A STUDY ON
SANTHU VATHAM
(DISERTATION SUBJECT)

For the Partial fulfillment of
the requirements
to the Degree of
DOCTOR OF MEDICINE (SIDDHA)

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Introduction
INTRODUCTION

Pura naanuru Quoting, Tamilans are the ancient people than others while Tamil groups Siddha system of medicine had also flourished in a very sophisticated manner.

In the past, this system of medicine had been bestowed by our great spiritual scientists called siddhars to the human society. One who developed “Siddhi” are called “Siddhars”. “Siddhi” means a perfect and purified life. If any body attained siddhi there should be perfect and purified life.

According to Siddha system our human body is made up of pancha puthams. It leads to 96 thathuvams. Moreover, the entire universe is also made up of pancha puthams. So any change in the cosmos will reflect in the human body. This was quoted in Sattamuni Gnanam by Sattamuni as follows.

“அல்லங்கையும் ஏனியங்கையும் பொருள்களும் அல்லங்கையும் ஏனியங்கையும் அல்லங்கையும் பொருள்களும் அல்லங்கையும் ஏனியங்கையும் பொருள்களும் அல்லங்கையும் ஏனியங்கையும் பொருள்களும் அல்லங்கையும் ஏனியங்கையும் பொருள்களும் அல்லங்கையும் ஏனியங்கையும் பொருள்களும் அல்லங்கையும் ஏனியங்கையும் பொருள்களும் அல்லங்கையும் ஏனியங்கையும் பொருள்களும் அல்லங்கையும் ஏனியங்கையும் பொருள்களும் அல்லங்கையும் ஏனியங்கையும் பொருள்களும் அல்லங்கையும் ஏனியங்கையும் பொருள்களும்

- கலல்பிரியின்

The whole body is governed by the three vital forces or humours called Thrithathus namely vatham, pitham and Kapham, held in the ratio 1 : ½ : ¼ respectively. If these thathuss are provoked by any external and internal factors, it will result as diseases. At this condition these thathuss are called Thridhosas or Thridhodam.

Vatham is formed by Air and space
Pitham is formed by fire
Kapham is formed by Earth and water.
Moreover, the diseases can be formed due to changes in the mind also. Mind is influenced by various stresses in our day-to-day life. But Siddhars quoted very anciently that many of the diseases were caused by psychosomatic problems. So that they had advised to control one’s mind to get rid of stress. This was quoted by Agasthiyar as follows.

“மனைவு சமந்தராக வேளில் விளிம்பு வந்து இருந்து மனிதியுடைய மருத்துவம் மாற்றும் வழி என்று அமைது
மனைவு சமந்தராக வேளில் விளிம்பு வந்து இருந்து மனிதியுடைய மருத்துவம் மாற்றும் வழி என்று அமைது”
- காகசர் மேல்

Siddhars classified the diseases into 4448. Siddhars diagnosing the diseases by means of envagai thervu, which includes naadi etc, neerkuri and neikuri, the ‘precise diagnostic tool’ of siddhars. The treatment aspect involves the neutralisation of affected humours.

“மருத்துவத்தில் மாறு கறுப்பு”
“மருத்துவத்தில் பிஞ்சு கறுப்பு”
“மருத்துவத்தில் குழு கறுப்பு”
- ஒருவர் கல்வு ஒருவர் உருவாக்கம் பாடல் - I.

By giving viresanam (purgatives), vatha kutram is neutralised. By giving vamanam (emetics), pitha kutram is neutralised. By giving Anjanam and Nasiyam (application of medicine in the eyes and nose), Kapha Kutram is neutralised.

The unique feature of Siddha medicine is the removal of the root cause of the disease and giving remedy for mind and soul. Siddhars have enumerated ways that are to be followed to maintain the body without being affected by any disease and to maintain sound mind which are called Karpamuraigal.
“Medicine” is defined as one which removes distress and leads an individual to perfect happiness.

From the above quoting, it is ideal to choose herbals initially, if no improvement then parpam and chenduram are to be used.

Among the 80 types of vatha disease, the Author has selected the “Santhu Vatham” for his research subject.

According to this study, “Santhu Vatham” is correlated with “Arthritis” in modern medicine.

Arthritus means ever increasing pain and stiffness with ever decreasing physical competence, bodily joy and ease. When more than one joint involved it is known as “oligo Arthritis” and “Poly Arthritis”.

Thorough knowledge of important aspects of this disease in Siddha and modern concepts namely the aetiology, pathology, symptomatology and biochemical mechanisms will be helpful to conduct the study with perfect understanding.

The Author has selected “Ichchura Mooli Choornam” as internal medicine and “Ervatha thylam” as external medicine for research. The reason for choosing above medicines is their efficacy mentioned in siddha therapeutics and the easily available ingredients.

The Author believe that the dissertation work might arise new horizons in their field especially in the treatment of “Santhu vatham”.

3
Aim and Objectives
AIM AND OBJECTIVES

The disease “Santhu Vatham” produce tremendous pain, discomfort and more complications to the patients. The main objective of the present study is to create an awareness about the siddha field and to highlight the efficacy of siddha drugs among the public. With this basic intention in mind the following specific objectives have been undertaken.

- To collect various siddha literatures and modern text books as literal evidences regarding the disease “Santhu Vatham”.
- To expose the talent of siddhars in diagnostic principle, to know how the disease Santhu vatham alters the normal conditions under the topic Mukkutram, Poripulangal, Udal Kattugal and envagai thervugal.
- To study the clinical course of the disease “Santhu vatham” with keen observation on aetiology, pathology, diagnosis, prognosis, complications and the treatment by making use of Siddha concept.
- To know the extent of correlation of aetiology, classification, signs and symptoms of “Santhu Vatham” in Siddha aspect with “polyarthritis” in modern science.
- To have an idea of an incidence of “Santhu Vatham” with reference to Age, Sex, Socio-economic Status, habits, family history and climatic conditions.
- To have a detailed clinical investigations.
• To have a clinical trial on “Santhu Vatham” with “Ichchura Mooli Choornam” internally and “Erivatha thylam” externally.

• To evaluate the biochemical and pharmacological effects of the trial medicines.

• To use modern parameters to confirm the diagnosis and prognosis of the disease.

• To study the importance of thokkanam, exercises along with the administration of external and internal medicines.

• To have a plan for further studies on this disease.
ABSTRACT

The author had chosen the disease “Santhu Vatham” for his dissertation subject, because it is one of the disorders, which affects the individuals in higher incidence. It is increased occurrence in recent times.

Twenty In Patients and Twenty Out Patients of either sex had been selected by the author and they were administered with the trial medicines, Ichchura Mooli Chooranam 1-2gms bd with Hot water internally and Erivatha Thylam externally. The trial medicines are subjected to bio-chemical and pharmacological analysis.

At the end of the trial study 35% of In Patients showed good clinical improvement and 60% of In Patients showed fair clinical improvement and 5% of In Patients showed poor clinical improvement. 30% of Out Patients showed good clinical improvement, 55% of Out Patients showed fair clinical improvement and 15% of out patients showed poor clinical improvement.
Review of Literatures
Siddha Aspect
LITERATURE SURVEY
SIDDHA ASPECTS

Definition of Vatham:

Among the five elements (Panchapoothas) vatha is formed by the vayu and akash. This is one of the three humours (vatha, pitha, kapha). The two other dhosas are set in motion by the vatha. In a healthy man the existence of three humours are in the ratio of 1:½:¼ respectively. This ratio is altered when there is a disturbance to the vatha by environmental factors, diet, habits etc., vatha may be increased or decreased. When the equilibrium state is disturbed, vatha is altered, the other two also altered and leads to vatha disease.

Formation:

“அவ்வாறு நாய மரம் சம்பார்ப்பிக்கப்பட்டு
ஞாயிற்றும் நாய சுழற்சிக்கு
பெரிய நீர் வெளிப்பட்டு வருகிறது
தக்கை வாக்குத்தரியின் கால் காணப்பட்டன
ஏன் வாக்கு வந்துள்ளது” - பாசி சீன்காணி

“ஞாயிற்றும் நாய சுழற்சிக்கு
பெரிய நீர் வெளிப்பட்டு வருகிறது
நாய வாக்குத்தரியின் கால் காணப்பட்டன
ஏன் வாக்கு வந்துள்ளது” - சியாரு பாலை சியாரு கிஸ்காலை

“மனுக்கு கௌரிக் கௌரிக் வரை பலறு
செற்று பெரியகாலம் பொருட்களை - பாரி
நாயால் முன்னால் கால் பெரும்.சுைத்தியின் போனி
வானம் சுைத்தியினையும் நுழை”

“மனுக்கு கௌரிக் கௌரிக் வரை பலறு
செற்று பெரியகாலம் பொருட்களை - பாரி
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வானம் சுைத்தியினையும் நுழை” - கால்கைத்தியை
According to this the human body is composed of 72,000 naadi narambukal. Among this 72,000 the ten are prominent naadies (Dasa naadies). Of these ten naadies, Idagalai, pingalai and suzhumunai are known as moolathara naadies.

Among the ten vayus five are more important. They are piranan, abanan, viyanan, uthanan and samanan.

Abanan in conjunction with idagalai to produce vatha.

Piranan in conjunction with pingalai to produce pitha and samanan in conjunction with suzhumunai to produce kapha.

These three humours or thadhus, ie., vatha, pitha and kapha are the functional principles in the composition and substance of the body.

**Locations:**

Vatham lives in,

- Abanam
- Stools
- Idakalai
- Undhiyin keezh moolam
• Kaamakodi
• Hip bone
• Skin
• Nerves
• Joints
• Hair follicles and
• Muscles

**Natural properties of vatham:**

Physiologically,

• Giving briskness
• Inspiration and expiration
• Functioning the mind, thoughts and body
• Regulation of the fourteen physiological reflexes (Vegams)
• Uniform function of the seven udal kattugal
• Protection and
• Strengthening of the five sensory organs.

**Agonist qualities of vatham:**

Normal qualities of vatha are,

• Dry
• Cold
• Subtle
• Rough
• Unstable
• Light
**Antagonist qualities of vatham:**
- Unctuous
- Hot
- Solid
- Soft
- Stable
- Heavy

**Signs of Hypervatham:**
- Constipation
- Abdominal disturbances
- Fatigue
- Depression of sense organs
- Giddiness
- Incoherent speech
- Rigors
- Insomnia
- Fond of eating hot food items
- Emaciation of body with blackish discolouration
- Loss of vigour.

**Signs of Hypovatham:**
- Vague pain all over the body
- Low-pitched voice.
- Difficulty to do any work
- Reduction of intelligence
- Syncope
- Symptoms of hyperkapha
Relationship between vatham and suvai:

Aggravating tastes:

“பாதிக்கும் திகழ்ந்துள்ள பாரும்பதிக் தேவனத்தான்

தன் பார்க்கவும் புரியவும் பிரிக்கவும் கிடை - கிருட்டிகையிலும்

நாகப்பிசந்த நாகரிக்க நாயமின்றி தொல்புறு

நூற்றுணர் விதரலுக்குடே”

- காண்கையாம்

According to this poem the sour and astringent tastes increase the vatha humour.

Neutralising tastes:

“மைய் முன்னிட்டு மூடும் பரிபுத்து

தொடர்ந்து செவ்வு சேர்ந்து - குற்றிகையிலும்

நார் நாகக்குத்து நாயமின்றி தொல்புறு

நூற்றுணர் விதரலுக்குடே”

- காண்கையாம்

According to this above poem sweet, salt and sour can neutralise the vitiated vatha humour.

Normal Signs (Thannilai):

It is defined as the state of normal character of tridosham. But under pathological condition, the three thathus can be changed in the following aspect.

For eg: vatha is normal in Koothirkalam.
Aggravation signs (Thanilai valarchi):

It is defined as provocation of any humour in its own position (primary)

Signs:

Rejecting the agonist characters. Adopting the antagonist characters.

For eg: vatha is aggravated in the mudhuvenil kaalam.

Displacement of Aggravation (Vetrutwikai valarchi):

Provoked tridhosas can be aggr avated and displaced from its own position to the other.

Signs:

The humours can be provoked and its features are reflected in the seven Udal Kattugal.

For eg: vatha can be aggravated and displaced in kaarkaalam.

Fate of three humours:

"அமர்சிதம் மறைந்தாலைகினை பிணைத்து நில வைக்கு நிலைகினை பிணைத்தாலம் நில்கும் நிலைகினை வகையில் வந்துள்ளாலும் தறாக் தேசிக்கு முடியாது மறைந்தாலைகினை" - சித்தாண்ட.

From the above quoting, it is clear that the three humours can be discharged through the following routes.

- Vatha: Faeces
- Pitha: Urine
- Kapha: Semen / suronitham
Classification of vatham:

Vatha can be classified into ten types. This has been said in Yu gimuni 800 as follows,

“அகர்சம் பரந்துள்ள பகுதியான வியாசம்
பூச்சிக்க புரட்சியிட்டு செய்த வாகம்
மூகம் பாதுகாப்பு விகரிப்பாய்
சேது குற்ற சூட்டு கற்கு வழக்கம்”

- புரி சாந்திய சீர்காணம்.

- Piranan
- Abanan
- Viyanan
- Samanan
- Nagan
- Udhanan
- Koorman
- Kirugaran
- Devadhaththan
- Dananjeyan

Each one is responsible for various actions within the body.

1. Piranan: (Heart Centre)

It refers to the chest and it regulates the respiratory system and helps the digestive system.
2. Abanan : (Muladhar Centre)

The type of vaatha corresponds to the pelvic and it is the seat of kundalini energy and controls excretions such as sweating, evacuation of stools, ejaculation of sperms, micturition, menstruation and parturition. (delivery of child).

Abana vaayu is one of the 14 physiological reflex actions (Vegas) of the body. When its expulsion is partially or completely obstructed it leads to diseases like vaayu gunmam, kudal vatham, vali vaatham.

3. Udhanan : (Throat Centre)

This corresponds to the pharyngeal plexus in the throat region and controls breathing and speech. It is also responsible for the physiological reflex actions like vomiting, hiccough, cough etc.

4. Vyanan :

It helps in the circulation of energy through the entire nervous system and helps in the movement of various parts of the body. It is responsible for the recognition of various sensations.

5. Samanan : (Navel Centre)

This corresponds to the solar plexus etc. by balancing the other vayus, the six tastes, water and food. If any one of the vaayus gets affected, this samanan is also affected.
6. Naagan :

It is responsible for the intelligence of an individual. It helps in learning different arts, singing of good songs etc. It is responsible for blinking, opening of eyes and eye-brow raising.

7. Koorman :

This is responsible for yawning, closing of mouth, yielding strength and also blinking. It helps in closing and opening of the eyes and shedding of tears. It is responsible for the vision.

8. Kirukaran :

It is responsible for the salivation in the oral cavity and mucous secretion in the nasal cavities. It is responsible for good appetite. It helps in meditation. It produces cough and sneeze.

9. Devadhatthan :

It is responsible for the laziness and also lassitude while waking up. It helps in the movements of the eyeball in various directions. It is responsible for begging, quarrelling, arguing etc., and also for much anger.

10. Dhananjeyan :

It is responsible for the swelling all over the body. It produces sensation of roaring like the sea in the ears. It leaves the body by blowing up the cranium on the 3rd day after death.
Classification of Vatha Diseases:

In classification we can find different views regarding the number. In *Yugi Vaithya Chinthamani*, Yugi says.

“நான்கு வாத்தா கால்பந்து”

While ending a verse describing the names of the types of vatha, Yugi again says the number as 80.

“But in the concluding section of the Yugi Vaithya Chithamani, the number of vatha diseases has been given as 84.

“ஆறு வாத்தா கால்பந்து பல வாத்தா கால்பந்து கண்டு கால்பந்து”

But “Siddha Maruthuvam” says the number as 85. While in description and in the following books as,

*Astanga sangiraham*

*Noi nadal noi muthual naadal – part II*

*Thanvanthri vaithyam and in Jeeva Rakshamirtham,*

The vatha disease is classified in to 80 types.

In *Agasthiar 2000,*

“என்பரு வாத்தா கால்பந்து பல்கு கால்பந்து கண்டு கால்பந்து பல்கு கால்பந்து கண்டு கால்பந்து கண்டு கால்பந்து மறுக்காய்! மறுக்காய் கால்பந்து”

ie, 40 types of vatha disease are in the upper half and 40 in the lower half of the body and the total number is 80.
Signs and Symptoms of Vatha Disease:

- Pricking pain
- Dull pain
- Aching pain
- Tremors
- Palpitation
- Spasm
- Dryness or dehydration
- Dislocation of joints
- Weakness of the body
- Paralysis
- Constipation
- Oliguria
- Excessive thirst
- Astringent taste predominantly in the mouth
- Excretions like stools, urine, lacrimation, sweat, becomes black in colour.

Piniyari Muraimai:

Diagnostic methods adopted in siddha system of medicine are formed as “Piniyari Muraimai”. It is based on the following principles,

- Poriyal arithal
- Pulanal arithal
- Vinathal
Pori and pulan are the five organs of perceptions and their senses respectively. Nose-Smell, Tongue-taste, Eyes-Vision, Ears & Skin-Auditory & touch. Porigal of patient and Doctor are used by the physician as instruments.

Vinathal is a method of enquiring about the details of patient’s complaints from his own words or from their attendant.

The above mentioned principles can be compared to that of interrogation and inspection, percussion & palpation, auscultation.

The important method adopted to diagnose the disease is by means of “Envagai Thervugal”.

“நாதிக்குறுஞ்சு ஆலநின்சு பாலைசு வருகையுடன் பாண்டியால் வண்டியின் வீட்டிற்கு வரும் பொடிகு விளையாட முடிகின்றது பொன்று பாது கையாளை மராத்தி பாது சுந்தரமான மருந்துத்தல் தனியான் பாது வரும் செவ்வின் விளையாட முடிகின்றது பாது சுந்தரமான மருந்துத்தல் தனியான் பாது வரும் செவ்வின் விளையாட முடிகின்றது பாது சுந்தரமான மருந்துத்தல்

- அகத்தியான கானலில் 600.

Envagai thervugal Includes :

Naadi, sparisam, naa, niram, mozhi, vizhi, malam, moothiram.
The fact regarding envagai thervugal suggests that it is mostly used method of diagnostic standard in siddha system and more concentration should be given to get proficient knowledge.

**Naadi – (Pulse) :**

"அமர்டுங்க வருளுவு ஒருங்க காலம் அப்படு வருள் முக்குறியை காண்பித்து கி கி மேல் காண்பித்து வந்து கிளியார் காண்பித்து காண்பித்து” - அகிலின் ரூகில் குருகை

Vitiated vatha causes difficulty in walking or impaired function of lower extremities. The examination of naadi has been recognised as one of the principle means of diagnosis and prognosis of disease from times immemorial.

**Sparisam (Skin) :**

Skin examination can be made out by touch and reveals about warmness / chillness / dry / weeping skin / rough / smooth / soft / hard, tenderness or presence of ulcers, swelling, wrinkles, hair, pigmentation etc.,

**Naa – Tongue :**

The colour, character and condition of the tongue changes according to the changes in mukkutram.

**Niram (Colour) :**

As vaatha is the root cause the colour of the patient’s skin, tooth, etc., should be dark or black in colour.

**Mozhi (Speech) :**

Speech in vatha patients may vary according to the deranged Dhosas and grade of the disease.
Vizhi (Eye):

In the diseased condition both motor and sensory disturbances of the eye can be expected. Burning of the eyes, lacrimation, irritation, colour changes are also noticed under this group.

Malam (Stools):

In vatha diseases stools should look in colour with constipation.

Moothiram (Urine):

“ஒலிங்கு நின்று காசாங்கின்
முதலாமும் உட்புகா பாண்டியின்”
- அரசியம் தொழ.

Its examination regarding

Neerkuri:

- Niram – colour of the urine.
- Manam – smell of the urine.
- Edai – specific gravity of the urine.
- Nurai – frothy nature of the urine voided.
- Enjal – indicates the quantity of the urine voided.

Neikuri:

“அந்தார் கருத்துறை அறிவுக் குரும்
ஏன் அவர் அவருடன் குறிப்பிட்டு
குறிப்பிட்டு கூறுங்கேற்று
அன்றியுள்ள கருத்துறை குரு அவ்
சாத்தாசாசாசாசாசாசாசாசாசாசாசாசா
புனர் அவருடன் திருப்புங்கேற்று கூறுங்கேற்று
- சித்தோம்
Method:

Prior to the day of urine examination the patient is advised to take balanced diet and the quantity of food must be proportionate to his appetite and he should have a good sleep. After waking up in the morning, urine voided first, was collected in a glass container and was subjected to analysis with in 1½ hours. A drop of gingelly oil is dropped without shake, the nature of the Neikuri should be noticed in direct sunlight.

Character of different neer:

"அருமாய துணைப்பொத்தை உயர்ந்தம்"

When the oil drop spreads like a snake, it indicates vathaneer,

"எதுறுப்புவழித்தான் ஆய்வு மிக்கம்"

If the oil drop spreads like a ring, it indicates pitha neer.

"மஞ்சளை நீரொலின் உருவமுற்றத்தும்"

If the oil drop remains as that of pearl, it indicates kapha neer.

Along with the above mentioned eight types of examination another principle in siddha medicine, the man is composed of 5 elements like universe.

"அன்னேற்ற குன்றாயம் பிள்ளை: பிள்ளைகளின் கைப்பாறை ஆலம்: ஆலம்பன் பிள்ளையார்ம் உருவங்கு: உருவங்கள் பாறாக்கும் உருவத்தும்"

- பெருநில கால்வா
Time, place, nature of body (pirakiruthi) and environmental change have interrelations among them.

So besides envagai thervugal, paruva kalangal and Thinai also should be taken in consideration to arrive the perfect and correct diagnosis.

**Thinai (Land and Place):**

The geographical distribution of the land is classified into five regions.

- Kurinji - Mountain and its surroundings
- Mullai - Forest and its surroundings
- Marutham - Field and its surroundings
- Neithal - Sea and its surroundings
- Paalai - Desert and its surroundings

Each region has its own characters, which influences the inhabitants, physical, mental, economic, occupational and cultural activities. In each region some ailments are endemic based on the climatic conditions. Accordingly, vaatha diseases are common in neithal nilam. Palai nilam – common places for all types of diseases. Marutha nilam – is good for all types of treatment and health.

**Neithal Nilam:**

“அன்றான சுமாராமல பெரும்பாட் தோழிலங்கா
முன்னாள் விளக்கால் மிக்கம் - அண்மைகு”
- புரோந்தாக தலை சாதாரணமா

**Paalai Nilam:**

“மாருத மீனில் வாலிலின்விவேகம் மிக்கம்”
- புரோந்தாக தலை சாதாரணமா
Marutha Nilam:

“வெங்களின வசதியான குடும்பக்குடும்பர்கள் காலங்களில் புராணக்குடும்பர்கள் காலம் - குருக்கள் குண்டின் தவ முதிருவோரை பாதுகாப்பாக செய்து வெளியுள்ளன.”

- பந்தியா கொலி சித்தம்பலி

Kalam:

Generally speaking medicine was formed upon the particular country’s individual and special aspect, in the same way siddha medicine is based on southern peninsula’s (the cradle of human race), civilization, culture and climatic changes. According to siddha system the year is divided into six seasons with reference to the position of earth and sun.

- Kaarkalam - August, September
- Koothirkalam - October, November
- Munpanikalam - December, January
- Pinpanikalam - February, March
- Ilavenilkalam - April, May
- Muduvenilkalam - June, July

In every season, changes will occur in the land, water, plants, animals and human beings, which will change human body, vital humour and affect udalthathukkal and make them susceptible to certain specific diseases likely to occur in that season.

Muthuvenil paruvam:

“புராணக்குடும்பம் புராணக்குடும்பம் பரவலாக குன்று விரைவில் விளைவு - குருக்கள் முதுகையில் வாழ்க்கையை வருங்காக கூட்டும் வெளியே செய்து வெளியுள்ளன.”

- பந்தியா கொலி சித்தம்பலி
Kaarkalam:

“அனைத்தில் குரு குன்றாக விளங்கும் காலங்களுக்கு நேரான சூழ்மையும் நூற்றாண்டு பாலத்தன்மை – காரை வாடிக்கை நில வாழை விளங்கும் நூற்றாண்டும் நேரான சூழ்மையும்”

- வாழை விளிப்பான்.

These above mentioned poems stated that the kaar and koothir kalam are seasons for vatha diseases.

Udalvanmai:

It means strength and vitality of the body. It is classified into three types.

- Eyarkai vanmai - Inherited immunity
- Kaala vanmai - Age, season and time
- Seyarkai vanmai - Improvement of 3 vitality obtained by diet, day-to-day habits and physical exercises.
SANTHUVAETHAM

Santhuvatham is one of the vaatha diseases, which is described in “Yugi Vaithya Chinthamani”.

**Definition:**

The term Santhuvatham denotes all kinds of joint disease caused by the derangement of one of the uyirthathus “Vatham”.

In the same literature it is mentioned such type of joint disease as megasoolai under the chapter of “Soolai Noikal”. In some other literatures, Santhu Vatham was mentioned in different names as Santhuvali, mooottuvali, megasoolai, mudakkuvaaayu, Ama vaatham, Keelvayu.

- **Siddhamaruthuvam**

Santheegasileshmarogam, Santhu Vatham, Soolaikattu, Vatha Soolai, Vayu rogam.

- **Vaidya Sara Sangiraham**

In Vaidya Sarasangiraham, alias Agasthiyar Vaidhya Kaviyam, Agasthiyar Gunavahada Thirattu and Thirumoolar karukkidai Vaidhyam 600, Santhu Vatham was explained in the name of Soolai, because of excruciating pain caused by such diseases.

Since it causes pain in the Santhu or Moottu, it is called as mooottuvali or Santhuvali.

Restriction of movements and in some cases even immobility of the joints can occur, so it may be named as Mudakkku Vaayu or Mudakku Vaatham.
Thus the terms of this disease are named according to the cause, derangement of the Uyirthathu, Kurikunam, site of lesion, complication etc.

**They are as follows:**

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<td><strong>Cause</strong></td>
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<td><strong>Complication</strong></td>
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In **TV Sambasivampillai medicinal dictionary** Santhuvatham is described as,

"தெற்காயக்குருட்க - பயணத்காற அலைஸ்விளனே சூழ்பிட் பெண்புகள் சூழ்வு சூழ்வகுற்றலன காண்கி யுக்கு கொடுத்து, பெண்முட்டை அன்றக்கான குப்பையான காண்கு காணும் நீரை மாட்டு செய்து").

A form generally employed to inflammatory disease acute or Chronic of the whole or greater part of the fibrous structures that constitute the formation of a joint-Arthritis.

"சூழ்வன பெண் செப்பிளியுடன் சூழ்பிட்கள் பெண் சூழ்வு, பெண்முட்டை, மாட்கு செய்யுங்கள், தக கால் புயலை புறவிசையானவையுடன் மேலையும் சூழ்வந்தை மாட்டிவை").
“Rheumatism is characterised by inflammation with the thickening of the fibrous tissues, bodily suffering, giddiness, salivation and unbearable pain in the limbs rendering the patient unable to stand firmly”. As mentioned in the text of **Yugimuni Vaidya Chindamani**.

Santhuvatham is a disease characterised by, difficulty in walking and inability to do the works with hands and legs as usual due to stiffness of joints and pain of the body. Extra articular symptoms associated with this disease are excessive salivation, dryness of tongue, lassitude and lethargy. According to **siddha maruthuvam** (text book)

This Santhuvatham is mentioned as Keelvayu.
We can infer that the disease of santhuvatham was mentioned by various names, from above siddha literature evidences.

The disease Santhuvatham is characterised by difficulty in walking, inability to do work and is a disorder of joints (Santhu) where bone, muscles, tendons and associated structures binds together, for the purpose of locomotion of the body, caused by deranged humour vaatha. Many literature references reveals above mentioned conditions associated with pathological conditions of vaatha derangement.
Manifestations of vatha vitiations are pain in extremities & joints, abdominal distension, swelling, immobilization of body & stiffness, perverted taste, anorexia, fever etc.

"அுட்பாட வியாரமற்றவையில் வைக்கும் வசந்த விளக்கம் தன்னுடன் நடிய வைக்கொண்டுமொருமையானது கூடாமல் கலந்து வைக்கும் வைக்கும் பொழுதையான பாலத்துடன் பெரியன்று குறைந்தது முழுவத" - கிளைமா காமதியம்.

This also denotes that the character of vatha vitiation as aches and pain of joints, arms & legs along with the pain of ribs.

"மாற்றமான வாத்த பிட்டு கலந்து வைக்கும் வசந்த விளக்கம் புல்பார் சல் புல்பார் மையற்று வைக்கொண்டு வைக்கும் வைக்கும் பொழுதையான வைக்கொண்டு கலந்து வைக்கும் வைக்கும் பொழுதையான முழுவதும் குறைந்தது முழுவதும் குறைந்தது

- எக்கியியம் குறித்துக்காக.

With the joint pain, fever, nausea, body aches, pain and constipation are mentioned with excessive sweating

"மாற்றமான வாத்த வசந்த விளக்கம் வைக்கொண்டு செய்யும் விளக்கங்களை பரிமாற்றப்படச் செய்து பொழுதையான விளக்கங்களை பரிமாற்றப்படச் செய்து

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

- எக்கியியது வசந்த விளக்கம் வைக்கொண்டு செய்யும் விளக்கங்களை பரிமாற்றப்படச் செய்து பொழுதையான விளக்கங்களை பரிமாற்றப்படச் செய்து

- எக்கியியது வசந்த விளக்கம்

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Along with above mentioned conditions this stanza indicates vatha vitiation causes cough, loss of sleep and swelling of interphalangeal, tarsal, metatarsal joints and bony prominents & stiffness of the body.

“காந்தான் கீர்த்தியன் காசு வசம்பதி தன்னியம்
மாக அரி அன்றன் மின்னாவியம் - மேண்கல் சாக்
காந்தான் கீர்த்தியன் காசு வசம்பதி தன்னியம்
மாக அரி அன்றன் மின்னாவியம் - மேண்கல் சாக்”

- செங்குடி மார்கம்

Excessive salivation is additionally mentioned here. In Santhuvatha disease mostly affected types of pitham are sadhakam, Ranjakam, Prasaga Pitham.

In Gunavagadam Noyin saram stated,

“சித்திச்சம் வாகா வெள்ளி சித்திச்சம் வட்டு வெள்ளி
சுருக்குதல் தன்னு நோற்று சுருக்குதல் தன்னு”

When pitha dhosha associated with vatha causes joint pain. Other factor is kapha, kapha mainly regulates the fluid balance and structural component in all the tissues and organs.

“குறிக்கல் கீர்த்தியன் ச்சாக் வசம்பதி
நாகராறிய அரியானார் புரிய கீர்த்தியன்
நாகராறிய அரியானார் புரிய கீர்த்தியன்
சித்திச்சம் சித்திச்சம் சித்திச்சம் சித்திச்சம்
சித்திச்சம் சித்திச்சம் சித்திச்சம் சித்திச்சம்
சித்திச்சம் சித்திச்சம் சித்திச்சம்”

- செங்குடி மார்கம்
When Vathakapha gets deranged,

“அழித்துத் தலசின் தொல்லு
வெப்பந்த பிலிகு அழுத்து காப்புது
துருத்தி செய்யும் நிலைத்தீவு கோர்க்கு
துருத்தி எழுதிய தீசு காப்பு
தற்காலையும் வெப்பந்த தீசுக்கீழும்”

Its manifestation are pain, swelling and fever will associated with unbearable pain of the joints and increased secretion of synovial fluid.

**Aetiology of Santhuvatham :**

In **Yugi** we cannot find any specific aetiology for santhuvatham, but causes for all types of Vatha disease in general have been described,

“அல்லையொழிய வேளையொழிய
துருத்தி செய்யும் நிலைத்தீவு
பிலிகு அழுத்து காப்பு
தற்காலையும் வேளையொழிய தீசுக்கீழும்
வெப்பந்த பிலிகு அழுத்து காப்பு
தற்காலையும் வேளையொழிய தீசுக்கீழும்
நூறு அழுத்து காப்பு
நூறு தீசு கீழும்
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Since Vatha is responsible for nervous function, injudicious actions like, theft, unreligiousness, unlowyality, will affect the mind and soul will cause disturbance of Uyirthathu – Vatham
And also stated that imbalanced diet like increased tastes of bitter, sour, hot and rotten meals, starvation, inappropriate habits, disturbed mind are readily affect vatha and cause disease.

According to Siddha Maruthuvam (Sabapathy Kaieyedu):

“The book of Pararasa sekaram denotes mental disturbances such as fear, anger, Sorrow and excess manual work like – running, climatical changes also cause for the disturbance of Vatha.
According to **Mani Manthira Vaithya Sekaram**:

“அம்மியாடை மூட்டு என சத்துக்கின்று மித்தண்டு சுத்தியினால் தீனியும் சுருளுமயங்கும் இருளை தமிழகருள் நீண்டு நாடுகல்களுள் போல் சமுகமுக்கு எழும் பாடலுமணவும் பாதமாயிர் செய்வதால் எழும் காதலும் நீண்டு நாடுகல்களுள் போல் சமுகமுக்கு எழும் பாடலுமணவும் பாதமாயிர் செய்வதால் எழும் காதலும் நீண்டு நாடுகல்களுள் போல் சமுகமுக்கு எழும் பாடலுமணவும் பாதமாயிர் செய்வதால் எழும் காதலும் நீண்டு நாடுகல்களுள் போல் சமுகமுக்கு எழும் பாடலுமணவும் பாதமாயிர் செய்வதால் எழும் காதலும் நீண்டு நாடுகல்களுள் போல் சமுகமுக்கு எழும் பாடலுமணவும் பாதமாயிர் செய்வதால் எழும் காதலும் நீண்டு நாடுகல்களுள் போல் சமுகமுக்கு எழும் பாடலுமணவும் பாதமாயிர் செய்வதால் எழும் காதலும் நீண்டு நாடுகல்களுள் போல் சமுகமுக்கு எழும் பாடலுமணவும் பாதமாயிர் செய்வதால் எழும் காதலும் நீண்டு

Ref-Heritage of the Tamil siddha medicine

Certain position of planets at certain period of human life will produce keelpidippu and cause vatha vitiation.

According to **Agathiyar Kanma Kandam 300**:

“இரண்ட் மாதம் உயற்கு மண்டுக்கணவுசூடு
கூட்டாட்டப்படும் கல்லறையின் மண்டுக்கணவுசூடு
காதலின் சுத்தியினை தமிழ்கொண்டு
காதலின் கூட்டாட்டப்படும் நின்றவால்
துருத்தை சுத்தித்தல் சமஸ்தண்ணின் சுத்தியினை
சுத்தியினை சுத்தித்தல் காதலின் சுத்தியினை
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சுத்தியினை சுத்தித்தல் காதலின் சுத்தியினை
சுத்தியினை சுத்தித்தல் காதலின் சுத்தியினை

- ஆகத்தியர் கண்மாகாண்டம் 300. பத்தை - 56.

In Siddha system many disease are due to Kanmam which means the deeds or bad committed by an individual in his previous and the present births. The genetic disposition of certain disease are probably the result of Kanmam. Kanmam may also precipitate Vatha disease according to **“Agasthiar Kanma Kandam 300”** verse 56.
Cutting of young green living trees, breaking the legs of living beings, cutting the branches of a living tree etc. leads to vatha disease. These deeds are detrimental to the fellow beings and such Psycosocial aspect of an individual implies psycogenesis of the vatha disease.

Pathology of Santhuvatham:

"தோன்று குறுக்கு முட்டவும் உண்ணவும் கொலைகள்
அுருவந்தாம் விகர்பாள் தானுந்தாள்
அதனர் அறிந்திருப்பது நீரே
அதனால் வடிவ மற்றும் பொழுதைக்காணி
அதனால் வடிவந்து தங்கியுள்ள நீண்டிலே
அதனால் விளையாட்டு பாதுகாப்புள்ள தன்னாலே
நீண்டிக்கூட இரண்டு போன்றது
தம்பத்தில் தன்னால் திறனாளே"  
- சொன்னா தூரே

Increased vaayu (one of the panchapootha elements in spinal nerves affects the functional humour of vatha, as a result blood detoriation and vascular changes occur. Ultimately further affection of spinal nervous function takes place.

"நீண்டிக்கூட இரண்டு போன்றது
நீண்டிக்கூட இரண்டு போன்றது உண்ணவும் கொலைகள்
நீண்டிக்கூட இரண்டு போன்றது
நீண்டிக்கூட இரண்டு போன்றது உண்ணவும் கொலைகள்"  
- சொன்னா தூரே

When pitha dhosha associated with Vatha, joint pain and soolai noi will arise.
Clinical features of Santhuvatham:

“காகர் வாத்துக்கற்றின் குறுகில் கீழியாரோன்
்குறுகில் புருங்கும் மற் புக்கா காலாண்டு”
- கான்வை தார் தானியம்

Vatha Pitha Soolai causes ankylosis of the joints along with some extra articular lesions like thickening of the skin, ulcers etc.

“The condition of Vatha Soolai characterised by aches and pain of upper and lower limb joints, swelling, abdominal pain are associated with emaciation.

- தேவியுடல் கான்வை கார்யம் காற்றியம்

- Indigestion (Mantham)
- Eructation – yeppam
- Borborygmus of the abdomen
- Pricking pain
- Burning Sensation
- Swelling of the affected joints, fever, insomnia and lazziness.
Classification of santhuvatha diseases:

There are 80 types of vatha diseases are explained in *Yugimuni Vaidhya Chindhamani*, among them, **11 types** of vatha diseases are associated with **Poly arthritis**.

They are

- Santhuvatham
- Vatha suronitham
- Kalanjaga Vatham
- Uthira Vatha Suronitham
- Narithalai Vatham
- Malaitha Kambha Vatham
- Vatha Upakatham
- Kumba Vatham
- Thandaga Vatham
- Sagana Vatham

In *Agasthiyar Vaidya Kaviyam* **5 types**.

- Vatha Soolai
- Vatha Azhal Soolai
- Marbil Soolai
- Azhal Soolai
- Amavatha Soolai

In *Jeva Rackchamirtham* **7 varieties are explained as** vatha, pitha, kapha & Mukkuttra Soolai, Ama Soolai, Sankara Soolai, Gunma Soolai.

There are additional **2 types** in *Anubava Vaidya Devaragasiam*

They are Mega Soolai and Muri Soolai
In *Athmarakshamirtha Vaidya Sara Sangiraham*,
The joint diseases are classified into 25 varieties. In *Thirumoolar Karukkidai Vaidyam – 600* 5 types

- Vatha Soolai
- Pitha Soolai
- Kapha Soolai
- Vatha Pitha Soolai
- Seezhmega vayu Soolai

In *Agasthiyar Gunavakadam*

- Vatha Soolai
- Vatha Azhal Soolai
- Azhal Soolai
- Iya Azhal Soolai
- Seezhmega Soolai

Thus many literatures mentioned joint disorders under the name of Soolai. In the text book of Siddha Maruthuvam, synonym of Santhuvatham is denoted as Keel vayu accordingly santhuvatham can be classified as follows.

**Valikeel Vayu :**

“இண்டையோடிய ஏழாகச் செய்யும் வாடு முருகன் பருந்து நெடுங்கிரா காய்ச்சல் என்று உரைப் போர் இந்த வல்கள் வெளிப்படுத்தி கூறியுள்ளது. ஒளி செம்மான் திருக்காளன் சுழலால் குறுகியும் செல்லவும் ஓருடியும் வல்களே வேறு வல்கள் வைக்கார்”

- புரண்கு குறிப்பு

It is characterised by gnawing pain and swelling of joints, dryness of mouth and throat, fever, headache, palpitation of the heart, intolerable pain of the major joints like knee, ankle, hip, wrist, elbow and shoulder joints associated with constipation and excessive sweating.
Azhal Keel Vayu:

"प्रक्षेपण कर्मसूची पदार्थ के निरीक्षण के बाद लिपिविद्या
में सूचीपत्र ज्ञान तथा निराौंकी के कारण गर्भ से करीब
के काम करने वाली समस्या दूर करने के कारण केवल
कुछ फलन के लिए काम करने वाली अध्ययन में कारणों
" - समाप्ति कडलक

As pitha increases, kapha in the joint decrease and hence dryness occur. So during flexion of the joint crepitation sound "Kaluk Kaluk" is produced. In advanced cases it produces ankylosis of the joints and hence restriction of the joint movements results.

Kapha Keel Vayu:

"काप्हा कर्मसूची पदार्थ के अध्ययन के संबंध में काफी विशेषता
के कारण शारीरिक अवसरों अनुसार करीब के कारण
कुछ फलन के लिए काम करने वाली अध्ययन में कारणों
" - समाप्ति कडलक

It is characterized by severe pain in the joints associated with emaciation of the body, anorexia, insomnia, cough, hic-cough, vomiting, anaemia and dropsy.

Vali Azhal Keel Vayu:

"वाली प्रक्षेपण कर्मसूची पदार्थ के निरीक्षण के बाद
उल्लघन बनाए रखें। हास्य विशेषता असाधारण करीब
के काम करने वाली अध्ययन में कारणों
" - समाप्ति कडलक
Vali Azhal Keel Vayu has the Symptoms of indigestion like mantham, yeppam (Eructation), iraichal (Gurgling noise of the abdomen-borborygmi)

This disease occurs due to excessive intake of certain foods, which increase vatha and Pitha. (eg. Mutton, egg, fish and potato). In the disease eructation occurs due to indigestion. Then gas form in the abdomen and constipation developed.

Vali Iya Keel Vayu:

“When the bones of the fingers and toes ache, there is redness and swelling of the joints. Acute pain and tenderness in the affected joint, a feeling of heat and redness of skin, appearance of blisters, enlargement of the lymph nodes, general weakness, loss of weight, etc. are also associated symptoms. The affected joint looks like “Fox’s head”.

It is characterized by pain in the joints associated with effusion of joint fluid and swelling, restricted joint movements, pyrexia, fainting, insomnia, lymphadenopathy, generalized malaise, atrophy of the affected limb etc. The affected joint looks like “Fox’s head”.
Pitha Vatha Keel Vayu:

“It is characterized by pain and swelling of the joint associated with bitter taste, vomiting, fainting, bleeding from the gums, malena, haematemesis. The common site is ankle joint. Pain, swelling, redness may also be present.”

Pitha Kapha Keel Vayu:

“It is characterised by pain and swelling of the joints associated with fainting, vomiting, hyperpyrexia, headache and palpitation. Common sites are elbow and knee joints.”

Kapha Vatha Keel Vayu:

“It is characterized by pain, vomiting and dyspepsia associated with burning, bloating and belching. Common sites are abdomen, chest and throat.”
This clinical entity mainly involves the knee joints with accumulation of blood in the joint, which result in immobilization of the joint with stiffness of periarticular structures. So the swelling resembles the fox head and palpitation may occur.

**Kapha Pitha Keel Vayu :**

"துவிசை பஞ்சக் கீழ் முக்கோணம் சுட்டிய காற்பனை வெளிப்பு தோற்றம் வெளியில் இரண்டாக காட்டும் பின்னர் காரணம் மாற்றும் அயலை உண்மையானது நீதியும் தெய்வத்தை மேல் சமயிட்டு துண்டுக்காடியும்”

- காப்பி கோபாப்

It is characterised by excruciating pain in the joints associated with increased sputum, laryngitis, pyrexia, vomiting, drowsiness, cough, oedema and restricted joint movements etc.

**Mukkutra Keel Vayu :**

"முக்கோணத்தில் குறுக்கு வீனையில் கால கருநையான மெல்லத்தில் புக்கல்த வருகையை விளையாடும் நான்கும் இரண்டாக வருகையை விளையாட்டும் நான்கும் இரண்டாக வருகையை விளையாட்டும்”

- காப்பி கோபாப்

It is a chronic one, characterised by pain & swelling of the joints which increases day by day, suppuration of the surrounding structures, associated with excessive sweating, dyspnoea, giddiness, syncope, vomiting, delirium, constipation, anuria, oedema etc. It this is not treated properly it may leads to fatal termination.
Complications of Santhuvatham:

As the disease progresses, joint diseases leads to deformity and immobilization of the limbs. In Siddha system such conditions are named as mudakku Vatham.

“பாதியால் காரணத்தால் பெரும் புறநிலைகளால் நூறு தோற்றும் செயல்களும் காரணமாக கொண்டு நடத்தியது பெரும் வேலைகளை செய்ய அச்சாகத்தால் மீது பாது வாய்ந்த மிக குறைவை”
- புத்தி விரிங்கம் வாக்காக காணிப்பது -1000

It denotes, in Mudakkuvatha condition body will bend forward and rounding the shoulder probably due to vertebral column deformity (Hang dog position).

“பாதியால் காரணத்தால் புறநிலைகளால் குறைவு தோற்றும் செயல்களும் காரணமாக கொண்டு நடத்தியது பெரும் வேலைகளை செய்ய அச்சாகத்தால் மீது பாது வாய்ந்த மிக குறைவை”
- புத்தி விரிங்கம் வாக்காக காணிப்பது -1000

Same book says due to Mudakkuvatha affliction one cannot straighten his body after bending and also inability to walk with joint pain.

In Chikitcharathna Theepam hand involvement also stated, where there is disability of hand, fever & swelling are described as Kaimudakku Vatham.

“காரணத்தால் பாதியால் புறநிலைகளும் காரணத்தால் குறைவு தோற்றமானது மீது பாதுகாக்க மிக குறைவை”
Prognosis:

Through a full of knowledge about prognosis will save the patient as well as the physician from considerable difficulties. The knowledge of prognosis is most important for a physician to have a perfect and proper line of treatment and prevention.

In santhu vatham the course of the disease is depend on the pirakiruthi, disturbed vatha, pitha, kapha and kaalavanmai, seyarkai vanmai and stages of the disease. Prognosis mainly depends up on the affected thridoshas. Commonly, it is difficult to yield permanent cure, in later stage of the disease produce ankylosis. Gradually all movements of the joints becomes restricted.

In Agasthiyar Gunavagada Thirattu,

“

"துறுக்கு முற்குறு பரட்டு வதுதோ சூழான கமாவ கமாவு ஒளியவால்
காக்க நூற்றினால் நான்பு பழையாழ்க

நூற்றினால் புனர் மையாண்டால் சென்னும்"

It denotes a complicated course of the disease, which is hardly curable.

In advanced stage it produces ankylosis of the joints, in upper and lower limbs, and it results in restriction of movements.

Treatment: (Parikaram / Pini neekam)

Siddha system of medicine has a sophisticated treatment modality. It not only cures the disease but it corrects the causative factors and insists to advise certain life style modification in order to prevent the disease again.
So it clarifies the treatment as follows,

- **Kaappu (Prevention)**
- **Neekam (Treatment)**
- **Niraivu (Restoration)**

**Kaappu :**

It means prevention of human beings from disease. As per siddha system the vinaipayan (Kanmam) is transferred to the fertilized embryos at the time of conception. This vinai payan produces certain incurable chronic disease according to siddhars. Moreover one should try to neutralize the vinai payan before his life time because, his negative effects are transferred to his hereditary.

One should simply eliminate the vinai payan through some simple life style modification or regulations. Further the physician must advise all the patient to follow the following habits.

- Living with good moral habits.
- Avoid excessive sex with many persons
- Avoid stress, fear and anxiety
- Always follow good dietary pattern
- Avoid exposing chill weather and rain.
- Take oil bath regularly
- Avoid in-take of Alcohols
- Avoid kapha producing foods
- Always do some simple yogas & meditation
- Always have good positive thoughts.
Neekam:

A good physician should know the deranged kutram and should treat the patients according to the vitiated kutram. So the treatment is based on

(i) To bring down the thridosham normal

(ii) To give internal as well as external medicines, according to the symptoms of the diseases.

For normalizing thrithodam:

“மிர்குத்துண்டு வாயும் திரும்பு”

From the above poem, siddhar’s had advised to prescribe purgatives (or) laxatives to bring back normal vatham.

In santhu vatham 10gms of Nilavagai chooranam with luke warm water was administered at bedtime, before starting the specific treatment.

Administration of Medicines:

Perhaps there are varieties of medicines available in various siddha literatures but the author had selected the following medicines as test medicines.

Internal Medicine:

Medicine: Ichchura Mooli Chooranam
Dose: 1-2gm, Two times a day
Adjuvant: Hot water

External Medicine:

Medicine: Erivatha thylam
Massage Therapy or Thokkanam:

“நாரகச்சாலிகள் விளைந்துள்ள அயனிகளைத் திறந்து ரகசிப்படுத்தி வச்சுற் கண்டு பரிசுற்றும் அம்மகில்கள்
புன்றுப்பரிசு முதலினைச் சிட்டு
ஒல்ல ஆலவாக்கே போகள்”
- டேவல் மாலைன்

Chronic diseases like (Hemiplegia, Paraplegia) Pakkavatham, Arunavatham, Santhuvatham (Arthritis), Sirakampa vatham (Cerebral palsy), Mugavatham, (Facial paralysis) etc take too long period to cure.

Thokkanam is very useful in muscular, bony or nervous disorder, for such diseases Thokkanam can be done after applying medicated oil or without application of oil.

There are 9 methods in Thokkanam. They are,

- Thattal
- Irukkal
- Aluthuthal
- Kaikattal
- Izhuthal
- Pidithal
- Murukkal
- Mallathuthal
- Asaiythal

Among the 9 types of Thokkanam, the following 2 types of Thokkanam (Massage) are mainly employed.

- Pidithal (effleurage and petrissage)
- Aluthuthal (Friction)
Pidithal is a process in which strokes are slid smoothly and by kneading.

Aluthuthal is a process in which friction or compression is performed.

**Pathiyam – Diet and Regimen :**

During the course of treatment according to the drug administered to the patient, and nature of the disease, the patient is advised to follow certain precautions regarding diet and physical activities. This form of medical advise in siddha system of medicine is said to be as pathiyam.

Pathiyam for vatha diseases mentioned in *Pathartha Guna Chinthamani* is as follows.

"உயிரியுற்று என் மருந்தை உச்சரியங்கள் குறுக்கு புல்கால்கள் குறுக்கு புல்கால்கள் குறுக்கு புல்கால்கள்
சத்கி சிவத்து திரு சுத்தியாக நிறைந்தீர்கள்
வாய்வு மலங்கக்கு பாற்"

**சரிக்கைக்காணல் :**

"உயிரியுற்று என் மருந்தை உச்சரியங்கள், சத்கி சிவத்து திரு சுத்தியங்கள்
மிள்கு, சாலார் போன்றங்கள், குறுக்கு புல்கால்கள்
சாவு உயிரியுற்று பாற், ஸ்டைல்"

**துவாக செய்துப் பல்கு :**

புங்குனை, சாலார் கொடுந்து தைந்த பெருந்தை
In siddha system, the specific medicines and certain pathiyams when not followed it may sometimes leads to the following clinical manifestations.

- Lethargy
- Unconsciousness
- Thirst
- Psycosis
- Chest pain
- Delirium

If any one of the above manifestations occurred in any patient they were advised to take Thrikadugu Kiyazham.

Niraivu:

Reassurance of disease recovery were given to all the patients.
Modern Aspect
MODERN ASPECT

Joint :

A joint is a meeting point of two or more bones.

Classification :

- Immovable-Skull type of joints.
- Slightly movable – Vertebral type of joints
- Highly movable – limb type of joints

Immovable joint :

They are classified according to the type of tissue found between the articulating bones.

- Sutures – Found between membrane bones.
- Synchondrosis – Found between cartilageous bones.

Sutures :

In between two bones there is a membrane. The membrane persists even in adult life.

(eg) coronal suture, sagital suture etc.

Synchondrosis :

A layer of cartilage is found in between the articulation bones. These bones are embryologically developed as cartilageneous bones.

(eg) Spheno occipital synchondrosis,
     Spheno ethmoidal synchondrosis.

Synostosis :

Suture or synchondrosis ossify the joint disappears.
Slightly movable joints:

Vertebral type of joints (Amphiarthrosis). They are the cartilagenous joints. They are slightly movable joints.

They are classified into the following types.

- Primary cartilagenous joint.
- Secondary cartilagenous joint.

Primary cartilagenous joints:

They are temporary cartilagenous joints. The cartilage disappears after some years of life. So they are temporary cartilagenous joints. (eg) joints found between the diaphysis and epiphysis of the long bones.

Secondary cartilagenous joints:

They are classified into following types.

- Symphysis
- Syndesmosis

A symphysis is a joint, where the articular surfaces are covered by hyaline cartilage. Ligaments unite the bones. Joint cavity is actually absent.

(eg)

- Pubic symphysis
- Joints between bodies of vertebrae
- Manubrio sternal joint etc.
- The symphysis type of joints are found along the midline.
**Syndesmosis :**

The articulating bones are kept at a distance but united by strong ligaments.

(eg)  
- Inferior tibio fibular syndesmosis
- Joint between coracoid process and clavicle
- Joint between vertebral arches.

So a typical vertebra takes part in three types of joints.

- Symphysis
- Syndesmosis
- Synovial joints

**Synovial Joints (Limb type of joints) (Highly movable joint) :**

They are highly movable joints. The articulating surfaces are covered by the articular hyaline cartilage. The bones are held together by a fibrous capsule. This caseule is thickened to form collateral ligaments. The inner surface of the capsule is lined by a silky synovial membrane. The synovial membrane lines the capsule is reflected to the borders of the articular cartilage. The synovial membrane does not line the articulating surfaces. The cavity of the joint is filled with the synovial fluid. This fluid is a dialystate of plasma and it contains hyaluronic acid.

Fatty pads are present in some synovial joints. These fatty depots are situated between the synovial membrane and capsule or between the capsule and bone. (eg) knee joint.
**Ligaments :**

In the large joints, they are formed from the capsule as a specialized part of the capsule.

(eg) Ligaments of the knee joint

Here the ligaments are formed of non-elastic collagenous tissue. Some ligaments are made up of elastic tissue.

(eg) Spring ligaments in the foot.

**Bursae :**

This is a sac of synovial membrane surrounded by fibrous tissue. They facilitate movements. They may be continuous with the joint cavity.

(eg) Supra Patellar bursa of knee joint.

**Articular disc :**

In some joints there may be fibro cartilagenous pads. They divide the joint cavity into two components.

(eg)

- Sterno clavicular joint
- Temporo Mandibular joint
- Knee joint

**Synovial Membrane :**

Synovial membrane lines non-articular areas in synovial joints, bursae and tendon sheaths, all regions where movement occurs between opposed surfaces, which are lubricated by a fluid superficially like egg albumin (synovia) secreted and absorbed by
the membrane. It lines fibrous capsules and covers exposed osseous surfaces, intra capsular ligaments and tendons.

**Synovial Fluid:**

Synovial fluid is a clear, viscous, pale, yellow fluid, with a specific gravity of 1008 to 1015, which fills the synovial cavity. It is a dialysate of the blood plasma with mucin and hyaluronic acid added to it as secretions from the synovial cells.

**Functions:**

The main functions of the synovial fluid are lubrication and nourishment of the articular cartilage.

Synovial Fluid includes provision of a liquid environment, small in range of pH, for joint surface nutrition of articular cartilages, disc and menisci lubrication and reduction of erosion.

Synovial membrane not only produces fluid but also removes materials from the articular cavities.

**The Synovial Cavities:**

The joint cavities and the bursae are known as synovial cavities. The synovial membrane at all, but only a collection of dense fibrous tissue cells that lines the surface between the interstitial spaces and cavities. For this reason these cavities might be considered to be nothing more than enlarged tissue spaces. However the synovial cavities do contain large amounts of muco poly saccharides much than normally present in the interstitial fluid. The origin is not known, though presumably it is secreted by the surrounding connective tissue cells.
In the synovial cavities, excess proteins are likely to collect in the potential spaces and these must be returned to the circulatory system through the lymphatics, otherwise the space swells. Since the synovial membrane offers little or no barrier to the transfer of fluid into the surrounding tissues, the protein can flow into the lymphatics of the area.

**Classification of Synovial Joints** :

- Plane Joints
- Uniaxial Joints
- Hinge Joints
- Pivot Joints
- Biaxial Joints
- Multi Axial Joints

**Disease of Joints** :

The most common cause of arthritis in India is due to the prevailing infections of various types.

**Classification** :

Joints are subject to various types of disease and disorders. Although the etiology of many of these has been recently understood, there are still many conditions where the exact etiology is not yet clear. Many lesions which are not strictly inflammatory are still loosely termed as arthritis.
Rheumatism is an indefinite term applied to various conditions with pain or other symptoms which are of articular origin or related to other elements of the musculo skeletal system.

The word “Rheumatoid” is derived from Greek language (Rheuma-Flux, eidos – resemblance) indicating a condition resembling rheumatism is an indefinite term applied to various conditions with pain or other symptoms which are of articular origin or related to other elements of the musculo skeletal system.

Classification of Joint Diseases

(Text book of orthopaedic & Traumatology – Natarajan)

I) Infective Arthritis :

Infected Arthritis
(Bacterial, Viral, Parasite)

Acute Infection

a) Acute pyogenic Arthritis
b) Acute Gonococcal Arthritis
c) Acute Rheumatic Arthritis
d) Small Pox Arthritis

Chronic Infection

Non Specific
Pyogenic Arthritis

Specific
Tubercular Arthritis
Syphilitic Arthritis
Gonococcal Arthritis

Parasitic infestation
Guinea worm Arthritis

II) Rheumatoid Arthropathy

a) Rheumatoid Arthritis :
   - Rheumatoid Arthritis (Adult)
   - Juvenile Rheumatoid Arthritis (JRA)
b) **Sero Negative Spondylo Arthropathy** :
- Ankylosing Spondylitis
- Reiter’s Disease
- Psoriatic Arthritis
- Enteropathic Arthritis

III) **Degenerative Arthritis** :

Osteoarthritis

- Primary Osteoarthritis
- Secondary Osteoarthritis

IV) **Neuropathic Arthropathy** :
- Tabes – Charcot’s Arthropathy
- Syringo Myelia
- Leprosy
- Diabetes Mellitus

V) **Metabolic Arthritis** :
- Gout
- Alkaptonuric Arthritis

VI) **Arthritis in Systemic disorder** :
- Allergic Arthritis
- Haemophilic Arthritis

VII) **Miscellaneous Joint** :
- Villo – Nodular synovitis
- Synovial Chondromatosis

VIII) **Hysterical Joint** :

**Pathology** :

Arthritis is the inflammation of all the component structures of the joint with involvement of the synovium, articular surfaces and capsule.
The following stages can be identified:

- Stage of synovitis
- Stage of reversible arthritis
- Stage of irreversible arthritis
- Stage of ankylosis

The critical stage of the disease is the involvement and destruction of the articular cartilage, as any gross damage to the cartilage is irreversible leading to ankylosis and loss of function.

Collagen diseases are systemic diseases affecting all connective tissues in the body. Many of these disorders have joint manifestations. The most important of these is **Rheumatoid Arthritis**.

**Polyarthritis:**

Polyarthritis is involvement of five or more jts or jt groups. In determining the cause it is helpful to consider whether the polyarthritis:

- is symmetrical (approximately) or asymmetrical
- shows predominant or equal involvement for upper and lower limbs.
- shows predominant or equal involvement for large and small jts.
- has accompanying periarticular involvement.
- has accompanying extra-articular features as clue to the diagnosis.
### Examples of extra articular features that associate with inflammatory oligo or poly arthritis.

<table>
<thead>
<tr>
<th>Clinical Features</th>
<th>Disease Association</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Skin, nails and mucous membranes</strong></td>
<td></td>
</tr>
<tr>
<td>• Psoriasis, nail pitting and dystrophy</td>
<td>• Psoriatic arthritis</td>
</tr>
<tr>
<td>• Raynaud’s</td>
<td>• Lupus Scleroderma</td>
</tr>
<tr>
<td>• Photo sensitivity</td>
<td>• Lupus</td>
</tr>
<tr>
<td>• Livedo reticularis</td>
<td>• Lupus</td>
</tr>
<tr>
<td>• Splinter haemorrhages, nail fold infarcts</td>
<td>• Vasculitis</td>
</tr>
<tr>
<td>• Oral ulcers</td>
<td>• Lupus, reactive Arthritis, Behcet’s</td>
</tr>
<tr>
<td>• large nodules (mainly extensor surfaces)</td>
<td>• Rheumatoid Arthritis, Gout</td>
</tr>
<tr>
<td>• clubbing</td>
<td>• Enteropathic Arthritis, metastatic lung cancer, endocarditis.</td>
</tr>
<tr>
<td><strong>Eye</strong></td>
<td></td>
</tr>
<tr>
<td>• Uveitis</td>
<td>• Seronegative spond Arthritis.</td>
</tr>
<tr>
<td>• Conjunctivitis</td>
<td>• Reactive Arthritis</td>
</tr>
<tr>
<td>• Episcleritis, scleritis</td>
<td>• Rheumatoid Arthritis, Vasculitis</td>
</tr>
<tr>
<td>• Urethritis</td>
<td>• Reactive Arthritis</td>
</tr>
<tr>
<td><strong>Heart, lungs</strong></td>
<td></td>
</tr>
<tr>
<td>• Pleuro-pericarditis</td>
<td>• Lupus, Rheumatoid Arthritis.</td>
</tr>
<tr>
<td>• Fibroging alveolitis</td>
<td>• Rheumatoid Arthritis, lupus, other connective tissue disease.</td>
</tr>
<tr>
<td><strong>Abdominal organs</strong></td>
<td></td>
</tr>
<tr>
<td>• Hepato splenomegaly</td>
<td>• Rheumatoid Arthritis, Lupus</td>
</tr>
<tr>
<td>• Haematuria, proteinuria</td>
<td>• Lupus, vasculitis</td>
</tr>
<tr>
<td>• Urethritis</td>
<td>• scleroderma</td>
</tr>
<tr>
<td><strong>Fever, Lymphadenopathy</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Infection, Systemic Juvenile Idiopathic Arthritis</td>
</tr>
</tbody>
</table>
A large number of viral infection may cause arthralgia (Joint pain with no abnormal examination findings) and rapid onset of an acute symmetrical inflammatory poly Arthritis affecting small and large jts of upper and lower limbs that is usually self limiting within six weeks.

These include parvovirus B19, hepatitis B and C, mumps, rubella, chickenpox and infectious mononucleosis.

The rapidity of onset, the presence of fever and the characteristic rash usually suggest the diagnosis.

Arthritis usually precedes jaundice from hepatitis B.

Rubella Arthritis mainly affects girls and women, occurring 1-7 days after the rash or 2-6 weeks after vaccination.

Rubella is exceptional in that, although the symmetrical poly Arthritis settles, oligo Arthritis may persist for some months.

Poly Arthritis that persists for more than 6 weeks is unlikely to be viral.

A definitive diagnosis may be difficult in the first few months of onset but often becomes firmer as more characteristic features develop with time. However, certain patterns are characteristic and may be present at or soon after presentation.

Rheumatoid Arthritis is by far the most common cause of chronic inflammatory, symmetrical poly Arthritis affecting small and large jts of upper and lower limbs.
Tenosynovitis and bursitis (i.e., synovial inflammation) are the main periarticular manifestations.

Marked asymmetry, lower limb predominance and involvement of large more than small joints are all more characteristic of seronegative spondyloarthritis.

Concurrence of enthesitis associated diffuse periarticular swelling and inflammatory spondylitis may be further clinical markers of spondyloarthritis.

Lupus usually causes more arthralgia and wrist extensor tenosynovitis than over synovitis.

Chronic polyarthritis due to gout is inevitably preceded by a long history of acute attacks.

Other causes of polyarthritis are rare.

For inflammatory polyarthritis present for less than 6 weeks:

- The full blood count
- Liver function tests
- Viral serology is often appropriate.

For early persistent polyarthritis of indeterminate cause appropriate initial investigation should include the full blood count.

- ESR
- CRP
- Liver function
- Rheumatoid factor
- Antinuclear antibody
- Radiographs of hands and feet.
<table>
<thead>
<tr>
<th>Causes of Poly Arthritis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cause</strong></td>
</tr>
<tr>
<td><strong>Non inflammatory</strong></td>
</tr>
<tr>
<td>• Generalised Osteo Arthritis</td>
</tr>
<tr>
<td>• Haemo chromatosis</td>
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<tr>
<td>• Acromegalic arthropathy</td>
</tr>
<tr>
<td><strong>Inflammatory</strong></td>
</tr>
<tr>
<td>• Viral arthritis</td>
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<tr>
<td>• Rheumatoid Arthritis</td>
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<tr>
<td>• Seronegative spondarthritiss</td>
</tr>
<tr>
<td>i. Psoriasis</td>
</tr>
<tr>
<td>ii. Reactive</td>
</tr>
<tr>
<td>iii. Ankylosing spondylitis</td>
</tr>
<tr>
<td>iv. Enteropathic arthropathy</td>
</tr>
<tr>
<td>• Lupus</td>
</tr>
<tr>
<td>• Chronic gout</td>
</tr>
<tr>
<td>• Juvenile idiopathic Arthritis</td>
</tr>
<tr>
<td>• Chronic sarcoidosis</td>
</tr>
<tr>
<td>• Scleroderma &amp; poly myositis</td>
</tr>
<tr>
<td>• Hypertrophic osteoarthropathy</td>
</tr>
</tbody>
</table>

**Degenerative Joint Disease or Osteo Arthritis:**

Degenerative joint disease or osteoarthritis (OA) is a disorder characterized by progressive deterioration and loss of articular cartilage accompanied by proliferation of new bone and soft tissue in and around the involved joint.
Primary (idiopathic) OA : No underlying cause is apparent.

Secondary OA : a predisposing factor is present, such as trauma, repetitive stress (occupation, sports) congenital abnormality, metabolic disorder, or other bone/joint diseases.

Erosive OA : term often applied to patients who have hand DIP/PIP OA associated with synovitis and radiographic central erosions of the articular surface.

Pathology :

Osteo arthritis (OA), also called degenerative joint disease (DJD), is the most common type of joint disease. It is characterised by the progressive erosion of articular cartilage. The term OA implies a role for inflammation in its pathogenesis; however, inflammatory cells are usually not prominent and are a secondary phenomenon. OA is now considered to be a disease of cartilage, in which intrinsic bio-chemical and metabolic alterations result in its breakdown.

Clinical Manifestations :

OA is the most common form of joint disease. It can affect almost any joint, but usually occurs in weight-bearing and frequently used joints such as the knee, hip, spine and hands. The hand joints that are typically affected are the DIP, PIP or first CMC (thumb base); MCP involvement is rare.
Symptoms:

- Usually – related pain affecting one or a few joints (rest and nocturnal pain less common)
- Stiffness after rest or in morning may occur but usually brief (<30min)
- Loss of joint movement or functional limitation.
- Joint instability
- Joint deformity
- Joint crepitation (“crackling”)

Physical Examination:

- Chronic mono arthritis or asymmetric oligo/poly arthritis
- Firm or “bony” swellings of the joint margins, e.g. Heberden’s nodes (hand DIP) or Bouchard’s nodes (hand PIP)
- Mild synovitis with a cool effusion can occur but is uncommon
- Crepitance – audible creaking or crackling of joint on passive or active movement.
- Deformity, e.g., OA of knee may involve medial, lateral or patellofemoral compartments resulting in varus or valgus deformities.
- Restriction of movement, e.g. limitation of internal rotation of hip.
- Objective neurologic abnormalities may be seen with spine involvement (may affect intervertebral discs, apophyseal joints and paraspinal ligaments)
Evaluation:

- Routine lab work usually normal
- ESR usually normal but may be elevated in patients who have synovitis
- Rheumatiod factor, ANA studies negative
- Joint fluid is straw – coloured with good viscosity, fluid WBCs<2000/µl; of value in ruling out crystal – induced arthritis or infection.
- Radiographs may be normal at first but as disease progresses, may show joint space narrowing, subchondral bone sclerosis, subchondral cysts and osteophytes. Erosions are distinct from those of rheumatoid and psoriatic arthritis as they occur subchondrally along the central portion of the joint surface.

Diagnosis:

Usually established on basis of pattern of joint involvement, radiographic features, normal laboratory tests and synovial fluid findings.

Metabolic Disease:

Approximately 50% of people with haemochromatosis develop arthropathy, usually in their forties or fifties, which may predate other classic features. Presentation is usually with pain and stiffness of wrists, fingers and metacarpophalangeal joints, though hips, shoulders and knees are also commonly affected.
Radiographic changes resemble osteoarthritis with narrowing, sclerosis and cysts, but cysts are often multiple and prominent, there is little osteophyte, and atypical sites for osteoarthritis (e.g. radiocarpal joint, metacarpophalangeal joints) are targeted. About 30% have superimposed pseudogout attacks and radiographic chondrocalcinosis as additional clues. Treatment of the haemochromatosis does not influence the arthropathy.

**Acromegalic arthropathy :**

Acromegalic arthropathy, mainly affecting knees, hips and shoulders with non-inflammatory usage pain and coarse crepitus, suggesting osteoarthritis, but normal or increased (not restricted) movement. Radiographic signs may include widening of joint spaces, squaring of bone ends, generalized osteopenia and tufting of terminal phalanges.

**Viral arthritis :**

Most forms of viral arthritis are self-limiting. The usual presentation is with acute polyarthritis, fever or viral prodrome and rash. Parvovirus arthropathy is the most common and unlike children, adults may not have the characteristic facial rash. Diagnosis is confirmed by a rise in specific IgM. Polyarthritis may also rarely occur with hepatitis B and C, rubella and HIV infection.

**Rheumatoid Arthritis :**

**Definition :**

“Rheumatoid Arthritis is a symmetrical, destructive and deforming poly arthritis affecting small and large synovial joints with associated systemic disturbance, a variety of extra – articular features and the presence of circulating antiglobulin antibodies (Rheumatoid Factors)”. 
**Epidemiology:**

Rheumatoid Arthritis occurs throughout the world and in all ethnic groups. The prevalence of Rheumatoid Arthritis is approximately 1% of the population.

Women are affected approximately 3 times more often than men.

The disease starts most commonly between 3rd and 5th decades, but the age of onset follows a normal distribution curve and no age group is exempted.

80% of all patients developing the disease are between the ages of 35 to 50. The climate, Altitude and Geography do not appear to influence the disease.

**Aetiology:**

Definite cause is unknown, Host – genetic factors.

It may be familial. Family studies indicate a genetic predisposition of Rheumatoid Arthritis is found at approximately 4 times the expected rate in first degree relatives of individuals with seropositive disease.

Although the cause of Rheumatoid Arthritis remains tantalizingly obscure. There is increasing evidence that the disease is triggered by T.Lymphocyte activation in genetically predisposed individuals with HLA clears II Haplotypes.

**Immunoregularity abnormalities and auto immunity:**

A triggering or persisting microbial infection. Eg.Streptococci, Diphtheroides, Mycoplasmas, Clostridumperfrigens. Viral infection-Rubella, Epstein Barr virus.
Onset:

In two third of the patient, it begins insideously with fatigue, anorexia, generalized weakness and vague musculoskeletal symptoms until the appearance of the synovitis becomes apparent. This prodrome may persist for weeks or months and defy diagnosis. Specific symptoms usually appear gradually as several joints, especially those of the hands, wrists, knees and feet become affected in a symmetric fashion.

In approximately 10% of individuals the onset is more acute with a rapid development of poly arthritis often accompanied by the constitutional symptoms including fever, lymphadenopathy and splenomegaly.

In approximately one third of the patients, the symptoms may initially be confined to one or few joints.

Although the pattern of joint involvement may remain asymmetric in a few patients, a symmetric pattern is more typical.

Pathology:

The condition is widespread but the brunt of the attack falls on synovium. The constant and characteristic feature is a chronic inflammation an in-constant but pathognomonic lesion is the rheumatoid nodule.

The Pathological changes, if unchecked proceed in three stages.

Stage I – Synovitis:

Early changes are vascular congestion, proliferation of synoviocytes and infiltration of the sub synovial layers by
polymorphs, lymphocytes and plasma cells. There is thickening of the capsular structures, villous formation of the synovium and a cell – richeffusion into the joints and tendon sheaths. Though painful, swollen and tender, these structures are still intact and mobile and the disorder is potentially reversible.

**Stage II – Destruction:**

Persistant inflammation causes joint and tendon destruction. Articular cartilage is eroded, partly by proteolytic enzymes, party by vascular tissues in the fold of the synovial reflections, and partly due to direct invasion of the cartilage by a “Pannus” of granulation tissue creeping over the articular surface. At the margins of the joint, bone is eroded by granulation tissue invasion and osteoelastic resorption. Similar changes occur in tendon sheaths causing teno synovitis invasion of the collagen bundles and eventually, partial or complete rupture of tendon. A synovial effusion often containing copious amount of fibrinoid material produces swelling of joints, tendon and bursae.

**Stage III – Deformity:**

The combination of articular destruction, capsular stretching and tendon rupture leads to progressive instability and deformity of the joint. By this time, the inflammatory process may have subsided; the emphasis is now on the mechanical and functional effects of the joint and tendon disruption.

**Pathogenesis of Rheumatoid Arthritis:**

The characteristic lesion of Rheumatoid arthritis is a diffuse proliferative synovitis. The synovitis is immunomediated but the initiating cause of the auto immune reaction is unknown.
Immune Mechanism and Rheumatoid Arthritis:

- About 80% of the patient has Rheumatoid factor positive. Rheumatoid factors can be of any isotope (IgM, IgG, IgA, IgE) but their distinguishing feature is the recognition of IgG as their Antigen.

- Serum Titre of Rheumatoid factor correlates roughly with the severity of Rheumatoid Arthritis.

- Rheumatoid Factor couples with autologus IgG to form immune complexes with in the articular space. Immune complexes blind complement system and activate it.

- Rheumatoid Factor in circulation and joints are formed locally by the inflammatory infiltrate of activated B cells and plasma cells.

- The products of activated complement are cheotactic fractions C3a and C5a which attract neutrophils to the joint and synovial membrane.

- Phagocytosis of Immune complexes by neutrophils follows with the release of collagenoses and Neutral peptidases. Collagenase is capable of degrading articular cartilage.

The joint damage in RA is of immune origin and appears in genetically predisposed individuals the precise trigger that initiates these reactions is still unknown.

Clinical Manifestations:

Clinical manifestations are classified under two headings.

- Articular manifestations
- Extra – articular manifestations
Signs and symptoms of Articular manifestations:

Any synovial joint in the body may be affected particularly in the more severe forms of the disease. Pain may initially be poorly localized to the joints. Pain in the affected joints aggravated by movements is the most common manifestation of established rheumatoid arthritis. It corresponds to the joint involvement but does not always correlate with the degree of apparent inflammation. Pain originates predominantly from joint capsule which is supplied by pain fibres and is markedly sensitive to stretching or distension.

Swelling may also be an initial symptom. Clinically synovial inflammation causes swelling, tenderness and limitation of motion. Warmth is also evident on examination, especially of large joints such as the knee. Joint swelling results from accumulation of synovial fluid, hypertrophy of the synovium and thickening of the joint capsule due to limitation of motion initially by pain. Generalised stiffness is frequent and is usually greatest after periods of inactivity. Morning stiffness of greater than one hour duration is an almost invariable feature of inflammatory arthritis. Fever of 40°C occurs on occasion, temperature elevation in excess of 38°C is unusual and suggests the presence of an inter current problem such as infection. Majority of patients experience weakness, Easy fatiguability, Anorexia, Weight loss as the constitutional symptoms. Muscle wasting, clinical weakness and atrophy of the skeletal muscles are common. Muscle atrophy may be evident with in weeks of the onset of rheumatoid arthritis.
Involvement of Individual Joints:

Hands and Wrist:

Rheumatoid arthritis often causes symmetric arthritis with characteristic involvement of certain specific joints such as proximal interphalangeal joints and metacarpophalangeal joints. The distal interphalangeal joints are rarely involved.

In early course of the disease, there may be spindling of the progress due to synovial hypertrophy and effusion in the interphalangeal joints.

Later, marked synovial hypertrophy on the dorsum of the wrist with involvement of extensor tendon sheath results in dropped finger. The same process in the palmar aspect may lead to carpal tunnel syndrome.

Persisting synovitis, weakening of the capsule, muscle wasting, tendon rupture and destruction of the articular surface leads to characteristic Rheumatoid hand deformity, which includes,

- **“Swan neck deformity”** with hyper extension of the proximal interphalangeal joints with fixed flexion of the distal interphalangeal joints.

- **“Button hole deformity” (Boutonniere deformity)** which includes fixed flexion of the proximal interphalangeal joints and extension of the distal interphalangeal joints.

- **“Z deformity”** of the thumb (Radial deviation at the wrist with ulnar deviation of the digits often with Palmar subluxation of the proximal interphalangeal joints.
Hyper extension of the first interphalangeal joints and flexion of the first metacarpo phalangeal joint with consequent loss of thumb mobility and pinch.

Palmar erythema is also common. Raynaud’s phenomenon may occur in the early stage.

**Feet and Ankles:**

Active synovitis in the metatarsophalangeal joint can produce pain and tenderness best elicited by the lateral squeezing of the joints.

The synovial swelling of the active disease together with destruction of the ligament between the metatarsal heads may broaden the forefoot and separate the toes to produce the *“day light sign”*. Deformities may also develop in the feet including eversion at the hind foot (subtalar joint), Plantar subluxation of the metatarsal heads, widening of the forefoot, hallux – vulgus and lateral deviation and dorsal subluxation of the toes. So the patient walks on the unprotected heads of the metatarsal bones. The patient complains of a feeling of walking on pebble’s and the metatarsal heads are readily palpable on the sole of the foot.

In the hind foot calcaneal erosions, hallux – vulgus deformity are found. Rheumatoid synovitis may develop in the subtaloid and midtarsal joints. Chronic arthritis in this region can lead to *“Pes Plano – Valgus deformity”*

**Knee Joints:**

Knee joint is commonly involved with synovial hypertrophy, Chronic effusion and frequently ligamentous laxity. Pain and
swelling behind the knee may be caused by extension of inflamed synovium into the popliteal space (Baker’s cyst).

Wasting of quadriceps is present, Flexion contractures may develop. Both cruciate and lateral ligaments may be destroyed, resulting in gross joint instability and vulgus deformity or varus deformity.

**Elbow and Shoulder Joints :**

Inflamed olecranon bursae and Rheumatoid nodules around the elbow are common but true rheumatoid arthritis affecting the elbows is less common. Severe destructive changes can occur leading to “**Fixed flexion deformity**”.

Pain in the shoulder can be referred from the neck or be due to involvement of acromio clavicular joint, sub acromial bursa, rotator cuff and bicipital tendon as well as the gleno humeral joint.

**Cervical spine :**

The upper cervical discs are frequently involved. The cervical vertebrae may become subluxed and this may cause serious neurological disorders.

The atlantoaxial articulations and their associated ligaments are frequently involved. Separation between the odontoid process and the first cervical vertebra exceeds the normal of 2 to 3 mm which can be detected by X-ray. They complain pain in the cervical spine which radiates upwards over the occiput and vertex to the forehead.

Atlanto axial dislocation may cause the vertebro basilar insufficiency or may produce neurological signs by direct pressure on the cord.
Extra Articular Manifestation:

General:
- Low grade fever
- Lymphadenopathy
- Weight loss
- Anorexia
- Anaemia & Lassitude

Rheumatoid Nodules:

Vasculitis:

Vasculitis most commonly occurs in Rheumatoid patients with long standing disease, significant joint involvement, positive Rheumatoid factor nodules present.

All size of blood vessels may be involved Rheumatoid vasculitis may cause cutaneous ulceration and gangrene of the digits.

- Pulmonary Manifestations
- Cardio Vascular Manifestations
- Haematological Manifestations
- Neuromuscular Manifestations
- Muscular changes
- Ocular Manifestations

Diagnosis:

The typical picture of bilateral symmetric inflammatory polyarthritis involving small and large joints in both the upper and lower extremities suggests the diagnosis.
Criteria for the diagnosis of Rheumatoid Arthritis:

- Morning Stiffness > 1 hour
- Arthritis of three or more joint areas
- Arthritis of hand joints
- Symmetrical Arthritis
- Rheumatoid nodules
- Rheumatoid factor
- Radiological Changes
- Duration of 6 weeks or more

Diagnosis of Rheumatoid Arthritis is made with four or more criteria.

Investigations:

- **Haematological**:
  - ESR – increased in active stage
  - Serum Proteins – Hyperglobulinaemia with elevation of Gammas and Alpha 2 Globulins and Hypoalbulinaemia during acute Phase.

- **Immunological**:
  - Rheumatoid Factor (RF)
  - Anti – Nuclear Antibodies.

- **Special Investigations**:
  - Synovial fluid analysis
  - Synovial biopsy
  - Radiographic Evaluation
The primary value of radiography is to determine the extent of cartilage destruction and bone erosion produced by the disease.

**Stages of X-ray progression in Rheumatoid Arthritis:**

- Periarticular osteoporosis
- Loss of articular cartilage (“joint space”)
- Erosions
- Subluxation and Ankylosis

- Arthroscopy
- Renal biopsy
- Pulmonary biopsy
- Ultra sound
- Scintigraphy
- CT scanning
- MRI
- Urine analysis
- Bio chemical analysis
- Miscellaneous

**Sero Negative Spondylarthropathy:**

Sero negative spondylarthropathy includes the following rheumatoid like conditions where the serum is negative form rheumatoid factor. They are

- Ankylosing spondylitis
- Reactive Arthritis, including Reiter’s syndrome
- Psoriatic Arthritis
- Enteropathic arthropathy.
Ankylosing spondylitis:

Ankylosing spondylitis is a chronic, progressive and crippling disease affecting the spine. The exact etiology is unclear. Ankylosing spondylitis have been found to be more prevalent in certain races and hence shows a genetic predisposition. It is related to certain tissue types of the Human Leucocyte Antigen (HLA) system. The majority of ankylosing spondylitis patients are found to belong to HLA B 27 group.

Clinical Features:

The disease occurs in the third and fourth decades of life and is more common in males. The patients present with complaints of diffuse pain in the back and vague pain in other joints.

On examination, the movements of the whole spine are limited, the sacro-spinalis muscles are in spasm, but there is no point of localized tenderness in the spine. There is tenderness over one or both sacro-iliac joints. The chest expansion is diminished to less than 5cms due to the involvement of the costovertebral joints.

In the late stages the whole spine including the cervical spine is rigid and the patient is bent forward. The classical description refers to this late stage where the patient is totally stiff and disabled with ankylosis of both hips and flexion deformity of knees. The patient is bent over with the eyes facing the ground.

One of the last joints to be affected is the temporo mandibular joint. Extra skeletal manifestations include acute iritis, aortic valve incompetence and pulmonary complications due to costovertebral ankylosis.
Diagnosis:

Criteria for diagnosis of ankylosing spondylitis (Rome, Newyork Criteria) include

- Diffuse pain in the spine of some months duration
- Limitation of all spinal movements for some months
- Diminished chest expansion

Laboratory findings:

The blood examination shows raised ESR and anaemia. The serum is negative for Rheumatoid factor. The test for HLA – B 27 is positive.

Radiological features:

The earliest changes involve the sacro-iliac joints. The joint margins become hazy and the joint space is widened. This is followed by subchondral erosion and sclerosis. In the final stages, the sacro iliac joints show total fusion.

In the early stages, the lumber spine shows in the lateral view, the filling up of the concavity of the anterior border causing a ‘squaring’ appearance of the vertebral body. Later on, extensive calcification of the anterior longitudinal ligament occurs. In the final stage, the calcification of the lateral ligaments produces the Bamboo spine appearance in the antero posterior view. The interspinous ligaments are also calcified. In the later stages, the cervical spine is also involved with fusion of posterior intervertebral joints.
Psoriatic Arthritis:

Psoriatic arthritis is a polyarthritis seen in about 10% of the patients with psoriasis. The most common type a) is the one involving the distal interphalangeal joints of the hands and feet with psoriatic nail changes. Metacarpophalangeal joints are never involved in psoriatic arthritis, b) arthritis mutilans is a severe form where there is marked destruction of joints, c) symmetrical polyarthritic type, d) oligoarthritic type, e) spondylarthritic type.

Treatment is on the same lines as for the rheumatoid arthritis along with the treatment for psoriasis.

Enteropathic Arthritis:

Chronic inflammatory bowel diseases like regional enteritis (Ochon’s disease) and ulcerative colitis are associated with arthritic lesions in about 10% of the cases. There is a peripheral polyarthritis or involvement of the spine. The joint condition shows remissions and exacerbations along with the activity of the underlying bowel disease. Treatment of the bowel disease usually clears the joint disease also.

Reiter’s Disease:

It is characterized by a triad of seronegative oligoarthritis, conjunctivitis and nonspecific urethritis, 1-3 weeks following bacterial dysentery or exposure to sexually transmitted disease. Arthritis occurring alone following sexual exposure or enteric infection is known as reactive arthritis.

Arthritogenic Bacteria in Reactive Arthritis:

- Salmonella
- Shigella
Campylobacter
Yersinia
Chlamydia

Clinical Features:

- It presents with monoarthritis of a knee or and an asymmetrical inflammatory arthritis of interphalangeal joints.
- Patients can have heel pain, Achilles tendonitis or plantar fascilitis with presence of circinate balanitis. The presence of rash of keratoderma blennorrhagica is diagnostic of Reiter’s disease in the absence of classical triad.
- Skin lesions are faint macules, vesicles and pustules on the hands and feet to marked hyperkeratosis with plaque like lesions spreading to scalp and trunk.
- Dystrophy of nail and massive subungual hyperkeratosis may be seen.
- Ocular involvement (mild bilateral conjunctivitis) subsides spontaneously within a month. Iritis can occur in 10% of cases.
- Symptomatic urethritis (mild dysuria and clear sterile discharge) is seen in most cases.
- Self limiting arthritis is seen in all cases.
- The extra articular features are
• Conjunctivitis
• Iritis
• Aortic Regurgitation
• Cardiac conduction defects
• Peripheral neuropathy

**Systemic Lupus Erythematosus (SLE):**

It is a multisystem connective tissue disease of unknown cause in which tissues and cells are damaged by pathogenic autoantibodies and immune complexes.

It is more common in women of child bearing age (male : female is 1:9).

**Etiology and Pathogenesis:**

- There is disturbance of immune regulation
- Genetic factors are involved (HLA – B8 and DR 3)
- Involvement of environmental factors (Sunlight).
- Drugs – Oestrogens, Oral contraceptives, Quinidin, INH, hydralazine, chlorpromazine, Practolol, methyldopa, Phenytoin, a interferon and procainamide (most frequent)
- Infection is thought to be one of the etiological factors.
- Immunologically – mediated tissue damage, also results.
- Miscellaneous – Ingested alfalfa sprout and chemicals like hydrazines, hair dyes are also implicated.

Autoantibodies present in patients with Systemic Lupus Erythematosus
<table>
<thead>
<tr>
<th>System involved</th>
<th>Manifestations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin</td>
<td>Fixed, erythematous rash over malar regions (Butterfly rash), discoid rash, alopecia, diffuse maculo papular rash, urticaria, erythema multiforme, lichen planus like lesions; photosensitivity, psori form lesions (subacute cutaneous lupus), oral ulcers, vasculitis.</td>
</tr>
<tr>
<td>Renal</td>
<td>Proteinuria, nephrotic syndrome, focal, proliferative glomerulo nephritis, hypocomplementememia and renal failure.</td>
</tr>
<tr>
<td>Nervous System</td>
<td>Meninges, spinal cord, cranial and peripheral nerves are involved. Patients can have cognitive dysfunction, organic brain syndromes (psychosis, neurosis), pseudotumor cerebri, extrapyramidal and cerebellar involvement. Hypothalamic dysfunction causes inappropriate ADH secretion.</td>
</tr>
<tr>
<td>Vascular</td>
<td>Thrombosis can occur due to vasculitis, antibodies against phospholipids, (lupus anticoagulant, anti cardiolipin antibodies), and immune complex mediated destruction.</td>
</tr>
<tr>
<td>Hematological</td>
<td>Anemia of chronic disease, leucopenia, mild thrombocytopenia.</td>
</tr>
<tr>
<td>Cardiopulmonary</td>
<td>Anemia of chronic disease, leucopenia, mild thrombocytopenia. Pericarditis, pericardial effusion, constrictive pericarditis, myocarditis (arrhythmias, CCF) sudden death due to MI, and Libman-sach’s endocarditis causing MR or AR. Pleurisy and Pleural effusion are common. Lupus pneumonia, interstitial fibrosis, pulmonary hypertension and ARDS can occur.</td>
</tr>
<tr>
<td>Gastrointestinal</td>
<td>Nausea, diarrhoea, vague discomfort, lupus peritonitis, vasculitis of intestine, intestinal perforation, GI motility disorders and intestinal pseudo obstruction.</td>
</tr>
<tr>
<td>Ocular</td>
<td>Retinal vasculitis, conjunctivitis, episcleritis and blindness can occur (fundus shows sheathed, narrow retinal arterioles and cystoid bodies).</td>
</tr>
<tr>
<td>Musculoskeletal system</td>
<td>Myopathy, myositis and ischemic bone necrosis are common; Arthritis, arthralgia which can be transient or persistent leading to chronic inflammatory arthritis and tenosynovitis causing deformities and contractures.</td>
</tr>
<tr>
<td>Systemic</td>
<td>Fatigue, malaise, fever, anorexia and weight loss can occur.</td>
</tr>
</tbody>
</table>
Gout:

Gout is a true crystal deposition disease. It can be defined as the pathological reaction of the joint or periarticular tissues to the presence of Monosodium Urate Monohydrate (MSUM) crystals. Clinically, this may present as inflammatory arthritis, bursitis, tenosynovitis, cellulites or as nodular (‘tophaceous’) crystal deposits. Prolonged hyperuricaemia is necessary, but is alone not sufficient, for development of gout.

Epidemiology:

The prevalence of gout varies between populations but is around 1% with a strong male predominance (> 10:1). Prevalence increases with age and increasing serum uric acid concentration. ‘Primary’ gout is almost exclusively a male disease and the most common cause of inflammatory arthritis in men over the age of 40. ‘Secondary’ gout, due to renal impairment or drug therapy, mainly affects people over the age of 65 and is the form most usually seen in women. Hyperuricaemia can be defined in two ways.

- As a serum uric acid level above the theoretical solubility of MSUM in physiological conditions (0.42 mmol/\( \ell \))

- As a serum uric acid level greater than 2 standard deviations above the mean for the population (c.0.40 mmol/\( \ell \) for men, 0.35 mmol/\( \ell \) for women).

Probably 95% of hyperuricaemic subjects never develop gout.
Clinical Features:

Acute Gout:

Typical attacks have the following characteristics:

- Extremely rapid onset, reaching maximum severity in just 2-6 hours, often waking the patient in the early morning.
- Sever pain, often described as the “worst pain ever”.
- Extreme tenderness – the patient is unable to wear shocks or to let bedding rest on the joint.
- Marked swelling with overlying red, shiny skin.
- Self limiting over 5-14 days, with complete return to normality.

Chronic tophaceous gout:

Large MSUM crystal deposits produce irregular firm nodules (“tophi”) at the usual sites for nodules around extensor surfaces of fingers, hands, forearm, elbows, Achilles tendons and sometimes the helix of the ear. Marked asymmetry, locally and between sides, is characteristic. The white colour of MSUM crystals may be evident and permit distinction from rheumatoid nodules. Large nodules may ulcerate, discharging white gritty material and associating with local inflammation (erythema, pus) even in the absence of secondary infection. Although tophi are usually a very late feature, they may appear surprisingly rapidly, in under 1 year, in patients with chronic renal failure.
The joints most commonly involved with signs of damage and varying degrees of synovitis are the first metatarsophalangeal joint, midfoot, finger joints and wrists, occasionally with severe deformity and marked functional impairment, especially of feet and hands. As with tophi, asymmetry is characteristic.

Secondary gout may present with painful, sometimes discharging tophi without preceding acute attacks. This is particularly seen in older, mainly female patients with nodal osteoarthritis who develop tophi in and around their osteoarthritic finger joints as a consequence of chronic (> 1-2 years) diuretic therapy.

**Juvenile Idiopathic Arthritis:**

Although MSK pain is prevalent in children, inflammatory arthritis is relatively rare compared to adults (<0.01% prevalence). Juvenile idiopathic arthritis (JLA) is defined as persistent (> 6 weeks) inflammatory arthritis that begins before age 16 for which no specific cause can be found. There are no specific diagnoses of exclusion. A list of some of the alternative diagnoses that may require consideration in a child with MSK pain and apparent joint swelling.

The aetiology of JLA is unknown, though both genetic and environmental factors are thought to be involved. JLA is classified according to the pattern of onset of arthritis in the first few months. This simple descriptive classification has prognostic significance and helps guide treatment selection.
<table>
<thead>
<tr>
<th>International League Against Rheumatism (ILAR) classification of Juvenile Idiopathic Arthritis</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Pattern</strong></td>
</tr>
<tr>
<td>Oligoarthritis</td>
</tr>
<tr>
<td>Persisting</td>
</tr>
<tr>
<td>Extending</td>
</tr>
<tr>
<td>Poly arthritis</td>
</tr>
<tr>
<td>Rheumatoid factor (RF) - Negative</td>
</tr>
<tr>
<td>Rheumatoid factor (RF) - Positive</td>
</tr>
<tr>
<td>Psoriatic arthritis</td>
</tr>
<tr>
<td>Enthesitis related arthritis</td>
</tr>
<tr>
<td>Systemic arthritis</td>
</tr>
<tr>
<td>Other arthritides</td>
</tr>
</tbody>
</table>

Children under the age of 16 at onset of symptoms with persistent features of arthritis for at least 6 weeks.
**Sarcoidosis:**

Acute self-limiting arthritis, presenting as polyarthralgia and erythema nodosum, may accompany the onset of acute sarcoidosis. Chronic sarcoidosis may associate with a more persistent arthritis that targets the same joints.

**Scleroderma:**

Scleroderma is a generalized disorder of connective tissue affecting the skin, internal organs and vasculature. The clinical hallmark is the presence of sclerodactyly in combination with Raynaud’s or digital ischaemia. The peak age of onset is in the fourth and fifth decades, and overall prevalence is 10-20 per 100 000 with a 4:1 female : male ratio. It is subdivided into diffuse and limited disease, the latter also termed ‘CREST syndrome’ (Calcinosis, Raynaud’s, oesophageal involvement, Sclerodactyly, Telangiectasia)

**Aetiology and pathogenesis:**

The aetiology is unknown, with no consistent genetic, geographical or racial associations. Environmental factors are important in isolated cases that result from exposure to silica dust, vinyl chloride, hypoxia resins and trichloroethylene.

Early in the disease there is skin infiltration by T lymphocytes and abnormal fibroblast activation that leads to increased production of extracellular matrix in the dermis, primarily type 1 collagen. This results in symmetrical thickening, tightening and induration of the skin (sclerodactyly). In addition to skin changes there is arterial and arteriolar narrowing due to intimal proliferation and vessel wall inflammation. This endothelial injury causes release of vasoconstrictors and platelet activation, resulting in further ischaemia.
**Polymyositis:**

The idiopathic inflammatory myopathies (IIMs) are rare connective tissue disorders defined by the presence of muscle weakness and inflammation. The incidence is 2-10 per million/year with no significant world-wide variations. The aetiology is unknown and genetic associations differ amongst ethnic groups. The most common clinical forms of IIM are polymyositis, dermatomyositis and inclusion body myositis. Other systemic autoimmune diseases such as SLE or vasculitis can also cause myositis, whilst organ specific autoimmune disease (e.g. thyroid) may impair muscle function without causing muscle inflammation. Usually only skeletal muscle is affected. Occasionally, the distribution is focal (e.g. orbital myositis).

**Juvenile Rheumatoid Arthritis:**

Juvenile Rheumatoid Arthritis (JRA) is one of the more common connective tissue diseases of children and is a major cause of functional disability in this age group. By definition, it begins before the age of 16 and most patients are diagnosed during early childhood. There is 2:1 female predominance except in the subgroup that has a systemic onset, in which the sexes are equally affected. JRA differs from R.A. in adults.

In that

- Oligo Arthritis is more common
- Systemic onset is more frequent
- Large joints are affected more than smaller joints
- Rheumatoid nodules and Rheumatoid factor are usually absent
- Antinuclear antibody seropositivity is common.
Neuropathic Arthropathy:

Aetiology:

Neuropathic joints are a chronic disease of the joint characterised by extensive disorganisation of the joint but no pain or inflammatory signs. It was first described by Charcot as a complication of tabes dorsalis and hence called Charcot’s joint.

The conditions that cause neuropathic arthropathy are,

- Tabes dorsalis – Hip, Knee
- Syringomyelia – Shoulder, elbow
- Leprosy – Ankle and foot
- Diabetes – Ankle and foot
- Iatrogenic – Repeated intra articular injections of hydrocortisone in a bad surgical environment.

The cause of this gross destruction and disintegration lies in the nervous system. It is believed to result from the loss of proprioceptive and sensory impulses from the articular structures. The joint undergoes degeneration and destructive changes due to repeated minor trauma, when the sensory and autonomic nerve supply to the joint structures are lost. This explains the total absence of pain in the neuropathic joint.

Alkaptonuric Arthritis:

Alkaptonuria is a congenital disorder of amino acid metabolism affecting the joints. The break down of the amino acid tyrosine does not go beyond the stage of homogentisic acide due to the absence of its oxidizing enzyme. Hence homogentisic acid appears in the urine. This condition is rare.
**Haemophilic Arthritis:**

Haemophilia is a disease characterised by a bleeding diathrosis due to a defect in the clotting mechanism of the blood. It is a hereditary disease affecting males but transmitted through the females. Involvement of joints is an important complication of haemophilia.

The patient is usually an adolescent boy with a history of previous bleeding episodes following cuts of tooth extraction. He presents with an acutely swollen knee or swollen hip with flexion deformity, haemorrhage into joints.

The joints usually involved are the knees, ankles, elbows and hips.

**Physical Therapy (Physiotherapy)**

Physiotherapy is the application of physical agents and principles to pathological conditions for the purpose of producing therapeutic effects.

**Physiotherapy includes**

1. Active exercise
2. Passive joint movements
3. Local heat
4. Massage
5. Electrical stimulation of Muscles
6. Ultra sound therapy
7. Light therapy, Ultraviolet rays and infrared rays.
**Exercise Therapy:**

In Rheumatoid Arthritis, Exercise therapy is extensively used to prevent deformitis and mobilise the stiff joints. Early movement will prevent the muscles from degeneration and the joints from becoming weakened and stiff.

A graduated plan of rehabilitation and muscle training is wiser. One should take as much exercise as possible but must not allow the muscles and joints to become too tired.

Active exercise is given to mobilize joints, strengthen muscles, improve co-ordination or balance.

**Passive joints movements:**

The chief use of passive joint movement is to preserve full mobility when the patient is unable to move the joint actively.

**Types of Exercise:**

1. **Range of motion Exercises / Stretching Exercises:**

Stretching exercise involve moving a joint as it will comfortably go through its full range of motion or stretch. This exercise help to maintain normal joint movement or restore movement that has been lost.

**Clinical Assessment of joint motion:**

The most widely used and recommended instrument is the universal Goniometer, sometimes called as Arthrometer. Basically, it is a protractor, to the center of which two long slender arms or levers are attached. Usually only one of the arms is movable but many variations in design are possible.

Normal values for range of motion. This offer a basis for comparison of values.
2. Strengthening Exercises:

Strengthening Exercises helps to maintain or increase the strength and power of the muscles.

3. Limbering up Exercises:

Help to reduce morning stiffness or stiffness after staying in one position too long by doing the Range-of-motion exercises each day only a few times to loosen up.

Details of Range-of-motion Exercises:

1. Upper Extremities:

   Shoulder:

   a. Arms at side with Elbow straight, bring arms forward – upward by ear.

   b. Arms at side with Elbow straight, take arms sideward – upward overhead.

   c. Arms at side bend elbow to right angle and take hands apart.

   Elbow:

   a. Bend elbow, touching fingers to top of shoulder.

   b. Straighten elbow.
**Forearm:**

Elbows bent, turn palm of the hand and then back of the hand towards face.

**Wrist:**

a. Keeping forearm steady, move the wrist up and down as in waving.

b. Again hold forearm steady, move the wrist up and down as in hand shaking.

c. Make circle with hands.

**Hand and fingers:**

a. Make tight fist

b. Open fingers as wide as possible.

c. With the hand open spread fingers away from each other and then together.

d. Touch tip of the thumb to the tip of each fingers.

e. Bend the thumb in toward palm of the hand.

2. **Lower Extremities:**

**Knee:**

Sit with your feet off the floor. Lift the leg and then allow it to return to the bent position slowly.

**Ankle:**

a. Pull foot up and in, then push back down.

b. Make circle with foot

c. Pull foot in toward other foot

d. Pull foot to outside
Materials and Methods
MATERIALS AND METHODS

The disease “Santhuvatham” has been dealt in the book *Yugi Muni Vaidhya Chindhamani*. Patients were selected according to the symptoms mentioned in Santhuvatham.

Selection of the patients:

For this clinical study 20 patients of both sexes and of varying age group suffering from Santhuvatham were selected and admitted in the In patient ward and another 20 patients were also treated with the trial medicines in the out patients department of Government Siddha Medical College, Palayamkottai.

In this study, the detailed clinical history was taken from the patients. Special attention were laid on the pain and stiffness, excessive salivation, dryness of tongue regarding their nature, site of occurrence, mode of onset and severity as loss of function. The seasonal variation and precipitating factors like emotional stress, trauma, change of climate were enquired. Constitutional symptoms like easy fatiguability, anorexia, weight loss, pyrexia were noted. Ocular complaints like conjunctivitis, iritis, keratolysis, Siogren’s syndrome, rheumatoid scleritis and genitourinary tract disorders were noted.

The socio economic status, family history and other significant disease already treated were carefully noted.

For this purpose the case sheets were prepared, based on both siddha and modern concept were maintained separately for all patients.

Investigations:

The symptoms of santhuvatham were more or less correlated with poly arthritic conditions of (Rheumatological and collagen
diseases) in modern medicine. So investigations meant for such diseases were done for santhuvatham also. Some of these are routine blood tests, urine tests, stools examination and specific tests such as rheumatoid arthritis factor, radiographic evaluation etc. Besides this blood sugar, blood urea, serum cholesterol were also investigated.

On the basis of these investigations modern diagnosis and parallel siddha diagnosis was made with the help of the following criteria, the mukkutra nilaigal, envagaithervugal, elu udal kattugal, nilam, mummalam, kalam, vayathu etc.

Investigations were found to be useful in assessing the progress of the disease and prognosis of the patient.

Thus the patients were selected and managed as follows.

**Evaluation of the trial medicine:**

The medicines selected for the dissertation were subjected to pharmacological and Bio-chemical analysis. The analysis were made in the pharmacology and Bio-chemistry departments of Government siddha medical college, palayamkottai.

**Management:**

“இயற்றாரால் வெறும் காலம்”

The vitiated Vatham can be brought down by a laxative (or) purgative since santhu vatham is a vatha disease, nilavagi choornam was used as a laxative. All the patients were given 10gm of nilavagai choornam with hot water at bed time for only one day.

For the dissertation work Ichchura Mooli Chooranam and Erivatha Thylam are the specific medicines selected. All the two medicines were prepared (on by myself) in the post graduate practical hall with the knowledge of my teaching staffs of the post – graduate department.
Results and Observations
RESULTS AND OBSERVATION

Results were observed with respect to the following criteria.

- Sex distribution.
- Age distribution.
- Kaalam.
- Socio-Economic status.
- Paruva Kalam.
- Thinai.
- Aetiological factors.
- Mode of Onset.
- Clinical Manifestations
- Systemic Examination
- Incident of poly Arthritic conditions.
- Gradation of pain, Joint swelling and Restricted movements.
- Incidents of individual joint involvement.
- Deformities of joints.
- Disturbances of vatha, pitha and kapha
- Conditions of Udal Thathukkal.
- Condition of Envagai Thervugal.
- Grading of Arthritis.
- Gradation of Results.
- Radio graphic Findings.
1. Sex Distribution :-

**Table 1 : Illustrates Sex distributions and its relative percentage**

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Sex</th>
<th>In Patients (IP)</th>
<th>Out Patients (OP)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>No. of Cases</td>
<td>Percentage</td>
</tr>
<tr>
<td>1.</td>
<td>Male</td>
<td>10</td>
<td>50</td>
</tr>
<tr>
<td>2.</td>
<td>Female</td>
<td>10</td>
<td>50</td>
</tr>
</tbody>
</table>

➢ From the above table, it is clear females were mostly affected than males.

2. Age Distribution :-

**Table 2 : Illustrates the age distribution and its relatives percentage**

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Age group in year</th>
<th>In Patients (IP)</th>
<th>Out Patients (OP)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>No. of Cases</td>
<td>Percentage</td>
</tr>
<tr>
<td>1.</td>
<td>1-20</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2.</td>
<td>21-30</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3.</td>
<td>31-40</td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td>4.</td>
<td>41-50</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>5.</td>
<td>51-60</td>
<td>9</td>
<td>45</td>
</tr>
<tr>
<td>6.</td>
<td>Above 60</td>
<td>7</td>
<td>35</td>
</tr>
</tbody>
</table>

➢ The above table shows that 45% of IP patients were in the age group of 51-60 years and 40% of OP patients were in the age group of 41-50 years.
3. Kalam :-

In siddha literature age of individual is fixed as 100 and into 3 kalam as,

- Vatha kalam – first 33 years & 4 months
- Pitha kalam – Second 33 years & 4 months
- Kapha kalam – Third 33 years & 4 months

The data given below are according to the patient’s age during admission.

**Table 3 : Illustrates the kalam**

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Kalam</th>
<th>In Patients (IP)</th>
<th>Out Patients (OP)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>No. of Cases</td>
<td>Percentage</td>
</tr>
<tr>
<td>1.</td>
<td>Vatha kalam</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2.</td>
<td>Pitha kalam</td>
<td>17</td>
<td>85</td>
</tr>
<tr>
<td>3.</td>
<td>Kapha Kalam</td>
<td>3</td>
<td>15</td>
</tr>
</tbody>
</table>

- It is seen that most of the cases were in pitha kalam.

4. Socio – Economic Status :-

**Table 4 : Illustrates the socio-economic status**

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Socio – economic Status</th>
<th>In Patients (IP)</th>
<th>Out Patients (OP)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>No. of Cases</td>
<td>Percentage</td>
</tr>
<tr>
<td>1.</td>
<td>Rich</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2.</td>
<td>Middle Class</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3.</td>
<td>Poor</td>
<td>20</td>
<td>100</td>
</tr>
</tbody>
</table>

- From the above table cent percent of IP patients and 90% of OP patients were belonged to poor socio-economic status.
5. Paruva Kalam :-

Table 5 : Illustrates the incidence of the disease

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Paruva Kalam</th>
<th>Months</th>
<th>In Patients (IP)</th>
<th>Out Patients (OP)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>No. of Cases</td>
<td>Percentage</td>
<td>No. of Cases</td>
</tr>
<tr>
<td>1.</td>
<td>Kar Kalam</td>
<td>Aavani, Purattasi</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2.</td>
<td>Koothir Kalam</td>
<td>Iyppasi, Karthigai</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3.</td>
<td>Munpani Kalam</td>
<td>Markazhi, Thai</td>
<td>7 35</td>
<td>12 60</td>
</tr>
<tr>
<td>4.</td>
<td>Pinpani Kalam</td>
<td>Masi, Panguni</td>
<td>10 50</td>
<td>7 35</td>
</tr>
<tr>
<td>5.</td>
<td>Elavenil Kalam</td>
<td>Chithirai, Vaikasi</td>
<td>3 15</td>
<td>1 5</td>
</tr>
<tr>
<td>6.</td>
<td>Muthuvenil Kalam</td>
<td>Aani, Aadi</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

➢ The above table shows that 50% of IP patients were admitted in Pinpani Kalam and 60% of OP patients were treated in Munpani Kalam.

6. Thinai (The habitat of the patients) :-

Table 6 : Illustrates the Thinai

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Thinai</th>
<th>In Patients (IP)</th>
<th>Out Patients (OP)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>No. of Cases</td>
<td>Percentage</td>
</tr>
<tr>
<td>1.</td>
<td>Kurinji</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2.</td>
<td>Mullai</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3.</td>
<td>Marutham</td>
<td>20 100</td>
<td>20 100</td>
</tr>
<tr>
<td>4.</td>
<td>Neithal</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>5.</td>
<td>Palai</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

➢ All the cases were from Marutha Nilam.
7. Aetiological Factors :-

Table 7 : Illustrates the Aetiological Factors

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Precipitating Factors</th>
<th>In Patients (IP)</th>
<th>Out Patients (OP)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>No. of Cases</td>
<td>Percentage</td>
</tr>
<tr>
<td>1.</td>
<td>Positive family history</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>2.</td>
<td>Positive previous history</td>
<td>4</td>
<td>20</td>
</tr>
<tr>
<td>3.</td>
<td>Miscellaneous</td>
<td>14</td>
<td>70</td>
</tr>
</tbody>
</table>

- The above table shows that 70% of IP patients and 65% of OP patients had miscellaneous reasons.

8. Mode of Onset :-

Table 8 : Illustrates the Mode of onset

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Mode of Onset</th>
<th>In Patients (IP)</th>
<th>Out Patients (OP)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>No. of Cases</td>
<td>Percentage</td>
</tr>
<tr>
<td>1.</td>
<td>Acute</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>2.</td>
<td>Gradual</td>
<td>19</td>
<td>95</td>
</tr>
</tbody>
</table>

- The table shows that 95% of IP patients and 90% of OP patients had gradual onset.
9. Clinical Manifestations :-

Table 9 : Illustrates the Symptoms

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Symptoms</th>
<th>In Patients (IP)</th>
<th>Out Patients (OP)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>No. of Cases</td>
<td>Percentage</td>
</tr>
<tr>
<td>1.</td>
<td>Joint Stiffness</td>
<td>20</td>
<td>100</td>
</tr>
<tr>
<td>2.</td>
<td>Pain on extremities</td>
<td>20</td>
<td>100</td>
</tr>
<tr>
<td>3.</td>
<td>Body pain</td>
<td>19</td>
<td>95</td>
</tr>
<tr>
<td>4.</td>
<td>Inflammatory symptoms of joints</td>
<td>20</td>
<td>100</td>
</tr>
<tr>
<td>5.</td>
<td>Functional disability of extremities</td>
<td>20</td>
<td>100</td>
</tr>
<tr>
<td>6.</td>
<td>Sleeplessness</td>
<td>15</td>
<td>75</td>
</tr>
<tr>
<td>7.</td>
<td>Fever</td>
<td>6</td>
<td>30</td>
</tr>
<tr>
<td>8.</td>
<td>Loss of appetite</td>
<td>8</td>
<td>40</td>
</tr>
<tr>
<td>9.</td>
<td>Loss of weight</td>
<td>4</td>
<td>20</td>
</tr>
<tr>
<td>10.</td>
<td>Constipation</td>
<td>18</td>
<td>90</td>
</tr>
<tr>
<td>11.</td>
<td>Easy fatiguability</td>
<td>20</td>
<td>100</td>
</tr>
</tbody>
</table>

➢ From the above table cent percent of IP and OP patients had joint stiffness, pain on extremities, inflammatory symptoms of joints, functional disability of extremities and easy fatiguability.

101
10. Systemic Examination :-

Table 10 : Illustrates signs of Systemic Examination

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Signs</th>
<th>In Patients (IP)</th>
<th>Out Patients (OP)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>No. of Cases</td>
<td>Percentage</td>
</tr>
<tr>
<td>1.</td>
<td>Subcutaneous nodules</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>2.</td>
<td>Muscle wasting</td>
<td>5</td>
<td>25</td>
</tr>
<tr>
<td>3.</td>
<td>Ophthalmic Manifestation</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>4.</td>
<td>Hepatomegaly</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>5.</td>
<td>Splenomegaly</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>6.</td>
<td>Respiratory system</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>7.</td>
<td>Cardiovascular system</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>8.</td>
<td>Central nervous system</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

The above signs were observed in the systemic involvement of Poly Arthritis patients.

- Out of 20 In Patients, 5% of cases had subcutaneous nodules, 25% of cases had Muscle wasting and out of 20 Out Patients, 10% of cases had subcutaneous nodules, 20% of cases had Muscle wasting.
11. Incidence of Poly Arthritic conditions :-

Table 11 : Illustrates Incidence of types of Poly Arthritis

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Types of Arthritis</th>
<th>In Patients (IP)</th>
<th>Out Patients (OP)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>No. of Cases</td>
<td>Percentage</td>
</tr>
<tr>
<td>1.</td>
<td>Rheumatoid Arthritis</td>
<td>5</td>
<td>25</td>
</tr>
<tr>
<td>2.</td>
<td>Ankylosing spondylitis</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3.</td>
<td>Reiter’s Syndrome</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>4.</td>
<td>Psoriatic Arthritis</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>5.</td>
<td>Enteropathic Arthritis</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>6.</td>
<td>Postmenopausal Arthritis</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>7.</td>
<td>Osteo Arthritis</td>
<td>15</td>
<td>75</td>
</tr>
<tr>
<td>8.</td>
<td>Reactive Arthritis</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

➢ Out of 20 In Patients and 20% Out Patients, 75% of cases had resemblance of Osteo Arthritis and 25% of cases had resemblance of Rheumatoid Arthritis.

12. Gradation of Pain, Joint Swelling and Restricted Movements :-

Table 12 : Illustrates Grades of Signs and Symptoms

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Signs and Symptoms</th>
<th>In Patients (IP)</th>
<th>Out Patients (OP)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>No. of cases and Percentage</td>
<td>No. of cases and Percentage</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Mild</td>
<td>Moderate</td>
</tr>
<tr>
<td>1.</td>
<td>Pain</td>
<td>4 (20%)</td>
<td>9 (45%)</td>
</tr>
<tr>
<td>2.</td>
<td>Joint Swelling</td>
<td>4 (20%)</td>
<td>10 (50%)</td>
</tr>
<tr>
<td>3.</td>
<td>Restricted Movements</td>
<td>5 (25%)</td>
<td>8 (40%)</td>
</tr>
<tr>
<td>4.</td>
<td>Muscle Wasting</td>
<td>2 (10%)</td>
<td>3 (15%)</td>
</tr>
</tbody>
</table>
13. Incidents of individual Joint involvement :-

Table 13 : Illustrates incidents of Joints involvement

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Joints involved</th>
<th>In Patients (IP)</th>
<th>Out Patients (OP)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>No. of Cases</td>
<td>Percentage</td>
</tr>
<tr>
<td>1</td>
<td>Distal interphalangeal joint</td>
<td>5</td>
<td>25</td>
</tr>
<tr>
<td>2</td>
<td>Proximal interphalangeal joint</td>
<td>5</td>
<td>25</td>
</tr>
<tr>
<td>3</td>
<td>Metacarpophalangeal Joint</td>
<td>5</td>
<td>25</td>
</tr>
<tr>
<td>4</td>
<td>Wrist Joint</td>
<td>5</td>
<td>25</td>
</tr>
<tr>
<td>5</td>
<td>Elbow joint</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>6</td>
<td>Shoulder joint</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>7</td>
<td>Temporomandipular Joint</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>8</td>
<td>Sternoclavicular Joint</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>9</td>
<td>Cervical spine</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>10</td>
<td>Hip joint</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>11</td>
<td>Knee joint</td>
<td>20</td>
<td>100</td>
</tr>
<tr>
<td>12</td>
<td>Ankle joint</td>
<td>4</td>
<td>20</td>
</tr>
<tr>
<td>13</td>
<td>Metatarsophalangeal joint</td>
<td>4</td>
<td>20</td>
</tr>
<tr>
<td>14</td>
<td>Lumbar Spine</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>15</td>
<td>Thoracic Spine</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
### 14. Deformities of Joints :-

**Table 14: Illustrates Deformities of Joints**

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Deformities of joints</th>
<th>In Patients (IP)</th>
<th>Out Patients (OP)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>No. of Cases</td>
<td>Percentage</td>
</tr>
<tr>
<td>1.</td>
<td>Interphalangeal Joint</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>2.</td>
<td>Metacarpophalangeal Joint</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>3.</td>
<td>Wrist Joint</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>4.</td>
<td>Elbow Joint</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>5.</td>
<td>Shoulder Joint</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>6.</td>
<td>Hip Joint</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>7.</td>
<td>Knee Joint</td>
<td>10</td>
<td>50</td>
</tr>
<tr>
<td>8.</td>
<td>Ankle Joint</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>9.</td>
<td>Metatarso phalangeal Joint</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>10.</td>
<td>Spine</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
15. Disturbances of Vatha, Pitha and Kapha :-

Table 15 : Illustrates the Disturbances of Mukkuttam

<table>
<thead>
<tr>
<th>Particulars</th>
<th>In Patients (IP)</th>
<th>Out Patients (OP)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No. of cases</td>
<td>Percentage</td>
</tr>
<tr>
<td><strong>Vatham</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Piranan</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Abanan</td>
<td>18</td>
<td>90</td>
</tr>
<tr>
<td>Viyanan</td>
<td>20</td>
<td>100</td>
</tr>
<tr>
<td>Uthanan</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Samanan</td>
<td>20</td>
<td>100</td>
</tr>
<tr>
<td>Nagan</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Koorman</td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td>Kirukaran</td>
<td>8</td>
<td>40</td>
</tr>
<tr>
<td>Devathathan</td>
<td>15</td>
<td>75</td>
</tr>
<tr>
<td>Dhananjeyan</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td><strong>Pitham</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Anarpitham</td>
<td>8</td>
<td>40</td>
</tr>
<tr>
<td>Ranjagapitham</td>
<td>10</td>
<td>50</td>
</tr>
<tr>
<td>Prasakapitham</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>Alosakam</td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td>Sathagam</td>
<td>20</td>
<td>100</td>
</tr>
<tr>
<td><strong>Kapham</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Avalambagam</td>
<td>20</td>
<td>100</td>
</tr>
<tr>
<td>Kilethagam</td>
<td>8</td>
<td>40</td>
</tr>
<tr>
<td>Pothagam</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Tharpagam</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Santhegam</td>
<td>20</td>
<td>100</td>
</tr>
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</table>
16. Conditions of Udal Thathukkal :-

Table 16 : Illustrates the conditions of Udal Thathukkal

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Udal Thathukkal</th>
<th>In Patients (IP)</th>
<th>Out Patients (OP)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>No. of cases</td>
<td>Percentage</td>
</tr>
<tr>
<td>1.</td>
<td>Saram</td>
<td>20</td>
<td>100</td>
</tr>
<tr>
<td>2.</td>
<td>Senneer</td>
<td>20</td>
<td>100</td>
</tr>
<tr>
<td>3.</td>
<td>Oohn</td>
<td>20</td>
<td>100</td>
</tr>
<tr>
<td>4.</td>
<td>Kozhuppu</td>
<td>20</td>
<td>100</td>
</tr>
<tr>
<td>5.</td>
<td>Enbu</td>
<td>20</td>
<td>100</td>
</tr>
<tr>
<td>6.</td>
<td>Moolai</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>7.</td>
<td>Sukkilam / suronitham</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

➢ Out of 20 In Patients and 20 Out Patients Saram, Senneer, Oohn, Kozhuppu and Enbu were affected in 100% of cases.

17. Conditions of Envagai Thervugal :-

Table 17 : Illustrates the conditions of Envagai Thervugal

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Envagai Thervugal</th>
<th>In Patients (IP)</th>
<th>Out Patients (OP)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>No. of cases</td>
<td>Percentage</td>
</tr>
<tr>
<td>1.</td>
<td>Naadi</td>
<td>20</td>
<td>100</td>
</tr>
<tr>
<td></td>
<td>(Vathakalappu)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Sparisam</td>
<td>20</td>
<td>100</td>
</tr>
<tr>
<td>3.</td>
<td>Naa</td>
<td>10</td>
<td>50</td>
</tr>
<tr>
<td>4.</td>
<td>Niram</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>5.</td>
<td>Mozhi</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>6.</td>
<td>Vizhi</td>
<td>3</td>
<td>15</td>
</tr>
<tr>
<td>7.</td>
<td>Malam</td>
<td>18</td>
<td>90</td>
</tr>
<tr>
<td>8.</td>
<td>Moothiram</td>
<td>20</td>
<td>100</td>
</tr>
</tbody>
</table>
Out of 20 In Patients, 65% of cases were Vatha Pitha Naadi. 35% of cases were Pitha Vatha Naadi. Sparisam was affected in 100% of cases. Naa was affected in 50% of cases. Malam was affected in 90% of cases. Niram was affected in 5% of cases. Vizhi was affected in 50% of cases. Moothiram was affected in 100% of cases. In all 20 cases. Neerkuri and Neikuri were studied. Neerkuri was found to be normal in all cases. Neikuri showed that the oil dropped in to the urine spreaded like “Aazhiyil Aravu” (35%) and “Aravil Aazhi” (65%).

Out of 20 Out Patients, 80% of cases were Vatha Pitha Naadi. 20% of cases were Pitha Vatha Naadi. Sparisam was affected in 100% of cases. Naa was affected in 50% of cases and Malam was affected in 40% of cases. Vizhi was affected in 10% of cases. Moothriram was affected in 100% of cases. Neerkuri was found to be normal in all cases. Neikuri showed that the oil dropped in to the urine spreaded like “Aazhiyil Aravu” (20%) and “Aravil Aazhi” (80%).
18. Grading of Arthritis :-

Table 18 : Illustrates Grading of poly Arthritis

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Grade</th>
<th>In Patients (IP)</th>
<th>Out Patients (OP)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>No. of cases</td>
<td>Percentage</td>
</tr>
<tr>
<td>1.</td>
<td>I</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2.</td>
<td>II</td>
<td>13</td>
<td>65</td>
</tr>
<tr>
<td>3.</td>
<td>III</td>
<td>6</td>
<td>30</td>
</tr>
<tr>
<td>4.</td>
<td>IV</td>
<td>1</td>
<td>5</td>
</tr>
</tbody>
</table>

**Grade I** : No restriction of ability to perform normal activities.

**Grade II** : Moderate restriction but with an ability to perform most activities of daily activity.

**Grade III** : Marked restriction with an inability of perform most activities of daily living and occupation.

**Grade IV** : In capacitation with confinement to bed or wheel chair.

Out of 20 In Patients,

- 65% of cases belonged to Grade II
- 30% of cases belonged to Grade III and
- 5% of case belonged to Grade IV

Out of 20 Out Patients,

- 70% of cases belonged to Grade II and
- 30% of cases belonged to Grade III
Assessment of the Effect of Therapy:

The patients were treated for about 41 days to 64 days with the trial medicines. At the end of the treatment the results were categorised as follows,

**Good**: Complete, Subsidence of Pain and Disappearance of Swelling.

**Fair**: Relief of pain, Reduction in Swelling and Increasing Range of Movements.

**Poor**: No Improvement.

19. Grading of Results:

**Table 19**: Illustrates Grading of Results

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Grade</th>
<th>In Patients (IP)</th>
<th>Out Patients (OP)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>No. of cases</td>
<td>Percentage</td>
</tr>
<tr>
<td>1.</td>
<td>Good</td>
<td>2</td>
<td>10</td>
</tr>
<tr>
<td>2.</td>
<td>Fair</td>
<td>17</td>
<td>85</td>
</tr>
<tr>
<td>3.</td>
<td>Poor</td>
<td>1</td>
<td>5</td>
</tr>
</tbody>
</table>

- Out of 20 In Patients, 10% of cases showed good response. 85% of cases showed fair response. 5% of cases showed poor response.
- Out of 20 Out Patients, 15% of cases showed good response. 70% of cases showed fair response. 15% of cases showed poor response.
20. **Radio graphic Findings :**

**Table 1 : Illustrates Radio graphic findings (IP)**

<table>
<thead>
<tr>
<th>S. No.</th>
<th>IP No.</th>
<th>X-Ray</th>
<th>Probable Diagnosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>913</td>
<td>Both Knee joints – Ap view</td>
<td>Bil OA</td>
</tr>
<tr>
<td>2.</td>
<td>181</td>
<td>Both Knee joints – Ap view</td>
<td>Bil OA</td>
</tr>
<tr>
<td>3.</td>
<td>185</td>
<td>Both Knee joints – Ap view</td>
<td>Bil OA</td>
</tr>
<tr>
<td>4.</td>
<td>1191</td>
<td>Both hands with wrist joints - Ap view</td>
<td>RA</td>
</tr>
<tr>
<td>5.</td>
<td>1131</td>
<td>Both Knee joints – Ap view</td>
<td>Bil OA</td>
</tr>
<tr>
<td>6.</td>
<td>937</td>
<td>Both Knee joints – Ap view</td>
<td>Bil OA</td>
</tr>
<tr>
<td>7.</td>
<td>795</td>
<td>Both Knee joints – Ap view</td>
<td>Bil OA</td>
</tr>
<tr>
<td>8.</td>
<td>778</td>
<td>Both hands with wrist joints - Ap view</td>
<td>RA</td>
</tr>
<tr>
<td>9.</td>
<td>763</td>
<td>Both Knee joints – Ap view</td>
<td>Bil OA</td>
</tr>
<tr>
<td>10.</td>
<td>282</td>
<td>Both Knee joints – Ap view</td>
<td>Bil OA</td>
</tr>
<tr>
<td>11.</td>
<td>800</td>
<td>Both hands with wrist joints - Ap view</td>
<td>RA</td>
</tr>
<tr>
<td>12.</td>
<td>231</td>
<td>Both Knee joints – Ap view</td>
<td>Bil OA</td>
</tr>
<tr>
<td>13.</td>
<td>113</td>
<td>Both Knee joints – Ap view</td>
<td>Bil OA</td>
</tr>
<tr>
<td>14.</td>
<td>14</td>
<td>Both Knee joints – Ap view</td>
<td>Bil OA</td>
</tr>
<tr>
<td>15.</td>
<td>1329</td>
<td>Both Knee joints – Ap view</td>
<td>Bil OA</td>
</tr>
<tr>
<td>16.</td>
<td>952</td>
<td>Both hands with wrist joints - Ap view</td>
<td>RA</td>
</tr>
<tr>
<td>17.</td>
<td>777</td>
<td>Both Knee joints – Ap view</td>
<td>Bil OA</td>
</tr>
<tr>
<td>18.</td>
<td>704</td>
<td>Both Knee joints – Ap view</td>
<td>Bil OA</td>
</tr>
<tr>
<td>19.</td>
<td>703</td>
<td>Both hands with wrist joints - Ap view</td>
<td>RA</td>
</tr>
<tr>
<td>20.</td>
<td>284</td>
<td>Both Knee joints – Ap view</td>
<td>Bil OA</td>
</tr>
</tbody>
</table>
## Table 2: Illustrates Radio graphic findings (OP)

<table>
<thead>
<tr>
<th>S. No.</th>
<th>OP No.</th>
<th>X-Ray</th>
<th>Probable Diagnosis</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>75980</td>
<td>Both Knee joints – Ap view</td>
<td>Bil OA</td>
</tr>
<tr>
<td>2.</td>
<td>75286</td>
<td>Both Knee joints – Ap view</td>
<td>Bil OA</td>
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<tr>
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<td>Bil OA</td>
</tr>
<tr>
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<td>23883</td>
<td>Both Knee joints – Ap view</td>
<td>Bil OA</td>
</tr>
<tr>
<td>5.</td>
<td>21885</td>
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<td>Bil OA</td>
</tr>
<tr>
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<td>23224</td>
<td>Left Knee joint – Ap view</td>
<td>OA (Left)</td>
</tr>
<tr>
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<td>74703</td>
<td>Both Knee joints – Ap view</td>
<td>Bil OA</td>
</tr>
<tr>
<td>8.</td>
<td>75736</td>
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<td>Bil OA</td>
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<td>Bil OA</td>
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<td>23882</td>
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<tr>
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<td>27728</td>
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<td>Bil OA</td>
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<tr>
<td>14.</td>
<td>26343</td>
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<td>RA</td>
</tr>
<tr>
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<td>3312</td>
<td>Both hands with wrist joints - Ap view</td>
<td>RA</td>
</tr>
<tr>
<td>16.</td>
<td>1786</td>
<td>Both hands with wrist joints - Ap view</td>
<td>RA</td>
</tr>
<tr>
<td>17.</td>
<td>1785</td>
<td>Both hands with wrist joints - Ap view</td>
<td>RA</td>
</tr>
<tr>
<td>18.</td>
<td>1787</td>
<td>Both hands with wrist joints - Ap view</td>
<td>RA</td>
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<tr>
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<td>Age/Sex</td>
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<td>Sankaran</td>
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<td>284</td>
<td>Gomathi</td>
<td>64/F</td>
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## LABORATORY INVESTIGATION REPORTS (IP)

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<th>ESR</th>
<th>HB%</th>
<th>Blood</th>
<th>Urine</th>
<th>Stool</th>
<th>Serum Cholesterol</th>
<th>Blood urea mg%</th>
<th>RA Factor</th>
</tr>
</thead>
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<td></td>
<td>P</td>
<td>L</td>
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<td>T 1 hr</td>
<td>A ½ hr</td>
<td>T 1 hr</td>
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Discussion
DISCUSSION

Among 80 Vatha diseases, **Santhuvatham** is one of the Rheumatic conditions characterized by stiffness and inflammation of joints, body pain, lethargy, lassitude, along with pillor erection of skin and salivary secretory defects. Particulary upper and lower extremities and their functions are affected, resulting inability to stand firmly. So Vatha diseases have received more attention and good prognosis in the field of Alternative medicine, especially in Siddha medicine.

Santhuvatham is correlated to inflammatory poly arthritic conditions, characteristically upper and lower extremities involvement.

Groups of inflammatory arthritis such as seronegative and seropositive Rheumatoid Arthritis and degenerative type of arthritis such as Osteo Arthritis cases also have above-mentioned clinical manifestations.

20 In Patients and 20 Outpatients were subjected on this study results can be discussed as follows.

**Sex Distribution :**

Among 20 In Patients and 20 Outpatients, 18 were males ad 22 females. From this study the sex incidence was higher in females than in males, indicating Santhuvatham is predominant in females.
**Age Distribution:**

Among 20 In Patients, 15% of cases were in the age between 31-40 years. 5% of cases were between 41-50 years. 45% of cases were between 51-60 years. 35% of cases were above 60 years.

Among 20 Out Patients, 15% of cases between 21-30 years. 40% of cases between 41-50 years. 15% of cases between 51-60 years and 30% of cases were above 60 years.

The incidence of the disease was more predominant in 6th, 5th and 4th decades. According to the literatures no age group is exempted for Santhuvatham, but usual incidence of Rheumatoid Arthritis is during 4th and 5th decade. The clinical study also coincides with it. For Osteo Arthritis after 40 years.

**Kalam:**

Among 20 In Patients,

- Pitha Kalam – 85%
- Kapha Kalam – 15%

Among 20 Out Patients,

- Vatha Kalam – 15%
- Pitha Kalam – 70%
- Kapha Kalam – 15%

According to this concept maximum numbers of cases were noted in Pitha Kalam, which is the time between 33 years & 4 months – 66 years & 8 months which coincides very well with that of modern concept of age i.e. 4th and 5th decades.
**Socio–economic status:**

20 In Patients and 18 Out Patients were belonged to poor class.

Poor patients were mostly affected because of physical and mental stress and poor resistance.

**Paruvakalam:**

Among 20 In Patients, 35% of cases were admitted in Munpani Kalam. 50% of cases were admitted in Pinpani Kalam and 15% of cases were admitted in Elavenil Kalam.

Among 20 Out Patients, 60% of cases were treated in Munpani Kalam. 35% of cases were treated in Pinpani Kalam and 5% of cases were treated in Elavenil Kalam.

According to siddha system, Koothir Kalam is a season for vatha diseases. But this incidence may be due to the alteration in the food habit and their activities.

**Thinai:**

Among 20 In Patients and 20 Out Patients, all cases were admitted from Marutha Nilam.

Marutha Nilam is the area where the severity of the disease is less. But this incidence may be due to the alteration in the food habit and their activities.
Aetiology:

Among 20 In Patients, 10% of cases had a positive family history. 20% of cases had a positive previous history and rest of the persons affected by miscellaneous reasons.

Among 20 Out Patients, 10% of cases had a positive family history. 25% of cases had a positive previous history and rest of the persons affected by miscellaneous reasons.

Mode of onset:

Among 20 In Patients, the Onset of the disease was acute in 5% and gradual in 95% of cases.

Among 20 Out Patients, the Onset of the disease was acute in 10% and gradual in 90% of cases.

The incidence was more in gradual onset as indicated on literatures.

The clinical trail coincides with it.

Clinical Manifestations:

Santhuvatham is present with stiffness of joints and inflammatory signs and symptoms like Pain, Swelling, Restriction of movements and extra articular manifestations.

Among 20 In Patients, cent percent of cases had joint stiffness, pain on extremities, inflammatory symptoms of joints, functional disability of extremities and easy fatiguability. 95% of cases had body pain. 75% of cases had sleeplessness. 30% of
cases had fever. 40% of cases had loss of appetite. 20% of cases had loss of weight and 90% of cases had constipation.

Among 20 Out Patients, cent percent of cases had joint stiffness, pain on extremities, inflammatory symptoms of joints, functional disability of extremities and easy fatiguability. 90% of cases had body pain and 50% of cases had sleeplessness. 10% of cases had loss of appetite. 20% of cases had fever. 10% of cases had loss of weight and 40% of cases had constipation.

Joint pain was assessed by the words of the patients and was classified into mild, moderate and severe.

Among 20 In Patients, mild pain was observed in 20% of cases, moderate pain was observed in 45% of cases, severe pain was observed in 35% of cases.

Among 20 Out Patients, mild pain was observed in 25% of cases, moderate pain was observed in 50% of cases, severe pain was observed in 25% of cases.

Swellings of the joints were noticed in all cases. Swellings of the joints were measured by means of a non elastic measurable tape. Areas of maximum level of swelling around the joints were measured both before and after the treatment. The joints subjected to measurements were both knee joints, ankle joints, wrist joints, proximal inter phalangeal joints of index fingers, middle fingers and little fingers.

The degree of joints swelling was observed with respect to the constitution (thin, obese, medium built) of the body.
Among 20 In Patients, mild swelling was measured in 20% cases, moderate swelling was measured in 50% of cases and severe swelling was measured in 30% of cases.

Among 20 Out Patients, mild swelling was measured in 20% of cases, moderate swelling was measured in 45% of cases and severe swelling was measured in 35% of cases.

A measurement taken after treatment reveals that 80% of cases under regular treatment had marked reduction in swelling. 15% of cases had mild reduction and 5% showed no signs of improvement.

Almost all the patients experienced early morning stiffness, ranging approximately from 30 minutes to 4 hours. After treatment, it gradually came down to 20-30 minutes.

Restricted movements or decreased range of movements were seen in 100% of cases. Since facilities are inadequate, (Gonio meter) restricted movements of patients were assessed by asking the patients to move the joint in a particular direction. When the active movements of the joint were impossible, movements were considered as restricted or decreased range of motion.

Improvement was also assessed by the gradual reduction of time taken to walk a distance of about 100 feet after treatment. After treatment with trial medicines along with physiotherapy, in most of the cases increased range of movement was observed.

**Incidence of individual joint involvement:**

Among 20 In Patients, Distal interphalangeal joint, proximal interphalangeal joint, metacarpo phalangeal joints, wrist joint were
involved in 25% of cases. Ankle joint and metatarsophalangeal joints were involved in 20% of cases. Elbow joint was involved in 5% of cases. Knee joint was involved in cent percent of cases.

Among 20 Out Patients, Distal interphalangeal joint, proximal interphalangeal joint, metacarpophalangeal joints, wrist joint were involved in 25% of cases. Ankle joint and metatarsophalangeal joints were involved in 10% of cases. Knee joint was involved in cent percent of cases.

**Deformities of Joints :**

Among 20 In Patients, 10% of cases had deformity in the interphalangeal joints, metacarpophalangeal joints. 50% of cases had deformity in knee joints.

Among 20 Out Patients, 5% of cases had deformity in the interphalangeal joints, metacarpophalangeal joints. 40% of cases had deformity in knee joints.

**Elicitation of extra articular manifestations :**

Apart from the symptoms told by the patient, certain signs were also elicited. These included examination of the liver, spleen for enlargement, presence of subcutaneous nodules, respiratory symptoms, cardiovascular symptoms, muscle wasting, reflexes, ophthalmic manifestations etc were noted.

Among 20 In Patients, 5% of cases had subcutaneous nodules, 25% of cases had muscle wasting.

Among 20 Out Patients, 10% of cases had subcutaneous nodules 20% of cases had muscle wasting.
Hepatomegaly, splenomegaly were not present in any case. Likewise, Cardiovascular symptoms were not present.

**Uyirthathukkal:**

Uyirthathukkal constitute three vital humours mentioned in siddha system, namely Vatha, Pitha and Kapha. Disturbances in uyirthathukkal leads to disease entities and are discussed here.

**Disturbances in vatham:**

Among 20 In Patients, Abanan was affected in 90% of cases produces constipation. Viyanan was affected in cent percent of cases produces pain and restriction of movements of the joints. Samanan was affected in 100% of cases produces loss of appetite, indigestion and it neutralizes other vayus. Koorman was affected in 15% of cases produces blurring of vision. Kirukaran was affected in 40% of cases produces loss of appetite, excessive salivation and dryness of tongue. Devathathan was affected in 75% of cases produces insomnia.

Among 20 Out Patients, Abanan was affected in 40% of cases. Viyanan was affected in 100% of cases. Samanan was affected in 100% of cases. Koorman and Kirukaran were affected in 10% of cases. Devathathan was affected in 50% of cases. Uthanan, Nagan and Dhananjeyan were found to be normal in both In Patients and Out Patients.

**Disturbances in Pitham:**

Among 20 In Patients, Anarpitham was affected in 40% of cases produces loss of appetite and indigestion. Ranjagaitham was affected in 50% of cases produces deceased Hb percentage.
Prasakapitham was affected in 10% of cases produces pallor of the skin. Alosakapitham was affected in 15% of cases produces blurring of vision. Sathagapitham was affected in cent percent of cases produces unable to carry out their regular works properly.

Among 20 Out Patient, Anarpitham was affected in 10% of cases. Ranjagapitham was affected in 50% of cases. Alosakapitham was affected in 10% of cases. Sathagapitham was affected in cent percent of cases. Prasakapitham was found to be normal in all Outpatients.

**Disturbances in Kapham**:

Among 20 In Patients, Avalambagam was affected in cent percent of cases because it is basic for all other kaphas (Kilethagam, Pothagam, Tharpagam and Santhegam). Kilethagam was affected in 40% of cases produces loss of appetite and indigestion. Santhegam was affected in cent percent of cases produces joint pain, swelling and restriction of movements.

Among 20 Out Patients, Avalambagam and Santhegam were affected in cent percent of cases. Kilethagam was affected in 10% of cases. Pothagam and Tharpagam were found to be normal in both In Patients and Out Patients.

**Udal Thathukkal or Udal Kattugal**:

Among 20 In Patients and 20 Out patients, Saram was affected in all cases and produces easy fatiguability. Senneer was affected in all cases and produces decreased Hb percentage and pain. Oohn was affected in all cases which produced muscle wasting in thenar and hypothenar muscles and pain. Kozhuppu
was affected in all cases which showed emaciation. Enbu was affected in all cases which showed joint pain, swelling and restricted movements.

Moolai, Sukkilam and suronitham were found to be normal in both In Patients and Out Patients.

**Envagai Thervugal:**

Envagai thervugal is considered to be the very vital observation. This constitute Naadi, Sparisam, Naa, Niram, Mozhi, Vizhi, Malam and Moothiram.

Among 20 In Patients and 20 Out Patients,

65% of In Patients and 80% of Out Patients showed Vatha Pitha Naadi. 35% of In Patients and 20% of Out Patients showed Pitha Vatha Naadi.

Sparisam was affected in all In Patients and Out Patients produced warmthness over the inflammed joints.

Naa was affected in 50% of In Patients and 50% of Out Patients. Coated tongue due to constipation and pale due to Anaemia.

Niram was affected in 5% of In Patients and none of Out Patients which showed pallor of the skin.

Mozhi was normal in both In Patients and Out Patients.

Vizhi was affected in 15% of In Patients and 10% of Out Patients which showed blurring of vision.
Malam was affected in 90% of In Patients and 40% of Out Patients. Constipation was present in those cases.

Moothiram was affected in cent percent of In Patients and Out Patients which altered Neikuri.

Neerkuri and Neikuri were noticed in all the cases.

Neerkuri was found to be normal, straw in colour, normal frequency, Smell and froth.

Neikuri showed that the oil dropped into the urine was spreading like “Aravil Aazhi” (Vatha Pitha Neer) and “Aazhiyil Aravu” (Pitha Vatha Neer).

**Grading of arthritis Patients :**

Grading of arthritis was useful to assess the gravity of the disease. Four grades are as follows :

Grade I : No restriction of ability to perform normal activities.

Grade II : Moderate restriction but with an ability to perform most activities of daily activity.

Grade III : Marked restriction with an inability to perform most activities of daily living and occupation :

Grade IV : Incapacitation with confinement to bed or wheel chair
Among 20 In Patients and 20 Out Patients

➤ No cases belonged to grade I

➤ 65% of In Patients and 70% of Out Patients belonged to Grade II

➤ 30% of In Patients and 30% of Out Patients belonged to Grade III

➤ 5% of In Patients belonged to Grade IV and no Out Patients belonged to Grade IV

Investigations :

Routine examination of blood, urine and stools were done. Examination of urine and stools showed no abnormalities.

ESR (Erythrocyte Sedimentation Rate) is increased in 95% of In Patients and 90% of Out Patients.

50% of In Patients and 50% of Out Patients had decreased Hb%. Blood sugar, blood urea, serum cholesterol were also done in bio-chemistry department, Government siddha medical college, Palayamkottai. The values were found to be normal in all cases.

Affordable patients were asked to do the investigations privately at their own cost and reports were recorded.

The patients were also subjected to radiological investigations.
X-ray of both hands with wrist joints (Antero posterior view):

Were taken to 5 In Patients and 5 Out Patients. 10 patients had gross abnormalities (gross osteoporosis), with reduction in interphalangeal joint space, Synovial thickening etc and in one case ankylosis also seen. These patients had been suffering from this disease for a long period and one case had soft tissue swelling over interphalangeal joint.

X-ray of both knee joints:

Antero posterior view was taken for 15 In patients and 15 Out Patients. The reports revealed gross osteoporosis with reduction of joint space and sclerosis.

Management:

"விரைசனம் மாற்றுவது"

Vatha disease can be brought down by Viraesanam (Laxative and purgative) So 10gm of Nilavagai chooranam was given with hot water at bed time.

Ichchura Mooli Chooranam and Erivatha Thylam were the specific medicines selected for the disease santhuvatham. Ichchura Mooli Chooranam 1-2gms was given two times a day with hot water internally and 30ml of Erivatha Thylam was given externally. The patients were advised to apply over the areas of pain three times a day. Gentle massage was also given. No adverse reactions of drugs were observed.

Hot water fermentation was advised to all the patients after the application of oil, because hot water fermentation increases the blood supply to that affected area and relieves the pain.
Bed rest was advised for all the patients. After inflammation was subsided the patients were advised to do some exercise to increase the range of movements, to prevent disuse atrophy and to prevent deformities.

**Assessment of the effects of management:**

All the 20 In Patients and 20 Out Patients were treated with Ichchura Mooli Chooranam internally and Erivatha Thylam externally. Physiotherapy was also advised. The results were assessed on the basis of improvement of the range of movements, decrease of pain and inflammation and a sense of well being. The duration of treatment was 41-64 days in average.

At the end of the treatment,

- 35% of In Patients showed good results
- 60% of In Patients showed fair results
- 5% of In Patients showed poor results
- 15% of Out Patients showed good results
- 70% of Out Patients showed fair results
- 15% of Out Patients showed poor results

15% of poor results may be due to the Out Patients were not strictly followed diet restriction.

After discharge the In Patients were advised to attend the post graduate Out Patients ward for further follow-up.

During the treatment, the diet restriction was strictly followed. Patients were instructed to take warm bath and to avoid exposure to chill weather.
Summary
SUMMARY

Santhuvatham is a connective tissue disorder with a chronic course, unless early diagnosis and proper management, this condition leads to deformities of involved joints associated with systemic disturbances.

The modern treatment of poly Arthritis with Analgesics and Anti inflammatory drugs has not proved any permanent cure. So poly Arthritis has received an international attention for finding out a new siddha medicines (Ichchura Mooli Chooranam, Erivatha thylam) were tried clinically in this dissertation work.

In this study of 40 patients (20 Inpatients and 20 Outpatients) of both sexes were selected. Females are predominant than males. This disease usually occurs between third and fifth decades. the incidence of this disease was higher in winter seasons and positive family history and previous illness.

All Inpatients and 90% of Outpatients belonging to poor socio economic status. 10% of Outpatients belonging to middle class. The onset of the disease in gradual in 95% of Inpatients and 90% of Outpatients and acute in 5% of Inpatients and 10% of Outpatients.

Articular manifestations of Santhu vatham were cent percent present in all cases. Constipation and insomnia were also common in this disease.

90% of Inpatients and 40% of Outpatients were suffered from constipation. 75% of Inpatients and 50% of Outpatients were suffered from insomnia.
In Uyir Thathukkal, Viyanan, Samanan, Sathagam, Avalambagam and santhegam were affected in cent percent of Inpatients and Outpatients. Abanan was affected in 90% of Inpatients and 40% of Outpatients. Korrman was affected in 15% of Inpatients and 10% of Outpatients. Kirukaran was affected in 40% Inpatients and 10% of Outpatients. Devathan was affected in 40% of Inpatients and 50% of Outpatients. Anarpitham was affected in 40% of Inpatients and 10% of Outpatients. Ranjaga pitham was affected in 50% of Inpatients and 50% of Outpatients. Prasakapitham was affected in 10% of Inpatients and none of Outpatients. Alosakapitham was affected in 15% of Inpatients and 10% of Outpatients. Kilethagam was affected in 40% of Inpatients and 10% of Outpatients.

In udal kattugal, Saram, Senneer, Oohn, Kozhuppu and Enbu were affected in all Inpatients and all Outpatients.

In Envagai Thervugal, Vatha Pitha Naadi was present in 65% of Inpatients and 80% of Outpatients. Pitha Vatha Naadi was present in 35% of Inpatients and 20% of Outpatients. Sparisam and Moothiram were affected in all Inpatients and Outpatients. Naa was affected in 50% of Inpatients and 50% of Outpatients. Niram was affected in 5% of Inpatients and none of Outpatients. Vizhi was affected in 15% of Inpatients and 10% of Outpatients. Malam was affected in 90% of Inpatients and 40% of Outpatients.

Routine blood, urine and stool examinations and Radiological evaluation were also considered for diagnosis and to follow the progress of the patients.

The efficacies of the trial medicines were studied and observed during the period of this study.
Clinically there were marked reduction of extra articular symptoms such as defective salivary secretion, epigastric pain, anorexia, chillness, constipation, burning micturition etc, and marked improvement of articular manifestation present in those who came in early stage of disease. Clinically there were marked reduction of spasm, restricted movement and clinical weakness of limbs, along with sense of well being and decreased ESR were noted.

Clinically the medicines were free from side effects. Pharmacological studies showed that Ichchura Mooli Chooranam had significant Analgesic, Anti inflammatory and Antipyretic activities Erivatha thylam showed significant Anti inflammatory action also.

I have a plan for further studies. I would like to have a deeper knowledge on this disease. I intend to have more intensive knowledge on the dissertation subject by doing Ph.D.
Conclusion
CONCLUSION

All the cases were treated with Ichchura Mooli Chooranam (internal) and Erivatha thylam (external). Clinical results were found to be satisfactory.

The follow up of these patients for a period varying from 1-3 months showed moderate relief and improvement and a state of well being.

The medicines were free from adverse effects clinically.

So it is concluded that Santhu vatham is a connective tissue disorder with a chronic course that can be controllable in early diagnosis and treatment with Ichchura Mooli Chooranam and Erivatha thylam along with the diet and regimen stated in siddha medicine.
ANNEXURE
Annexure – I

PREPARATION AND PROPERTIES OF THE TRIAL MEDICINES

சுருக்கக்கூறு குறிப்பிட்டும்:

சுருக்கக்கூறு விளக்கம்:

வேளாய்வு சுருக்கக்கூறுச் செயலாளர் துறையில் பங்கெடுப்பு போன்றே விளக்கம் புரிந்துள்ளது.

அடையாள:

அடையாளத்தில் முதல் அடையாளத்தில் (1-2திலையாண்டு)

அடையாளத்தில்:

மேலும்

2-பொறியாளம்:

பார்வூட்டன், உட்கருந்தை, மல்லிகரைக்கள், உடலன்பல்லி, செய்தி, கரு
பாலாலானாக்குறும் பொறியாளர். அதற்கும் மேலும் உடலன்பல்லிக்கு
அணுக்க்கூட்டுவது.

அத்துறை துணை:

நவீகரிப்பு (பார்வூட்டன் துணை) பொறியாளர் உடலன்பல்லிக்கு உடலுப்

பாது.129
நோக்கி வகை

உதவிக்காணதல் வாய்ப்புகள்:

பருளின் விளம்பு

சங்கீட்டியல் விளம்பு

சிரீரவுத்தியல் விளம்பு

சின்னபாலன்விளம்பு

வப்பு வழக்கங்கள் (அ) வகர்த்தியால்

முன்னிலை வழங்கல்

சிறந்த வாய்ப்பு சாதனைகள் மூலம் குறிப்பிட்டம் செய்யப்பட்டுள்ளது

சுருக்கப்பட்டு வரும் காலம்

சிறந்த திட்டமிட்டு வாய்ப்பு சாதனைகள் மூலம் குறிப்பிட்டம் செய்யப்பட்டுள்ளது

குறிப்பிட்டு வரும் காலம்

சிறந்த திட்டமிட்டு வாய்ப்பு சாதனைகள் மூலம் குறிப்பிட்டம் செய்யப்பட்டுள்ளது

தீர்மானத் தீர்க்கும் வாய்ப்பு

சிறந்த திட்டமிட்டு வாய்ப்பு சாதனைகள் மூலம் குறிப்பிட்டம் செய்யப்பட்டுள்ளது

தீர்மானத் தீர்க்கும் வாய்ப்பு

சிறந்த திட்டமிட்டு வாய்ப்பு சாதனைகள் மூலம் குறிப்பிட்டம் செய்யப்பட்டுள்ளது

அகற்றாண் தீர்த்த வாய்ப்பு

சிறந்த திட்டமிட்டு வாய்ப்பு சாதனைகள் மூலம் குறிப்பிட்டம் செய்யப்பட்டுள்ளது.
Annexure – II

BIO CHEMICAL ANALYSIS

Preparation of the extract:

5gms of chooranam was weighed accurately and placed in a 250ml clean beaker. Then 50ml distilled water was added and dissolved well. Then it is boiled well for about 10 minutes. It was cooled and filtered in a 100ml volumetric flask and then it was made up to 100ml with distilled water. This fluid was taken for analysis.

<table>
<thead>
<tr>
<th>S.NO</th>
<th>EXPERIMENT</th>
<th>OBSERVATION</th>
<th>INFERERENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td><strong>TEST FOR CALCIUM:</strong></td>
<td>No White precipitate is</td>
<td>Absence of Calcium</td>
</tr>
<tr>
<td></td>
<td>2ml of the above prepared extract</td>
<td>formed</td>
<td></td>
</tr>
<tr>
<td></td>
<td>is taken in a clean test tube. Add</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>2ml of 4% Ammonium oxalate solution</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td><strong>TEST FOR SULPHATE:</strong></td>
<td>No white precipitate is</td>
<td>Absence of Sulphate</td>
</tr>
<tr>
<td></td>
<td>2ml of the extract is added to 5%</td>
<td>formed</td>
<td></td>
</tr>
<tr>
<td></td>
<td>barium chloride solution.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td><strong>TEST FOR CHLORIDE:</strong></td>
<td>No white precipitate is</td>
<td>Absence of Chloride</td>
</tr>
<tr>
<td></td>
<td>The extract is treated with silver</td>
<td>formed</td>
<td></td>
</tr>
<tr>
<td></td>
<td>nitrate Solution.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td><strong>TEST FOR CARBONATE:</strong></td>
<td>No brisk effervescence</td>
<td>Absence of Carbonate</td>
</tr>
<tr>
<td></td>
<td>The substance is treated with</td>
<td>informed</td>
<td></td>
</tr>
<tr>
<td></td>
<td>concentrated HCL.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td><strong>TEST FOR STARCH:</strong></td>
<td>No blue colour is formed</td>
<td>Absence of starch</td>
</tr>
<tr>
<td></td>
<td>The extract is added with weak</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>iodine Solution.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td><strong>TEST FOR IRON : FERRIC</strong></td>
<td>No blue colour is formed</td>
<td>Absence of Ferric Iron</td>
</tr>
</tbody>
</table>
7. **TEST FOR IRON : FERROUS**  
The extract is treated with concentrated Nitric acid and ammonium thio cyanate  
<table>
<thead>
<tr>
<th>Result</th>
<th>Inference</th>
</tr>
</thead>
<tbody>
<tr>
<td>No blood red colour is formed</td>
<td>Absence of ferrous Iron</td>
</tr>
</tbody>
</table>

8. **TEST FOR PHOSPHATE :**  
The extract is treated with ammonium Molybdate and concentrated nitric acid.  
<table>
<thead>
<tr>
<th>Result</th>
<th>Inference</th>
</tr>
</thead>
<tbody>
<tr>
<td>No yellow precipitate is formed</td>
<td>Absence of phosphate</td>
</tr>
</tbody>
</table>

9. **TEST FOR ALBUMIN :**  
The extract is treated with Esbach’s reagent.  
<table>
<thead>
<tr>
<th>Result</th>
<th>Inference</th>
</tr>
</thead>
<tbody>
<tr>
<td>No yellow precipitate is formed</td>
<td>Absence of albumin</td>
</tr>
</tbody>
</table>

10. **TEST FOR TANNIC ACID :**  
The extract is treated with ferric chloride reagent.  
<table>
<thead>
<tr>
<th>Result</th>
<th>Inference</th>
</tr>
</thead>
<tbody>
<tr>
<td>No blue black precipitate is formed</td>
<td>Absence of tannic acid</td>
</tr>
</tbody>
</table>

11. **TEST FOR UNSATURATION :**  
Potassium permanganate solution is added to the extract.  
<table>
<thead>
<tr>
<th>Result</th>
<th>Inference</th>
</tr>
</thead>
<tbody>
<tr>
<td>It gets decolourised</td>
<td>Indicates of presence of unsaturated compound</td>
</tr>
</tbody>
</table>

12. **TEST FOR REDUCING SUGAR :**  
5ml of Bendict’s qualitative solution is taken in a test tube and allowed to boil for 2mts and add 8-10 drops of the extract and again boil it for 2mts.  
<table>
<thead>
<tr>
<th>Result</th>
<th>Inference</th>
</tr>
</thead>
<tbody>
<tr>
<td>No colour change occurs</td>
<td>Absence of reducing sugar</td>
</tr>
</tbody>
</table>

13. **TEST FOR AMINO ACID :**  
One or two drops of the extract is placed on a filter and dried it well after drying 1% Ninhydrin is sprayed over the same and dried it well.  
<table>
<thead>
<tr>
<th>Result</th>
<th>Inference</th>
</tr>
</thead>
<tbody>
<tr>
<td>Violet colour is formed</td>
<td>Indicates the presence of Amino acid</td>
</tr>
</tbody>
</table>

**Inference :**  
The Bio chemical analysis showed that the Ichchura Mooli Chooranam had unsaturated compound and amino acid.
Annexure – III

PHARMACOLOGICAL ANALYSIS

ANALGESIC STUDY ON
ICHCHURA MOOLI CHOORANAM

(In Albino rats by hot water bath method)

Aim :

To study the analgesic effect of Ichchura Mooli Chooranam.

Preparation of the test medicine :

200mg of Ichchura Mooli Chooranam was taken and dissolved in 10ml of milk. A does 1ml was given to each rat. This 1ml contains 20mg of test medicine.

Procedure :

Three groups of healthy albino rats on both sexes were selected. Each group having 3 rats, weighing between 100 to 150gm. The hot water bath was maintained at the temperature of 55°C.

The tail was dipped into the bath, and the time taken for each rat to remove its tail from the hot water bath was noted. The rat which taken more than 5sec for removal of its tail from hot water bath was excluded from the experiment.

First group was kept as control by giving distilled water of 2ml per 100mg of body weight.

The second group was given paracetamol 20mg per 100mg of body weight and kept as standard.
The third group was given test medicine.

30 minutes after Medicine administration, the tail of each rat was dipped into hot water bath one by one. The time taken for each rat to remove its tail was noted. The whole experiment was repeated after 30 minutes.

The results of control, standard and test medicine groups were tabulated and compared.

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Groups</th>
<th>Dose/100gm body weight</th>
<th>Initial reading in Seconds</th>
<th>After Medicines Administration</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Water</td>
<td>2ml</td>
<td>2.1</td>
<td>2.5</td>
</tr>
<tr>
<td>2</td>
<td>Paracetamol</td>
<td>20mg/1ml</td>
<td>2</td>
<td>5.5</td>
</tr>
<tr>
<td>3</td>
<td>Ichchura Mooli Chooranam</td>
<td>20mg</td>
<td>2.2</td>
<td>3.4 5.25</td>
</tr>
</tbody>
</table>

**Inference:**

It is observed that Ichchura Mooli Chooranam has got significant analgesic action.
ACUTE ANTI-INFLAMMATORY STUDY ON
ICHCHURA MOOLI CHOORANAM BY HIND
PAW METHOD IN ALBINO RATS

Aim :

To study the Acute Anti-inflammatory effect of Ichchura Mooli Chooranam.

Preparation of test medicine :

200mg of Ichchura Mooli Chooranam was dissolved in 10ml of milk. A dose of 1ml was given to each rat. This 1ml contains 20mg of the test medicine.

Procedure :

Nine healthy albino rats weighing 100-150gm were taken and divided into three groups, each consisting of 3 rats.

First group was kept as control by giving distilled water of 1ml/100gm of body weight. The second group was given Ibuprofen as dose of 20mg/100gm of body weight. The third group received the test medicine Ichchura Mooli Chooranam of 20mg/100gm of body weight.

Before administration of test medicine, the hind – paw volume of all rats was measured. This was done by dipping the hind paw up to tibio dorsal junction, into a mercury plethysmograph. While dipping the hind paw by pulling the syringe piston, the level of mercury in the centre small tube was made to coincide with red marking and reading was noted from the plethysmograph.
Soon after the measurement the drugs were administered orally. One hour later, a subcutaneous injection of 0.1ml of 1% (w/v) carragenin in water was made into plantar surface of both hind paw of each rat.

Three hours after carrageenin injection, the hind paw volume was measured once again. The difference between the initial and final volume was calculated and compared.

The method is more suitable for studying the Anti-inflammatory activity in acute inflammation. The values are given in the table.

The results of control, standard and test medicine groups were tabulated and compared.

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Groups</th>
<th>Dose / 100gm body weight</th>
<th>Initial reading average</th>
<th>Final reading average</th>
<th>Mean diff</th>
<th>Inflammation (%)</th>
<th>Inhibition (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Water</td>
<td>2ml</td>
<td>0.55</td>
<td>1.4</td>
<td>0.85</td>
<td>100</td>
<td>---</td>
</tr>
<tr>
<td>2.</td>
<td>Ibu profen</td>
<td>20mg/1ml</td>
<td>0.55</td>
<td>0.85</td>
<td>0.3</td>
<td>35.2</td>
<td>64.8</td>
</tr>
<tr>
<td>3.</td>
<td>Ichchura Mooli Choornam</td>
<td>20mg</td>
<td>0.4</td>
<td>0.55</td>
<td>0.15</td>
<td>17.6</td>
<td>82.4</td>
</tr>
</tbody>
</table>

**Inference:**

It is observed that Ichchura Mooli Choornam has got significant anti inflammatory action.
CHRONIC ANTI INFLAMMATORY STUDY ON
ICHCHURA MOOLI CHOORANAM BY COTTON PELLETS
GRANULOMA METHOD

Aim :
To study the chronic anti inflammatory activity of drug Ichchura Mooli Chooranam in the rats by cotton pellets implantation (Granuloma) method.

Preparation of test medicine :
200mg of Ichchura Mooli Chooranam was dissolved in 10ml of milk. A dose of 1ml was given to each rat. This 1ml contains 20mg of the test medicine.

Procedure :
Cotton pellets each weighing 10mg were prepared and sterilized in an autoclave for about one hour under 15 pounds atmospheric pressure. 9 albino rats weighing between 150 to 200mg were selected and were divided into 3 groups each containing 3 rats. Each rat was anaesthetised with ether and cotton pellets were implanted subcutaneously in the groin, two on each side.

From the day of implantation, one group of animals received Ichchura Mooli Chooranam in a dose of 20mg/100gm of body weight. The standard drug of animals received Ibuprofen in a dose of 20mg/100gm body weight.

On the eighth day the rats were sacrificed and the pellets were removed and weighed. Then they were put in an incubator at 60°C – 80°C and then the weight of the granulation tissue was determined separately.

Inference :
It is observed that Ichchura Mooli Chooranam has got significant anti inflammatory action.
Study of Chronic Anti inflammatory effect on Ichchura Mooli Choornam by cotton pellet method

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Groups</th>
<th>Dose / 100gm body weight</th>
<th>Pellet weight</th>
<th>Pellet weight of the granuloma of drugs</th>
<th>Mean difference</th>
<th>Percentage Inflammation</th>
<th>Percentage Inhibition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Water</td>
<td>2ml</td>
<td>10mg</td>
<td>250mg</td>
<td>---</td>
<td>100</td>
<td>---</td>
</tr>
<tr>
<td>2.</td>
<td>Ibu profen</td>
<td>20mg/1ml</td>
<td>10mg</td>
<td>56mg</td>
<td>---</td>
<td>22.4</td>
<td>77.6</td>
</tr>
<tr>
<td>3.</td>
<td>Ichchura Mooli Choornam</td>
<td>20mg</td>
<td>10mg</td>
<td>105mg</td>
<td>---</td>
<td>42</td>
<td>58</td>
</tr>
</tbody>
</table>

**Note:** The test drug has got significant action when compared with that of the standard drug.
ANTIPYRETIC STUDY OF
ICHCHURA MOOLI CHOORANAM

Aim:
To study the antipyretic activity of Ichchura Mooli Choornam.

Procedure:
Group of six Albino rats were selected and divided equally into 2 groups. All the rats were made hyperthermic by subcutaneous injection of 12% suspension of yeast at a dose of 1ml/100gm of the body weight. 10 hours later one group of animals were given the test medicine by gastric tube at a dose of 20mg/1ml and the second group received only distilled water at a dose of 1ml.

The mean rectal temperature for the two groups were recorded at 0’ hour, 1½ hours, 3 hours and 4½ hours after the drug administration. The difference between the mean temperature of the control group and that of the other group is measured.

Tabulation of results obtained

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Drug</th>
<th>Dose / 100gm body weight</th>
<th>Initial temp</th>
<th>After 1½ hour</th>
<th>After 3 hours</th>
<th>After 4½ hours</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Water</td>
<td>1ml</td>
<td>36.0</td>
<td>36.0</td>
<td>36.0</td>
<td>37.0</td>
<td>38.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>37.0</td>
<td>37.0</td>
<td>38.0</td>
<td>39.0</td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Ichchura Mooli Choornam</td>
<td>20mg</td>
<td>37.0</td>
<td>37.0</td>
<td>36.0</td>
<td>35.0</td>
<td>35.0</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>37.0</td>
<td>37.0</td>
<td>36.0</td>
<td>35.0</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Paracetamol</td>
<td>20mg/1ml</td>
<td>37.0</td>
<td>37.0</td>
<td>36.5</td>
<td>35.0</td>
<td>34.5</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>38.0</td>
<td>37.0</td>
<td>36.5</td>
<td>34.0</td>
<td></td>
</tr>
</tbody>
</table>

Inference:
It is observed that Ichchura Mooli Choornam has got significant antipyretic action.
ACUTE ANTI INFLAMMATORY ACTION ON
ERIVATHA THYLAM

Aim :
To study the acute anti – inflammatory action on Erivatha thylam by hind paw method in albino rats.

Procedure :
Six albino rats weighing between 100-150gms were selected and divided into two groups each containing three rats. To the first group distilled water was given and kept as a control. Before the application of medicine, the hind paw volumes of all rats were measured. This was done by dipping the hind – paw upto the tibio dorsal junction in mercury plethysmography.

Subcutaneous injection of 0.1ml of 1% of carrogenin (w/v) in water was made into plantar surface of both the hind-paw of each rat. To the test group (Erivatha Thylam) was applied topically frequently over the inflammed surface in a thin layer. To the control group, no drug was applied over inflammed surface. One and half an hours after injection, the hind – paw volume was measured once again. The difference between the initial and final volume would show the amount of inflammation. Taking the volume in the control group as 100% of inflammation, the anti inflammatory effect of the group is calculated.

Inference :
It is observed that Erivatha Thylam has got significant anti inflammatory action.
# Study of Acute Anti-Inflammatory effect by hind paw method using Erivatha Thylam

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Name of drugs / groups</th>
<th>Dose / 100gm body weight</th>
<th>Initial Reading average</th>
<th>Final Reading average</th>
<th>Mean difference</th>
<th>Percentage Inflammation</th>
<th>Percentage Inhibition</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Water</td>
<td>2ml</td>
<td>0.55</td>
<td>1.4</td>
<td>0.85</td>
<td>100</td>
<td>---</td>
</tr>
<tr>
<td>2.</td>
<td>Ibu profen</td>
<td>20mg/1ml</td>
<td>0.55</td>
<td>0.85</td>
<td>0.3</td>
<td>35.2</td>
<td>64.8</td>
</tr>
<tr>
<td>3.</td>
<td>Erivatha Thylam</td>
<td>Ext</td>
<td>0.87</td>
<td>1.15</td>
<td>0.28</td>
<td>32.9</td>
<td>67.1</td>
</tr>
</tbody>
</table>

**Note:** The test medicine has got significant action when compared with that of the standard drug.
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49. Thriumoolar Naadi Nool
50. Thirumoolar Vaithiyam
51. Vaithya Sara Sankiragam
52. Yakobu Chinthamani
53. Yugi Munivar Perunool Vaithya Kaviyam – 1000
54. Yugi Vaithya Chinthamani
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<td><strong>I.P.No.</strong></td>
<td><strong>Religion</strong></td>
</tr>
<tr>
<td><strong>Bed. No</strong></td>
<td><strong>Date of admission</strong></td>
</tr>
<tr>
<td><strong>Name</strong></td>
<td><strong>Date of discharge</strong></td>
</tr>
<tr>
<td><strong>Age/Sex</strong></td>
<td><strong>Result</strong></td>
</tr>
<tr>
<td><strong>Occupation</strong></td>
<td><strong>Diagnosis</strong></td>
</tr>
<tr>
<td><strong>Income</strong></td>
<td><strong>Medical Officer</strong></td>
</tr>
<tr>
<td><strong>Address</strong></td>
<td></td>
</tr>
</tbody>
</table>

**Complaints and duration**

**History of present illness**

**History of previous illness**

**Personal History**

**Family History**

**Habits**
(Veg/ non-veg/ mixed diet / smoker/ alcoholic / tobacco – chewer)
General Examination

1. Consciousness : 9. Anaemia :
2. Nourishment : 10. Jaundice :
3. Decubitus : 11. Cyanosis :
4. Temperature : 12. Clubbing :
5. Pulse Rate : 13. Generalised lymphadenopathy :
6. Heart rate : 14. Oedema :
7. Blood pressure : 15. JVP :
8. Respiratory Rate : 16. Engorged veins :

Congenital anomaly [if any] :
Miscellaneous :

In Siddha aspects

<table>
<thead>
<tr>
<th>Nilam</th>
<th>Paruvakalam</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kurinchi</td>
<td>Kar</td>
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</tr>
<tr>
<td>Marutham</td>
<td>Munpani</td>
</tr>
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<td>Pinpani</td>
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<tr>
<td>Palai</td>
<td>Ilavenil</td>
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<tr>
<td></td>
<td>Mudhuvenil</td>
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</table>

IymPorigal
(sensory organs)

<table>
<thead>
<tr>
<th>Mei</th>
<th>Kai</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vai</td>
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</tr>
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<td>Sevi</td>
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<td>Vatham</td>
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<td>--------</td>
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<tr>
<td>Dhananjeyan :</td>
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<td>Santhigam :</td>
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<td>Oon :</td>
<td>Naa :</td>
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<td>Kozhuppu :</td>
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<tr>
<td>Enbu :</td>
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</tr>
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<td>Moolai :</td>
<td>Vizhi :</td>
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<td>Sukkilam/suronitham :</td>
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<td>Neerkuri</td>
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<tr>
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<td>Enjal :</td>
</tr>
</tbody>
</table>
IN MODERN ASPECTS

**History**

Pain : HT :
Fever : DM :
Trauma : Rheumatic fever :
Early morning stiffness : PT :
Fracture : Br. asthma :
Skin changes : Allergy :
Raynaud’s phenomenon : Surgery :
Venereal exposure : Others (if any) :

**Inspection**

Gait :
Skin changes :
Swelling :
Muscle wasting :
Attitude :
Deformity :
Restriction :
Mobility :
Pain on usage :

**Palpation**

Tenderness :
Increased warmth :
Swelling :
Crepitus :
Stability :
Resisted active
Movements :
### Examination of Joints & Connective Tissue

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Joints</th>
<th>Pain</th>
<th>Swelling oedema</th>
<th>Redness</th>
<th>Warmth</th>
<th>Crepitus</th>
<th>Stiffness</th>
<th>Restricted movements (or) loss of function</th>
<th>Deformity subluxation contractions ulcers</th>
<th>Muscle spasm, wasting weakness malarise</th>
<th>Subcutaneous nodules cystacalosities (Bony enlargement)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Inter phalangeal joint</td>
<td>BT</td>
<td>AT</td>
<td>BT</td>
<td>AT</td>
<td>BT</td>
<td>AT</td>
<td>BT</td>
<td>AT</td>
<td>AT</td>
<td>BT</td>
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<td>2</td>
<td>Wrist-metacarpo phalangeal joint</td>
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<td></td>
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<td></td>
<td></td>
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<td>3</td>
<td>Elbow</td>
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<td>4</td>
<td>Shoulder acromioclavicular</td>
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<td>5</td>
<td>Ankle-Subtarsal Midtarsal</td>
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<td>6</td>
<td>Metatarso phalangeal joint</td>
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<td>7</td>
<td>Phalanges</td>
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<td>8</td>
<td>Knee joint</td>
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<tr>
<td>9</td>
<td>Spine-Cervical, Thoracic, Lumbar, sacroiliac joint</td>
<td></td>
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<td>10</td>
<td>Mandibular joint</td>
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<td>11</td>
<td>Sterno clavicular joint</td>
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<td>12</td>
<td>Costo vertebral joint</td>
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</tbody>
</table>
# Laboratory Investigations

1. **Blood**
   - TC : 
   - DC : 
   - ESR : 
   - HB% : 
   - Sugar : 
   - Cholesterol : 
   - Uric acid : 
   - Urea : 

2. **Urine**
   - Albumin : 
   - Sugar : 
   - Deposits : 

3. **Stools**
   - Ova : 
   - Cyst : 
   - Occult blood : 

4. **Immunological tests**
   - RA factor : 
   - Anti Nuclear Antibody : 
   - Aso Titre : 

5. **Radiographic Evaluation** : 

6. **ECG** : 

7. **Serological test for syphilis** : 

8. **Synovial Fluid Analysis** : 

9. **Arthrography** : 

10. **Sputum for AFB** : 

Government Siddha Medical College & Hospital
Palayamkottai

Department of postgraduate – Maruthuvam (Pothu)
Discharge case sheet – “Santhu Vatham”

Ward : Nationality : 
I.P.No. : Religion : 
Bed. No. : Date of Admission : 
Name : Date of Discharge : 
Age/Sex : Result : 
Occupation : Diagnosis : 
Income : Medical Officer : 
Address :

Clinical Features

<table>
<thead>
<tr>
<th>During admission</th>
<th>During discharge</th>
</tr>
</thead>
<tbody>
<tr>
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</tbody>
</table>

Place :

Date : 
Government Siddha Medical College & Hospital
Palayamkottai
Department of Post Graduate – Maruthuvam (pothu)
case sheet proforma for “Santhu Vatham”

O.P. No. : Treatment starting date :
Name : End of the Treatment date :
Age/Sex : No. of days treated :
Occupation : Diagnosis :
Income : Medical Officer :
Address :

Complaints and duration :

General Examination :

Congenital anomaly [if any] :

Miscellaneous :

In Siddha Aspects

Nilam : Paruvakalam :
Iymporigal Kanmenthiriyam
(Sensory organs) : (Motor organs) :
Mukkutram : Elu udal kattugal :
Envagai thervugal : Neerkuri :
Neikuri :
### In Modern Aspects

#### History

<table>
<thead>
<tr>
<th>Symptom</th>
<th>Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pain</td>
<td>HT</td>
</tr>
<tr>
<td>Fever</td>
<td>DM</td>
</tr>
<tr>
<td>Trauma</td>
<td>Rheumatic fever</td>
</tr>
<tr>
<td>Early morning stiffness</td>
<td>PT</td>
</tr>
<tr>
<td>Fracture</td>
<td>Br.asthma</td>
</tr>
<tr>
<td>Skin changes</td>
<td>Allergy</td>
</tr>
<tr>
<td>Raynaud’s phenomenon</td>
<td>Surgery</td>
</tr>
<tr>
<td>Venereal exposure</td>
<td>Others (if any)</td>
</tr>
</tbody>
</table>

#### Inspection : 

#### Palpation : 

LABORATORY INVESTIGATIONS

1. **Blood**
   - TC :
   - DC :
   - ESR :
   - HB% :
   - Sugar :
   - Cholesterol :
   - Uric acid :
   - Urea :

2. **Urine**
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9. **Arthrography** :

10. **Sputum for AFB** :
ROOTS OF ICHCHURAMOOLI

ICHCHURAMOOLI CHOORANAM
INGREDIENTS OF ERIVATHA THYLAM

COW’S GHEE     NEEM OIL     CASTOR OIL

GINGELY OIL     VASAMBU     VENGARAM

VILVAVER        KAPPU MANJAL

ERIVATHA THYLAM
GRAPH SHOWING INCIDENCE OF POLY ARTHRITIC CONDITIONS

GRAPH SHOWING DISTURBANCES IN VATHA

GRAPH SHOWING DISTURBANCES IN PITHA

GRAPH SHOWING DISTURBANCES IN KAPHA
GRAPH SHOWING CONDITIONS OF UDAL THATHUKKAL

GRAPH SHOWING CONDITIONS OF ENVAGAI THERVUGAL

GRAPH SHOWING GRADATION OF RESULTS
X-RAY BOTH HANDS AND WRIST JOINTS – AP VIEW
RHEUMATOID ARTHRITIS
I.P. PATIENT : NATARAJAN – 67 / MALE
I.P. NO. 778

X-RAY – KNEE JOINT – AP VIEW
I.P. PATIENT : LAKSHMIAMMAL – 60 / FEMALE
I.P. NO. 777