of the disease.

DISCUSSIONS AND RESULTS

Age

Age is one of the crucial factor of the incidence of the disease. The study subjects were classified according to their age and sex and are tabulated below,

Table – 19

Age and Sex wise classification of study cases

Age Group	No. of Male Cases	Study subjects		S.D	Mean age of the population 95% C.I- Confidence Interval
		Mean	Median		
30-34	3	37.5 Years	37.5 Years	5.9 years	33.3 to 41.7 years
35-39	3				
40-44	2				
45-49	2				
Total	10				

From the above table the mean and median ages of the study subjects are 37.5 ± 5.9 years the same age in the population will be 33.3 to 41.7 years. The average ages of the incidence of the diseases in the population is estimated through the above samples.

Etiological Factors

The etiological factors are identified as smoking and increased intake of salt and sour in the diet. The risk level of the above factors are analysed and interpreted as follows.

Smoking

Among the 10 study subjects all are having the habit of smoking.

Salt and Sour

The increased intake of salt and sour in diet is one of the crucial factor for the incidence of the disease. The risk is analysed with the management of the disease that is amputation. The results of the risks are furnished below.

Table – 20

Risk of excessive intake of salt and sour with amputation

Intake of salt and sour	Management			RR	AR	OR
	Amputated	Non-Amputated	Total			
Excess	2	4	6	1.3	23%	1.5
Limited	1	3	4			
Total	3	7	10			

The above table clearly shows that the excess intake of salt and sour is 1.3 times risk of amputation than the risk of moderate in take of salt and sour (RR=1.3). In the absence of excess intake the risk of amputation is only 23% (AR=23%). The excess intake of salt and sour is 1.5 times greater risk than the moderate intake in respect of amputation. From the above analysis, the excessive smoking and increased intake of salt and sour are leading and crucial causes for amputation and etiology for the disease.

Mukkuutra Nilai

The Mukkuutra Nilai and components are tabulated below.

Table – 21

**Percentage distribution of Mukkuutra Nilai derangement
and its components of affected persons.**

S. No	Mukkuutra Nilai Component	N	Types	Affected Case	
				No. of Cases	% of Cases
1	Vali	10	Praanan	6	60
			Abaanan	5	50
			Viyaanan	10	100
			Uthaanan	7	70
			Samaanan	10	100
			Devathaththan	9	90
2.	Azhal	10	Ranjagam	7	70
			Saathagam	10	100
			Praasagam	10	100
3.	Iyam	10	Avalambagam	10	100
			Santhigam	10	100

From the above table under Vali cent percentage affected cases are Viyaanan and Samaanan. The above component of Vali namely Devathaththan and Uthaanan are affected by 90 and 70 percentages respectively. The remaining Praanan and Abaanan are affected by 60 and 50 percentage respectively.

In respect of Azhal, the Praasagam and Saathagam the affected cases are cent percents and the Ranjagam is 70 percentage.

The cent percentage affected cases are observed in both Avalambagam and Santhigam under Iya thodam.

Udal Thathukkal

The study subjects are classified at the level of affection in terms of percentages. They are posted in the forth coming table.

Table – 22

The components of Udal Thaathukkal affected are tabulated below as follows,

S. No	Udal Thaathukkal	N	Affected cases	
			No. of Cases	% of Cases
1	Saaram	10	10	100
2.	Senneer	10	10	100
3.	Oon	10	10	100
4	Kozhuppu	10	10	100
5.	Enbu	10	9	90
6.	Moolai	10	9	90
7.	Sukkilam	10	-	-

In the above table, it is observed that except Enbu and Moolai, cent percentage are affected for saram, senneer, oon and kozhupu. The Enbu and moolai are affected by 90% .In the disease Thalasthambam the sukkila thathu is not affected .

Ennvagai Thervugal

The study subjects were examined by Ennvagai thervugal the percentage of the affected cases are tabulated below.

Table –23

Examination of cases through Ennvagai Thervugal and Percentage distribution

S.No	Examination	N	Type	Affected Cases	
				No. of Cases	% of Cases
1.	Naa	10		4	40
2.	Niram	10		10	100
3.	Mozhi	10	Sama Oli	7	70
			Uratha oli	3	30
4	Vizhi	10		5	50
5	Malam	10		5	50
6	Moothiram	10	Melana Paraval , Salladai Kan	6	60
			Other	4	40
7	Sparisam	10	10	10	10
8	Naadi	10	Vali Iyam	5	50
			Azhal Iyam	3	30
			Vali Azhal	2	20

In thalasthambam, all cases were having changes in Niram and Sparisam. In Mozhi 70% cases were having changes, 50% were having changes in malam and Vizhi, In moothiram the changes were noted for 60% cases.

Viral kadai alavu

The study cases are estimated based on the Viral Kadai Alavu and the measurement are tabulated below.

Table – 24
Estimation of Viral Kadai Alavu

S.No	Viral Kadai alavu	N	Affected cases	
			No of cases	% of cases
1.	9	10	8	80
2.	9 1/2	10	2	20

From the above table, it is observed that 80 percentage of cases were having 9 as viral kadai alavu. 20 percentage of cases were having 9 ½ as viral kadai alavu.

Clinical features:

The clinical indicators for Thalasthambam and management with percentage distribution are furnished in the table.

Table –25
Percentage distribution of Clinical features in
Thalasthambam

S.No	Clinical Features	N	Affected	
			No.of cases	% of Cases
1	Heaviness of the foot	10	10	100
2.	Pain in the Foot	10	10	100
3.	Blackening of the foot	10	10	100
4.	Spreading upwards from foot	10	10	100
5.	Excessive thirst	10	7	70
6.	Dryness of the body	10	1	10
7.	Dyspnoea	10	6	60
8.	Fatigue	10	9	90
9	Weight Loss	10	2	20

DISCUSSION

In Yugi Vaithiya Sinthamani, THALASTHAMBAM is described under Vali diseases. The Name Thalasthambam itself implies, it is a Vali disease principally affecting the foot, as ‘Thalam’ means foot (or) base.

To discuss the factors, which help to analyse and confirm the pathological basis of the disease are the siddha and modern parameters.

The observed results and other entities that have been studied are discussed under the following headings.

1. Age and Sex distribution

The incidence of Thalasthambam is common in men.

Due to their habit of smoking.

Age between 25 – 40 years.

2. Incidence with reference to Family History

There is no specific relationship with Family History.

3. Incidence with reference to Personal Habits

Heavy smoking is closely related with the diseases.

High intake of salt and sour in diet also acts as a cause for it.

4. Incidence with reference to occupation

Men who have habit of smoking to relax the tension in their job.

Sedentary life style which give them more time to smoke heavily.

5. Incidence with reference to Residential area

There is no direct relationship with the residential area. Irrespective of their residing place, the food habit and heavy smoking will lead to the disease soon.

6. Incidence with reference to Socio- economic condition

The incidence of Thalasthambam is common among poor socio - economic group.

INTERPRETATION OF SIDDHA PARAMETERS

a. Mukkutram

Vali, Azhal, and Iyam constitutes the Mukkkutrangal, and the affected thodams are,

Table -26. Derangement in Vali

S. No	Types	Changes	Character
1	Piraanan	Affected	Dyspnoea
2	Abaanan	Affected	Constipation
3	Viyaanan	Affected	Pain, Restricted movements.
4	Uthaanan	Affected	Thirst.
5	Samaanan	Affected	Balancing function is disturbed
6	Naagan	Not affected	-
7	Koorman	Not affected	-
8	Kirukaran	Not affected	-
9	Devathathan	Affected	Tiredness
10	Dhananjeyan	-	-

Table – 27. Derangement of Azhal

S. No	Types	Changes	Character
1	Analpitham	Not affected	-
2	Ranjagapitham	Affected	Fatigue
3	Saathagam	Affected	Restricted movements.
4	Alosagam	Not affected	-
5	Praasagam	Affected	Ulcers, gangrene present in toe

Table – 28. Derangement of Iyam

S. No	Types	Changes	Character
1	Avalambagam	Affected	Balancing other types of kabham gets affected
2	Kilethagam	Not affected	-
3	Pothagam	Affected	
4	Tharpagam	Not affected	-
5	Santhigam	Affected	Restricted movements

Table – 29. Udal Thaathukkal

The observation in Udal Kattugal has been tabulated as follows.

S. No	Types	Changes	Character
1	Saaram	Affected	Dryness of the skin.
2	Senneer	Affected	Desire to take sour food
3	Oon	Affected	Necrosis in the foot
4	Kozhuppu	Affected	Necrosis in the foot ,Weight loss.
5	Enbu	Affected	Falling of hair,Reduction of bone size in the foot
6	Moolai	Affected	Formation of hole in the bone.
7	Sukkilam	Not affected	-

Ennvagai Thervugal

Among the Ennvagai Thervugal, Meikuri, Niram and Naadi were affected and reflects the characteristic picture of Thalasthambam.

a. Meikuri

Changes in cellular level of this disease reflects on Meikuri. There is heaviness of the skin, pain in the affected area and gangrene formation in the foot.

b. Niram

The skin shows the changes the blackening of the affected area, (gangrene of the foot).

c. Naadi

In this diseases Thalasthambam, The Naadi in affected leg is feeble. When the gangrene is formed the Naadi is disappeared totally.

The **Kai Naadi**, in Thalasthambam is “**Vali Iyam**”.

The other parameters of Envagai Thervugal are explained below as follows.

Table-30. Ennvagai Thervugal

S. No	Types	Changes	Character
1	Meikuri	Affected	Gangrene
2	Niram	Affected	Blackening of the foot.
3	Naa	Affected	Palor
4	Vizhi	Affected	Pale colour in the conjunctiva
5	Mozhi	Not affected	-
6	Malam	Affected	Constipation
7	Kaikuri	Vali Iyam	-

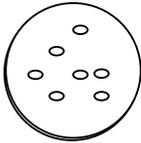
Moothiram

Neerkuri, Neikuri References

Table – 31. Neerkuri

S. No	Types	Characters of urine	Patient state
1	Niram	Specific change in colour	Normal
2	Manam	Changes in smell	Normal
3	Edai	Changes in specific gravity	Normal
4	Nurai	Abnormal frothy	Nil
5	Enjal	Deposits	Normal

Table - 32. Neikuri

Test	Character of Neikuri	Figure
Neikuri	Oil slowly spreads in urine and it forms saladai kan like structure	

Slow spread of oil indicates changes in Vali, saladai kan like structure denotes changes in Iyam. Neikuri indicates that the disease is not curable.

INTERPRETATION OF ALLIED PARAMETERS

After examination of clinical features by Ennvagai Thervugal, the patient was subjected to laboratory investigations, which include haematological, urine and stool examination and specific examination like Doppler study of lower limb.

Haematological examination shows no abnormal findings.

Urine and stool examinations are normal.

Doppler study of lower limb shows panarteritis and thrombosis in leg arteries at various level.

HIGHLIGHTS OF THE DISSERTATION TOPIC

Thalasthambam comes under Vatha roga nithanam in Yugi Vaithya Sinthamani 800.

For any type of disease the vali humour is first affected. Followed by alteration in other humour.

In thalasthambam, yugi explains that the altered vali humour is aggravated by the excessive intake of salt and sour (i.e) these tastes acts as a pre-disposing factor for the disease.

The disease is characterized by the presence of heaviness of the foot, pain in the foot, blackening of the foot, spreading upwards from foot, weight loss, Dyspnoea, fatigue, dryness of the body, and thirst.

In this disease, the Udal thathukkal - Saram, Senneer, Oon, Kozhuppu, Enbu, Moolai are affected as 6 out of 7 udal thathukkal gets deranged the disease is not - curable.

The underlying pathogenesis for the Thalasthambam is the peripheral arterial occlusive disorder resulting in gangrene formation due to pan-arteritis leading to thrombosis as seen in “Thrombo Angitis obliterans”.

CONCLUSION

The study on Thalasthambam was carried out in this dissertation giving importance to the changes in udal Thaathukal , uyir thaathukal etc.,

The changes in the udal Thathukal and uyir thathukal were assessed by siddha parameters like ennvagai Thervugal, Poriyalarithal, Pulanalarithal and Vinathal and prognosis is assessed by Nei-Kuri.

A parallel modern diagnosis was arrived through routine blood tests, urine tests, stool examination and Doppler study of lower limb.

The study on Thalasthambam concludes that,

Thalasthambam is an **Peripheral arterial Occlusive diseases leading to gangrene formation like *Thrombo Angitis Obliterans (T.A.O)***

The pathogenesis of Thalasthambam involves the vitiation of Vali, Which disturbs the fuction of Azhal and Iyam in various degrees.

The signs of the disease is clearly depicted by the udal thaathukal.

It is essential to know the pathogenesis of the disease for early diagnosis and proper treatment and to prevent complication (amputation) and also to advise the patient to stop smoking and to avoid the excessive intake of salt and sour in diet.

P.G. -NOI NAADAL DEPARTMENT

GOVT. SIDDHA MEDICAL COLLEGE, PALAYAMKOTTAI.

A Study to Diagnose Thalasthambam through Siddha

Diagnostic Methodology

SELECTION PROFORMA

1.O.P.No _____ 2. I.P. NO _____ 3. Bed No: _____ 4. S. No: _____ 5.Date: _____

6. Name: _____ 7. Age (Years): 8. Sex: M F

9. Occupation: _____ 10. Income: _____/month

11. Address:

.....
.....
.....

12. Complaints and duration:

.....
.....
.....

13. History of present illness:

.....
.....
.....

14. Past history:

.....
.....
.....

15. Family History:

.....
.....
.....

Habits	1.Yes	2.No	
16. Betelnut chewer :	<input type="checkbox"/>	<input type="checkbox"/>	_____
17. Tea :	<input type="checkbox"/>	<input type="checkbox"/>	_____
18. Coffee :	<input type="checkbox"/>	<input type="checkbox"/>	_____
19. Tobacco chewer :	<input type="checkbox"/>	<input type="checkbox"/>	_____
20. Smoking :	<input type="checkbox"/>	<input type="checkbox"/>	_____
21. Alcohol :	<input type="checkbox"/>	<input type="checkbox"/>	_____
22. Food habits :	V <input type="checkbox"/>	NV <input type="checkbox"/>	M <input type="checkbox"/>

GENERAL ETIOLOGY FOR THALASTHAMBAVATHAM

	1.Yes	2.No	
23. Excessive intake of sour and salt	<input type="checkbox"/>	<input type="checkbox"/>	_____
24. Sleeping in day time	<input type="checkbox"/>	<input type="checkbox"/>	_____
25. Sleepdisturbance in night time	<input type="checkbox"/>	<input type="checkbox"/>	_____
26. Repeated starvation	<input type="checkbox"/>	<input type="checkbox"/>	_____
27. Increased obesity	<input type="checkbox"/>	<input type="checkbox"/>	_____
28. Increased smoking	<input type="checkbox"/>	<input type="checkbox"/>	_____
29. Increased intake of alcohol	<input type="checkbox"/>	<input type="checkbox"/>	_____

30. GENERAL EXAMINATION

30.Weight(kg)	<input type="text"/>	<input type="text"/>	<input type="text"/>
31.Temperature(°F)	<input type="text"/>	<input type="text"/>	<input type="text"/>
32.Pulse rate/minute	<input type="text"/>	<input type="text"/>	<input type="text"/>
33.Heart rate/minute	<input type="text"/>	<input type="text"/>	<input type="text"/>
34.Respiratory rate/minute	<input type="text"/>	<input type="text"/>	<input type="text"/>
35.Blood pressure(mmHg)	_____		

	1.Yes	2.No	
36.Pallor	<input type="checkbox"/>	<input type="checkbox"/>	_____
37.Jaundice	<input type="checkbox"/>	<input type="checkbox"/>	_____
38.Cyanosis	<input type="checkbox"/>	<input type="checkbox"/>	_____
39.Lymphadenopathy	<input type="checkbox"/>	<input type="checkbox"/>	_____
40.Pedal edema	<input type="checkbox"/>	<input type="checkbox"/>	_____
41.Clubbing	<input type="checkbox"/>	<input type="checkbox"/>	_____
42.Jugular venous pulsation	<input type="checkbox"/>	<input type="checkbox"/>	_____

VITAL ORGANS EXAMINATION

	1.Normal	2.Affected	
43.Heart	<input type="checkbox"/>	<input type="checkbox"/>	_____
44.Lungs	<input type="checkbox"/>	<input type="checkbox"/>	_____
45.Brain	<input type="checkbox"/>	<input type="checkbox"/>	_____
46.Liver	<input type="checkbox"/>	<input type="checkbox"/>	_____
47.Kidney	<input type="checkbox"/>	<input type="checkbox"/>	_____
48.Spleen	<input type="checkbox"/>	<input type="checkbox"/>	_____
49.Stomach	<input type="checkbox"/>	<input type="checkbox"/>	_____

SIDDHA SYSTEM OF EXAMINATION
ENNVAGAI THERVUKAL

NAA

50.Maa Padinthiruthal

1. Present 2. Absent

51.Niram

1. Karuppu 2. Manjal 3. Velluppu

52.Suvai

1. Pulippu 2. Kaippu 3. Inippu

53.Vedippu

1. Present 2. Absent

54.Vai neer ooral

1. Normal 2. Increased 3. Reduced

55.NIRAM

1. Karuppu 2. Manjal 3. Velluppu

56.MOZHI

1. Sama oli 2. Urattha oli 3. Thazhntha oli

VIZHI

57. Niram

1. Karuppu 2. Manjal

3. Sivappu 4. Velluppu

58. Kanneer

1. Present 2. Absent

59. Erichchal

1. Present 2. Absent

60. Peelai seruthal

1. Present 2. Absent

MEI KURI

61.Veppam

1. Mitham 2. Migu 3. Thatpam

62.Viyarvai

1. Normal 2. Increased 3. Reduced

63.Thodu vali

1. Present 2. Absent **MALAM**

64.Niram

1. Karuppu 2. Manjal 3. Sivappu 4. Velluppu

65.Sikkal

1. Present 2. Absent

66.Sirutthal

1. Present 2. Absent

67.Kalichchal

1. Present 2. Absent

68.Seetham

1. Present 2. Absent

69.Vemmai

1. Present 2. Absent **MOOTHIRAM****NEER KURI**

70.Niram

1. Venmai 2. Manjal 3. Crystal clear

71.Manam

1. Present 2. Absent

72.Nurai

1. Nil 2.Increased 3. Reduced

73.Edai(Ganam)

1. Normal 2. Increased 3. Reduced

74.Enjal(Alavu)

1. Normal 2. Increased 3. Reduced

75.NEI KURI

1. Aravam 2. Mothiram
3. Muthu 4. Aravil Mothiram
5. Aravil Muthu 6. Mothirathil Arava
7. Mothirathil Muthu 8. Muthil Arava
9. Muthil Mothiram 10. Asathiyam
11. Mellena paraval

NAADI(KAI KURI)

I. Naadi Nithanam

76. Kaalam

1. Kaarkaalam 2. Koothirkaalam
3. Munpanikaalam 4. Pinpanikaalam
5. Ilavenirkaalam 6. Muthuvenirkaalam

77. Desam

1. Kulir 2. Veppam

78. Vayathu

1. 1-33yrs 2.34-66yrs 3. 67-100yrs

79. Udal Vanmai

1. Iyalbu 2. Valivu 3. Melivu

80. Vanmai

1. Vanmai 2. Menmai

81. Panbu

- | | | | | | |
|----------------|--------------------------|--------------|--------------------------|---------------|--------------------------|
| 1. Thannadai | <input type="checkbox"/> | 2. Puranadai | <input type="checkbox"/> | 3. Illaitthal | <input type="checkbox"/> |
| 4. Kathithal | <input type="checkbox"/> | 5. Kuthithal | <input type="checkbox"/> | 6. Thullal | <input type="checkbox"/> |
| 7. Azhutthal | <input type="checkbox"/> | 8. Padutthal | <input type="checkbox"/> | 9. Kalatthal | <input type="checkbox"/> |
| 10. Munnokku | <input type="checkbox"/> | 11. Pinnokku | <input type="checkbox"/> | 12. Suzhalal | <input type="checkbox"/> |
| 13. Pakkanokku | <input type="checkbox"/> | | | | |

82. Naadi nadai

- | | | | | | |
|---------------|--------------------------|--------------|--------------------------|---------------|--------------------------|
| 1.Vali | <input type="checkbox"/> | 2. Azhal | <input type="checkbox"/> | 3.Iyam | <input type="checkbox"/> |
| 4. Vali Azhal | <input type="checkbox"/> | 5. Vali Iyam | <input type="checkbox"/> | 6. Azhal Vali | <input type="checkbox"/> |
| 7 Azhal Iyam | <input type="checkbox"/> | 8. Iya vali | <input type="checkbox"/> | 9. Iya Azhal | <input type="checkbox"/> |

83. MANIKKADAI NOOL (Viral Kadai Alavu)

IYMPORIGAL / IYMPULANGAL

- | | 1.Normal | 2.Affected | |
|-----------|--------------------------|--------------------------|-------|
| 84.Mei | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| 85.Vaai | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| 86.Kan | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| 87.Mookku | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| 88.Sevi | <input type="checkbox"/> | <input type="checkbox"/> | _____ |

KANMENTHIRIYANGAL / KANMAVIDAYANGAL

- | | 1.Normal | 2.Affected | |
|---------|--------------------------|--------------------------|-------|
| 89.Kai | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| 90.Kaal | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| 91.Vaai | <input type="checkbox"/> | <input type="checkbox"/> | _____ |

92. Eruvaai _____
 93. Karuvaai _____

94. YAAKAI

1. Vali 2. Azhal 3. Iyam
 4. Vali Azhal 5. Vali Iyam 6. Azhal Vali
 7. Azhal Iyam 8. Iya Vali 9. Iya Azhal

95. GUNAM

1. Sathuva Gunam 2. Raso Gunam 3. Thamo Gunam

UYIR THATHUKKAL

I. Vali

- | | 1. Normal | 2. Affected |
|---------------------------------|--------------------------|--------------------------------|
| 96. Uyirkkaal (Praanan) | <input type="checkbox"/> | <input type="checkbox"/> _____ |
| 97. Keelnokkukkaal (Abaanan) | <input type="checkbox"/> | <input type="checkbox"/> _____ |
| 98. Paravukaal (Viyaanan) | <input type="checkbox"/> | <input type="checkbox"/> _____ |
| 99. Melnokkukkaal (Udhaanan) | <input type="checkbox"/> | <input type="checkbox"/> _____ |
| 100. Nadukkaal (Samaanan) | <input type="checkbox"/> | <input type="checkbox"/> _____ |
| 101. VaanthikKaal (Naahan) | <input type="checkbox"/> | <input type="checkbox"/> _____ |
| 102. Vizhikkaal (Koorman) | <input type="checkbox"/> | <input type="checkbox"/> _____ |
| 103. Thummikkaal (Kirukaran) | <input type="checkbox"/> | <input type="checkbox"/> _____ |
| 104. Kottavikkaal (Devathathan) | <input type="checkbox"/> | <input type="checkbox"/> _____ |
| 105. Veengukkaal (Dhananjeyan) | <input type="checkbox"/> | <input type="checkbox"/> _____ |

II. Azhal

- | | 1. Normal | 2. Affected |
|---------------------------------|--------------------------|--------------------------------|
| 106. Aakkanaal (Anala pitham) | <input type="checkbox"/> | <input type="checkbox"/> _____ |
| 107. Ollolithe (Prasaka pitham) | <input type="checkbox"/> | <input type="checkbox"/> _____ |
| 108. Vannaeri (Ranjaka pitham) | <input type="checkbox"/> | <input type="checkbox"/> _____ |

- | | | | |
|----------------------------------|--------------------------|--------------------------|-------|
| 109.Nokkazhal (Aalosaka pitham) | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| 110.Aatralangi (Saathaka pitham) | <input type="checkbox"/> | <input type="checkbox"/> | _____ |

III. Iyam

- | | 1. Normal | 2. Affected | |
|------------------------------|--------------------------|--------------------------|-------|
| 111.Aliiyam (Avalambagam) | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| 112.Neerppiyam (Kilethagam) | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| 113.Suvaikaaniyam (Pothagam) | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| 114.Niraiuvuiyam (Tharpagam) | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| 115.Ondriiyam (Santhigam) | <input type="checkbox"/> | <input type="checkbox"/> | _____ |

UDAL THATHUKKAL

- | | 1. Normal | 2. Affected | |
|--------------------------|--------------------------|--------------------------|-------|
| 116.Saaram | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| 117.Senneer | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| 118.Oon | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| 119.Kozhuppu | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| 120.Enbu | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| 121.Moolai | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| 122.Suronitham/ Sukkilam | <input type="checkbox"/> | <input type="checkbox"/> | _____ |

MUKKUTRA MIGU GUNAM

- | I. Vali Migu Gunam | 1. Present | 2. Absent |
|--------------------------------------|--------------------------|--------------------------|
| 123.Emaciation | <input type="checkbox"/> | <input type="checkbox"/> |
| 124.Blackish colouration of the body | <input type="checkbox"/> | <input type="checkbox"/> |
| 125.Desire to take hot food | <input type="checkbox"/> | <input type="checkbox"/> |
| 126.Tremors | <input type="checkbox"/> | <input type="checkbox"/> |

127. Abdominal distension	<input type="checkbox"/>	<input type="checkbox"/>
128. Insomnia	<input type="checkbox"/>	<input type="checkbox"/>
129. Weakness	<input type="checkbox"/>	<input type="checkbox"/>
130. Weakness of sense organs	<input type="checkbox"/>	<input type="checkbox"/>
131. Giddiness	<input type="checkbox"/>	<input type="checkbox"/>
132. Sluggishness	<input type="checkbox"/>	<input type="checkbox"/>
133. Constipation	<input type="checkbox"/>	<input type="checkbox"/>

II. Azhal Migu Gunam

1. Present

2. Absent

134. Yellowish discolouration of the skin	<input type="checkbox"/>	<input type="checkbox"/>
135. Yellowish discolouration of the eye	<input type="checkbox"/>	<input type="checkbox"/>
136. Yellowish discolouration of urine	<input type="checkbox"/>	<input type="checkbox"/>
137. Yellowish discolouration of faeces	<input type="checkbox"/>	<input type="checkbox"/>
138. Increased appetite	<input type="checkbox"/>	<input type="checkbox"/>
139. Burning sensation in the body	<input type="checkbox"/>	<input type="checkbox"/>
140. Insomnia	<input type="checkbox"/>	<input type="checkbox"/>

III. Iyam Migu Gunam

1. Present

2. Absent

141. Excessive salivation	<input type="checkbox"/>	<input type="checkbox"/>
142. Eraippu (dyspnoea)	<input type="checkbox"/>	<input type="checkbox"/>
143. Heaviness of the body	<input type="checkbox"/>	<input type="checkbox"/>
144. Whiteness of the body	<input type="checkbox"/>	<input type="checkbox"/>
145. Chillness of the body	<input type="checkbox"/>	<input type="checkbox"/>
146. Reduced appetite	<input type="checkbox"/>	<input type="checkbox"/>
147. Cough	<input type="checkbox"/>	<input type="checkbox"/>

148.Increased sleep

149.Sluggishness

150.NOI UTRA KAALAM

- | | | | |
|------------------|--------------------------|--------------------|--------------------------|
| 1. Kaarkaalam | <input type="checkbox"/> | 2. Koothirkaalam | <input type="checkbox"/> |
| 3.Munpanikaalam | <input type="checkbox"/> | 4.Pinpanikaalam | <input type="checkbox"/> |
| 5.Ilavenirkaalam | <input type="checkbox"/> | 6.Muthuvenirkaalam | <input type="checkbox"/> |

151.NOI UTRA NILAM

- | | | | | | |
|-----------|--------------------------|----------|--------------------------|------------|--------------------------|
| 1.Kurinji | <input type="checkbox"/> | 2.Mullai | <input type="checkbox"/> | 3.Marutham | <input type="checkbox"/> |
| 4.Neithal | <input type="checkbox"/> | 5.Paalai | <input type="checkbox"/> | | |

152.Date of Birth

153.Time of Birth

154.Place of Birth

155.NATCHATHIRAM

- | | | | | | |
|----------------|--------------------------|------------------|--------------------------|-----------------|--------------------------|
| 1.Aswini | <input type="checkbox"/> | 2.Barani | <input type="checkbox"/> | 3.Karthikai | <input type="checkbox"/> |
| 4.Rohini | <input type="checkbox"/> | 5.Mirugaseeridam | <input type="checkbox"/> | 6.Thiruvathirai | <input type="checkbox"/> |
| 7.Punarpoosam | <input type="checkbox"/> | 8.Poosam | <input type="checkbox"/> | 9.Aayilyam | <input type="checkbox"/> |
| 10.Makam | <input type="checkbox"/> | 11.Pooram | <input type="checkbox"/> | 12.Utthiram | <input type="checkbox"/> |
| 13.Astham | <input type="checkbox"/> | 14.Chithirai | <input type="checkbox"/> | 15.Swathi | <input type="checkbox"/> |
| 16.Visakam | <input type="checkbox"/> | 17.Anusam | <input type="checkbox"/> | 18.Kettai | <input type="checkbox"/> |
| 19.Moolam | <input type="checkbox"/> | 20.Pooradam | <input type="checkbox"/> | 21.Utthiradam | <input type="checkbox"/> |
| 22.Thiruvonam | <input type="checkbox"/> | 23.Avittam | <input type="checkbox"/> | 24.Sadayam | <input type="checkbox"/> |
| 25.Poorattathi | <input type="checkbox"/> | 26.Utthirattathi | <input type="checkbox"/> | 27.Revathi | <input type="checkbox"/> |
| 00.Not known | <input type="checkbox"/> | | | | |

156.RAASI

- | | | | | | |
|--------------|--------------------------|--------------|--------------------------|------------|--------------------------|
| 1.Mesam | <input type="checkbox"/> | 2.Rishabam | <input type="checkbox"/> | 3.Midhunam | <input type="checkbox"/> |
| 4.Kadakam | <input type="checkbox"/> | 5.Simmam | <input type="checkbox"/> | 6.Kanni | <input type="checkbox"/> |
| 7.Thulam | <input type="checkbox"/> | 8.Viruchiham | <input type="checkbox"/> | 9.Dhanusu | <input type="checkbox"/> |
| 10.Maharam | <input type="checkbox"/> | 11.Kumbam | <input type="checkbox"/> | 12.Meenam | <input type="checkbox"/> |
| 00.Not known | <input type="checkbox"/> | | | | |

INVESTIGATION

BLOOD

- 157.TC (Cells/cumm) :
- 158.DC (%) : 1.P 2.L 3.E
4.B 5.M
- 159.Hb (gms%) :
- 160.E.S.R. (mm/hr) : 1.1/2hr 2.1hr
- 161.Blood Sugar (R) (mgs%) :

URINE

162. Albumin	:	0. Nil	<input type="checkbox"/>	1. Trace	<input type="checkbox"/>	2. +	<input type="checkbox"/>
		3. ++	<input type="checkbox"/>	4. +++	<input type="checkbox"/>		
163. Sugar	:	0. Nil	<input type="checkbox"/>	1. Trace	<input type="checkbox"/>	2. +	<input type="checkbox"/>
		3. ++	<input type="checkbox"/>	4. +++	<input type="checkbox"/>		

Deposits	1. Yes	2. No	
164. Pus cells	<input type="checkbox"/>	<input type="checkbox"/>	_____
165. Epithelial cells	<input type="checkbox"/>	<input type="checkbox"/>	_____
166. RBCs	<input type="checkbox"/>	<input type="checkbox"/>	_____
167. Crystals	<input type="checkbox"/>	<input type="checkbox"/>	_____

MOTION TEST

	1. Yes	2. No	
168. Ova	<input type="checkbox"/>	<input type="checkbox"/>	_____
169. Cyst	<input type="checkbox"/>	<input type="checkbox"/>	_____
170. Occult blood	<input type="checkbox"/>	<input type="checkbox"/>	_____

171. Doppler study:

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.....

.....

.....

CLINICAL FEATURES OF THALASTHAMBAVATHAM:

	1. Present	2. Absent
172.Heaviness of the foot	<input type="checkbox"/>	<input type="checkbox"/> _____
173.Pain in the foot	<input type="checkbox"/>	<input type="checkbox"/> _____
174.Blackening of the foot	<input type="checkbox"/>	<input type="checkbox"/> _____
175.Spreading upwards from foot	<input type="checkbox"/>	<input type="checkbox"/> _____
176.Exessive thirst	<input type="checkbox"/>	<input type="checkbox"/> _____
177.Dryness of the body	<input type="checkbox"/>	<input type="checkbox"/> _____
178.Dyspnoea	<input type="checkbox"/>	<input type="checkbox"/> _____
179.Fatigue	<input type="checkbox"/>	<input type="checkbox"/> _____
180.Weight loss	<input type="checkbox"/>	<input type="checkbox"/> _____

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