CLINICAL EVALUATION OF PANCHATHIKTA KIRUTHAM (INTERNAL MEDICINE) AND KARUNKOZHI THYLAM (EXTERNAL MEDICINE) IN THE MANAGEMENT OF UTHIRAVATHA SURONITHAM (RHEUMATOID ARTHRITIS)

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DECLARATION BY THE CANDIDATE

I hereby declare that this dissertation entitled **"CLINICAL EVALUATION OF PANCHATHIKTA KIRUTHAM (INTERNAL MEDICINE) AND KARUNKOZHI THYLAM (EXTERNAL MEDICINE) IN THE MANAGEMENT OF UTHIRAVATHA SURONITHAM (RHEUMATOID ARTHRITIS)"** is a bonafide and genuine research work carried out by me under the guidance of **Dr.H.Vetha Merlin Kumari MD (S), Ph.D.,** Associate Professor, Department of Maruthuvam, National Institute of Siddha, Tambaram sanatorium, Chennai 600 047 and the dissertation has not formed the basis for the award of any degree, diploma, fellowship or another similar title.

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BONAFIDE CERTIFICATE

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INDEX

1. INTRODUCTION

Siddha medicine is an ancient script of medicine has been originated from South India. This system is originated from 18 Siddhars. The word of Siddha literally means “sapience”. The word Siddha comes from the word “Siddhi” means an object to be obtained such as perfect in life.

The concept of Siddha system is based on fundamental principles of 96 thathuvangal which include five basic elements of the Universe, Udal thadhugal, and Uyir thadhugal etc. Physical health of human body is maintained by three humors (vathm,pitham,kabam) basic vital forces of human.

Uyir thadhugal are activated by function of panchabootham. So any change in universe will be reflected in human body.

அண்டத்தி லுள்ளதே பிண்டம்
பிண்டத் திலுள்ளதே அண்டம்
அண்டமும் பிண்டமு மொன்றே
அறிந்துதான் பார்க்கும் போதே.

சட்டமுனி ஞானம்

Siddha maruthuvanga surukkam

Siddhars classified the diseases into 4448 types based on Mukkutra theory [vatham, pitham, kappam]. Importance of three humours in human body is well explained in Thirukkural i:e the increase or decrease of three humours causes diseases.

Vatha diseases are classified by Yugi and Agasthiyar in their literatures, Yugi vaithiya chinthamani 800 and Agasthiyar vaidya chinthamani respectively.

Sage Yugi classified diseases based on signs and symptoms. In his text book of Yugi vaithiya chinthamani, he classified the vatha diseases into 80 types. It’s one among them is Uthiravatha suronitham. Its signs and symptoms may be correlated with the Rheumatoid arthritis in modern system of medicine.

As said in Siddha science human body sustains the state of healthy living by keeping three humors in equilibrium influenced by environment, diet and daily activities.

When the three humours get deranged they produce diseases. When the three humours are affected by life style modification and seasonal variation they produce the diseases. This has been stated in **Thirukkural** as follows,

மிகினுங் குறையினும் நோய்செய்யும் நூலோர்
வளிமுதலா வெண்ணிய மூன்று.

Uthiravatha suronitham is mainly due to aggravated Vatha humour which is evident from the quote mentioned below.

“வாதமலாது மேனிகெடாது”- தேரையர்

Rheumatoid arthritis is Auto immune disease that affects approximately 0.5% of the adult population in Worldwide, occurs in 20-50 cases per 100000 annually, and mainly affects women after their 40 years. The global burden of the disease study 2019 showed a global prevalence of 0.22%; 0.31% in females and 0.13% in males.

The global Rheumatoid arthritis prevalence was 0.46% and point prevalence was 0.45% between 1986 and 2014, while the pooled period prevalence was 1955 to 2015. The global prevalence of RA between 1980 and 2019 was 460 per 100000 populations, with variations due to geographical locations.

In the text of Chikicharathana deepam (vaithiya nool) the formulation Panchathikta kirutham (internal medicine) and Karunkozhi thylam (external medicine) . This is indicatied for Narambu, Asthi majjai thathuvil samanthapatta vayu, Vatharaktham.

The Panchathikta kirutham and Karunkozhi thylam are a Siddha formulation. Most of the ingredients in the preparations are known to cure Vatha disease. Most of the ingredients posses veppa veeriyam (hot potency) and Kaippu suvai (pungent taste), which will balance and rectify the deranged Vatha kutram.

The ingredients are having Anti- inflammatory, Anti- spasmodic, Anti oxidant, Anti arthritic activity, Anti-analgesic activity.

The drugs Panchathikta kirutham and Karunkozhi thylam were evaluated for its safety in the clinical study on Uthiravatha suronitham . So far the trail drugs have not under gone for clinical trial. So I have chosen the medicines for clinical evaluation in Uthiravatha suronitham.

2. AIM AND OBJECTIVES

AIM

To study the efficacy of **Panchathikta kirutham** internally and **Karunkozhi thylam** externally in Uthiravatha suronitham (Rheumatoid arthritis) patients and document the study outcome through the scientific approach.

OBJECTIVES

A) PRIMARY OBJECTIVES

To evaluate the therapeutic efficacy in PANCHATHIKTA KIRUTHAM (Internal medicine) and KARUNKOZHI THYLAM (External medicine) in UTHIRAVATHA SURONITHAM (Rheumatoid arthritis).

B) SECONDARY OBJECTIVES

To study the Siddha basic principles like Envagaithervu, Neikuri and neerkuri , Udal thadhugal, Uyirthadhugal, Kaalam etc, in Uthiravatha suronitham patients.

3. REVIEW OF LITERATURE

3.1 SIDDHA ASPECT – UTHIRAVATHA SURONITHAM

The world is made up of five elements and man is capable of identifying all the objects in this world only through his five sense organs involing five basic elements.

Relationship between basic elements and taste

1. Sweet - Earth+ Water
2. Sour - Earth+ Fire
3. Salt - Water+ Fire
4. Bitter - Air+ Space
5. Pungent -Air+ Fire
6. Astringent- Earth+Air

The properties of five elements

1. Earth elements

The mud and clay are identified as the object of earth element. When the clay is triturated and made into a paste and applied externally. It will be a remedy for boils and tumors formed due to the factors of blood and deranged vatham.Desirous consumption of mud causes anaemia.

பூச விரணம் பொருமல்போம் பொன்முதலாம்
ஆசையுள்ள பண்ட மதிலுண்டாம்-நேசமதாய்த்
தின்டிற் பாண்டு செழிக்குமிகத் தேகமொழியே
சென்றுலகில் மண்குணத்தைத் தேர்.

பதார்த்த குண சிந்தாமணி

2. Water elements

The objects containing water elements cure the disease of the eye especially the disease cataract called kasam. A water element protects and strengthens the teeth, prevents the hemorrhage from the cut wounds, controls pira megam, and reduces the sense of heat.

காசமறும் தந்தங் கழலாது மேகமுதல்
வீசு மனல்தணியும் வீரியமாம் -வாசமாம்
உந்திவளர் குன்ம முதிரஞ் சொறியிவைபோம்
இந்துநறுந் தண்ணீருக்கே.

பதார்த்த குண சிந்தாமணி

3. Fire elements

The objects containing fire elements cure calf muscle disease, body pain all other disease causes by vatha disease.

கண்டைக்கா னோயுள்வலி காதம்போங் காய்ந்தக்கால்
விண்டே பலபிணியும் விட்டேகும் - விண்டோய்
பொருப்பனைய வட்டமுலைப் பூவையே நாளும்
நெருப்பி னதுகுணங் காணீ.

பதார்த்த குண சிந்தாமணி

4. Air elements

The patients with venereal ulcers, dryness of the body and eye disease should keep away from air.

மேகக் கடுப்பை விளைவிக்கும் வீறிநின்ற
தாக மனலிளைப்பைச் சாந்திசெய்யும் - மேகத்தின்
புண்ணோய்க்கும் பொல்லாது பூவையாரே ரூட்சைக்குங்
கண்ணோய்க்கு மாகாது காற்று.

பதார்த்த குண சிந்தாமணி

5. Space elements

The infinite space accommodates the other four elements and a number of other things including foodstuffs and various medicines which are the basic needs for the living beings.

உலகுமன மும்பலவா மோடதியு மண்ணுஞ்
சலமுமன லுங்காலுஞ் சாற்ற – அலகில்
அநந்தம் பொருளு மடங்கவுழி நல்கும்
அநந்தந் தனைக்கண் டறி.

பதார்த்த குண சிந்தாமணி

According to Siddhars the body is a combination of five elements which is explained here under.

1. PRITHIVI : Bones, skin, muscles, hair, nerves and vessels.
2. APPU : Blood, fat, semen, urine, perspiration and bone marrow.
3. THEYU : Arrogance, laziness, copulation, fear and sleep.
4. VAYU : Running, sitting, walking, laying down and standing.
5. AKAYAM: Lust, avarice, miserliness, pride and envy.

Seats of the three humors

Vatham, pitham and kapam are the three humors which are the life constituents of the human body.

Predominant vatham is located below the umbilicus

Predominant pitham is located in the abdomen and thorax

Predominant kapam is located in the head and neck.

VATHAM

Vatham is soft and fine and the temperature could be felt by touch.

The sites of vatham

அறிந்திடும் வாத மடங்கு மலத்தினில்

திருமூலர்

நாமென்ற வாதத்துக் கிருப்பிடமே கேளாய்
நாபிக்குக் கீழென்று நவில லாகும்

யூகிமுனிவர்

According to saint Thirumoolar and Yugi muni the places of vatham are the anus and below the navel region.

According to vaidya chatakam, vatham dwells in the following places umbilicus, rectum, faecal matters, abdomen, anus, bones, hip joints, skin, navel plexus, joints, hair follicles and muscles.

Properties of vatham

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

Functions of deranged vatham

1. Body ache and pain.
2. Pricking pain
3. Nervous debility
4. Tremors
5. Rigidness
6. Dryness
7. Throbbing pain (Restriction of movements)
8. Trauma
9. Displacement of joints
10. Weakness of functional organs and loss of functions.
11. Constipation, concentrated urination
12. Thirst
13. Sensation of fragility in the fore leg and thigh
14. Numbness and pricking pain in the bones
15. Goose skin
16. The skin, eyes, faeces and the urine are black in color.

Types of vatham

1. Pranan (Air of life)

This vatham rests in the head, thorax and neck. It coordinates the five senses, mind and intellect. Rancorous spitting, coughing, sneezing, belching, respiration and digestion of food are the several functions of pranan.

2. Abanan (Flatus air)

This is a part of elements fire. It starts from the lower part of the abdomen, hip joints, urinary bladder, genital organs, thigh and makes following to come out the body like semen, ovum, faeces and foetus. It is responsible for excretion of urine and faeces. It helps to take the essence of the digested food to the different parts of the body which requires food.

3. Viyanan:(Spreads all over body)

This is the component of space elements. The actual rest place for this is heart. This activates voluntary and involuntary movements of the body. This appreciates the sense of touch helps to take the essence of food to the strategic points of the body and guard the body.

4. Udhanan (Upward air)

This is the component of the earth elements. Which rests in the thorax predominantly and also in umbilicus, neck, nostrils. It is primarily responsible for eloquence, physical, and mental strength and complexion, alacrity and reasoning. It helps in digestion and assimilation of food.

5. Samanan (Balancing force)

It is a component of the water elements. It stays in the digestion system and kindles the digestive fire to promote digestion. It equalizes the six tastes, water, food etc.. and helps in assimilation.

6. Nagan (Air of intellectual function)

It is responsible for higher intellectual functions, hearing, thinking etc. It causes closing and opening of the eye lids.

7. Koorman (Air of yawning)

It starts from the mind and causes wirnking of the eyelids, yawning and closure of mouth. It gives strength and helps to visualize things and causes lacrimal secretions.

8. Kirukaran (Air of salivation)

It lies in the tongue and causes nasal and salivary secretion. It induces hunger; it makes to concentrate on one thing, sneezing, cough.

9. Devadhaththan (Air of laziness)

Ocular movements and human passions are attributed to this vatham. It stays either at the anus or urinary bladder.

10. Dhananjayan (Air that acts as on death)

It functions from the nose and it is responsible for the bloating of the body after death and also for the foul smell.

PITHAM

The natural shape of pitham is atomic. The heat of pitham is responsible for many actions.

The seats of pitham

தானான பித்தம் பின்கலையைப் பற்றிச்
சாய்வான பிராணவாயு வதனைச் சேர்ந்து
ஊனான நீர்ப்பையி லணுகி மூலத்
துதித்தெழுந்த வக்கினியை யுறவு செய்து
மானேகே ளிருதயத்தி லிருப்பு மாகி
…. …… …….. …….
கோனான சிரந்தனிலே யிறக்க மாகிக்
கொண்டுநின்ற பித்தநிலை கூறினோமே.

வைத்திய சாதகம்

According to tamil vaithya sadhagam,the pingalai, urinary bladder, stomach, heart, head are the places where pitham sustains.

Saint Yugi muni says that the pitham sustains in urine and located below the neck.

The characteristic of pitham

Pitham is responsible for digestion, vision, maintains of body temperature, hunger, thirst, taste, etc… Its other functions are thought, knowledge, strength, softness.

The functions of pitham

1. Maintain body temperature.
2. Produces reddish or yellowish colour of the body.
3. Produces heat energy on digestion of food.
4. Produces sweating.
5. Induces giddiness.
6. Produces blood and the excess blood are let out.
7. Gives yellowish colorations to skin, eyes, faces, urine.
8. Gives bitter or sour taste.

Type of pitham

1. **Aanalakam (The fire of digestion)**

   It lies between the stomach and the intestine.

2. **Ranjagam (Blood promoting fire)**

   This fire lies in the stomach and gives red colour to the chyme and produce blood. It improves blood.

3. **Sadhagam (The fire of energy)**

   From the heart, its helps in performing desired things with the assistance of themind, the intellect and affinity.

4. **Prasakam (The fire of brightness)**

   It gives colour complexion and brightness to the skin.

5. **Aalosakam (The fire of vision)**

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

KAPAM

The nature of kapam

Gresy, cool, dull, viscous, soft.

Seats of kapam

தொண்டையென்பின் சந்திநிறம் சோற்றுப்பை நாசிதலை
ஒண்டொடியே வாமத் துளபித்தத் தொண்ணீர்ச்
சுரப்பி யிரசதாது சுத்தநிணம் நாவும்
தரமான வையத் திடம்.

மருத்துவத் தனிபாடல்

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

The natural qualities of kapam

Stability, greasiness, formation of joints, the ability to withstand hunger, thrist, distress and temperature.It helps to withstand suffering.

Functions of kapam

1. Strength , roughness, knowledge, cool
2. Growth, heaviness of bones
3. Restriction of joints movements

4. Pallor, indigestion, deep sleep
5. Sweat taste.
6. The skin, eyes, faces, urine are white in color due to kapam.

Types of kapam

1. Avalambagam (Kapam of respiration)

It lies in the lungs and helps in respiration. It causes firmness of the limbs. It controls other four kapam and maintains equilibrium.

2. Kilethagam (Kapam of digestion)

It lies in the stomach; it mixes the consumed food and water and promotes the digestion process.

3. Bothagam (Kapam of taste)

It lies in the tongue and helps to realise the taste of the consuming food.

4. Tharpagam (Kapam ofvision)

Sustaining in the head, this refrigerant effect to cool the eyes and other sense organs.

5. Santhigam (Kapam of joints)

Sustaining in the joints this makes them move freely and easily.

The six qualities that manifest when Vatham increases

1. Hardness
2. Dryness
3. Subtility
4. Coldness
5. Mobility
6. Minuteness

The qualities that oppose the qualities of Vatham

1. Softness
2. Moistness
3. Heaviness
4. Hotness
5. Stability
6. Lump/Mass

The six qualities that manifest when Pitham increases

1. Moistness
2. Hotness
3. Harshness
4. Mobility
5. Sourness
6. Pungent

The qualities that oppose the qualities of Pitham

1. Dryness
2. Coldness
3. Tranquality
4. Firmness
5. Sweetness
6. Bitter

The six qualities that manifest when kabam increases

1. Heaviness
2. Coldness
3. Moisture
4. Softness
5. Lubricity
6. Sweetness

The qualities that oppose the qualities of Kabam

1. Light
2. Heat
3. Dryness
4. Hardness
5. Horseness
6. Pungent

Seven physical constitutions

1. Charam (chyle)

This gives mental and physical perseverance.

Increased charam leads to disease of increased kapham like indigestion.

Decreased charam leads to loss of weight, tiredness, and lassitude, dryness of the skin and diminished activity of the sense organs.

2. Senner (Blood)

Imparts colour to the body, nourishes the body and is responsible for the ability and intellect of an individual.

Increased senner causes boils in different parts of the body, throbbing pain, anorexia, mental disorder, spleenomegaly, a colic pain, increased blood pressure, reddish eye and skin, jaundice, hematuria.

Decreased senner leads to anemia, tiredness, and neuritis, and lassitude, pallor of body.

3. Oon (Muscle)

It gives shape to the body according to the physical activity and covers the bones.

Oon in excess causes cervical lymph adenitis, vertical ulcer tumour on the face, abdomen, thigh, gentitalia, etc..Hyper muscular in the cervical region.

Decreased oon leads to impairments of sense organs, joints, jaw, thigh and gentitalia gets shortened.

4. Kozhuppu(Adipose tissue)

It lubricates the joints and other parts of the body to function smoothly.

Increased kozhuppu are identical to dysponea, loss of activity.

Decreased kozhuppu leads to pain in the hip region and disease of the spleen.

5. Enbu (Bone)

Supports the frame and responsible for the postures and movements of the body.

Excess of enbu causes growth in bones and teeth.

Decreased enbu causes the bone disease, loosening of teeth and nails and splitting and falling teeth.

6. Moolai (Bone marrow)

It occupies the medulla of the bones and gives strength and softness to them.

Increased moolai causes heaviness, swollen eyes, swollen phalanges, oliguria, non healing ulcer.

Decreased moolai causes osteoporosis, sunken eyes.

7. Sukkilam (Sperm or Ovum)

It is responsible for reproduction.

Increased sukkilam causes love and lust towards women and also urinary calculi.

Decreased sukkilam causes of failure of reproduction and pain in the gentitalia.

Saint Yugi classified the vatha disease into 80 types in his text Yugi vaithiya chinthamani.

Vatham: Definition

Vatham is a clinical condition characterized by pain, swelling, pricking sensation, and loss of function due to vitiated vatha. Vatham is regarded as king among the three Uyir thadhugal.

பொற்றா மரையான் புனைமெய் யரண்காக்கும்
பொற்றா மரையான் புகல்வதென்னே – பொற்றாம்
வளவினிவை யாக்குரம்பை மன்னனென்ன மன்ன
வளவினிலை யாக்கும் வளி.

தேரன் யமக வெண்பா

The above verse says that, vatham is being held as the king who rules the (fort) body and enables the wellbeing of the citizen (the uyir) in the fort. Hence, Theraiyar refers Vatham as the prime force in normal state.

Characters of Vatham

வாதமே கதித்தபோது வாயுவுமெழும்புங் கண்டீர்
வாதமே கதித்தபோது வாயுவு வந்திடுஞ் சன்னிதோஷம்
வாதமே கதித்தபோது வந்திடும் வியாதி மேலும்
வாதமே கதித்தபோது வல்லுடல் மெலிந்து கொல்லும்.

அகஸ்தியர்

- Delirium
- Emaciation

அறியவிம் மூன்றின் தாண்மைசொன்னார் நந்தி
எறிய நல்வாத மெறிக்குங் குணங்கேளு
குறியெனக் கைகால்குளைச்சு விலாசச் சந்து
புறியென நொந்துடற் பச்சைப் புண்ணாகும்

பண்ணாய் வலிக்கும் பொருமுங் குடலோடித்
தண்ணா மலத்தைத் தம்பிக்கும் போக்காது
ஒண்ணாண ஆசன முறவே சுருக்கிடும்
மண்ணார் குளிர்சீதம் பருத்திடும் வாதமே.

திருமூலர்

- Pain in the joints and in between the ribs.
- Constipation
- Revolving pain in the intestines
- Shrisking of the anus
- Feel coldness Pricking pain all over the body

வாதமே கதித்த போது வாயுவேயெழும்பி மீளும்
வாதமேயிருமலாகி தொடர்ந்திடும் சன்னி வாதம்
போதமே செய் கிராணி பெரு வயிறு உதரத்தோசம்
பேதாவே வருவதென்ன பொருந்தவே முனிவர் சொன்னார்.

சித்த மருத்துவநோய் தொகுதி 1

- Cough
- Delirium
- Dysentery
- Ascites

வாதமே முதலாய் நாடி வாதமே தூல காயம்
வாதமே பிலவானாகும் வாதமே வழலை வேண்டும்
வாதமே மந்தம் பற்றும் வாதமே சீத காலம்
வாதமே யுடல் குளிர்ச்சி வாதமே மூலமாமே.

சித்த மருத்துவநோய் தொகுதி 1

- Loss of appetite
- Feel coldness Pricking pain all over the body
- Piles

வாதமே தடித்திருக்கும் வாயு வளரும் குளிர்ந்திருக்கும்
போதச்சிறக்கும் பசி பொறுக்கும் பொசிப்பே தென்னும் மிகவருந்தும்
தாது சிறுக்கும் உடல் கனக்கும் சாரும் சஞ்சலமில்லையெனும்
மோதும் எரிப்பு ருசி வேண்டும் உபாயம் செலுத்து மெனலாமே.

சித்த மருத்துவநோய் தொகுதி 1

- Not interested in taking food
- Loss of semen
- Sourness in the tongue

கால் கை அயர்ந்து பொருத்துளைந்து கண்ணும் தூங்கி சோவித்து
கோலம் சிறிய அங்கமெல்லாம் குறைந்து சற்றே கனங் கொண்டு
சீலமிகுந்த நிறம் கருகி சிறு நீர் சிறுத்து முடுகி வரும்
வாலத் தடங்கண் மானணையீர் வாத ரோகமிதுவாமே.

சித்த மருத்துவநோய் தொகுதி 1

- Gripping pain in the extremitres
- Blackening of face, eyes Falling of tears
- Dryness of the tongue
- Passing of black coloured scanty urine with pain

According to Thanvanthiri munivarin vaiththiyachara thirattu

சாத்தியமா மசானத்தின் தலைக்காடு
தண்மையாய் பிடர்பற்றித் தலைநோய் உண்டாம்
அசாத்தியமாய் காதிரண்டும் தான்பிடித்தும்
கதுப்போடு மூக்கோடு குறடுவுச்சி
நேத்தியமாய் நெத்தியொடு நோவும் ஆகி
நேராக ஆப்படித்தாப் போலக் குத்தும்
மாத்தியமாய் கணக்கிலேசப் படுத்துகின்ற
வாதத்தின் நோவு வண்மை தானே.

தன்வந்திரிமுனிவரின் வைத்தயசாகரத் திரட்டு

- Head ache
- Excessive pain in the upper part of the nose, eyes and forehead
- Stabbing pain in the body

According to Theran vagadam

வாதவீறு அன்ன மிறங்காது கடுப்புண்டாம் வண்ணமுண்டாம்
மோது கட்டுரோகம் சுரமுண்டா மிருமலுமா முறங்கா தென்றும்

தேரையர்வாகடம்

- Anorexia
- Body pain
- Fever
- Cough
- Anaemia

According to Agasthiyar aayul vetham 1200

வாதத்தின்குணமேதென்னில் வயிறுது பொருமிக்கொள்ளுந்
தாதுகளுலர்ந்தகைகால் சந்துகள் கடுப்புத்தோன்றுந்
தீதுற்றுச்சிறுநீர்தானுஞ் சிறுத்துடன் கடுத்து வீழும்
போதுற்றவாதமென்று புகன்றனர் முனிவர்தாமே.

அகஸ்தியர் ஆயுள்வேதம்1200

மேவியவாதஞ்செய்யுஞ் குணந்தனை விளம்பக்கேளாய்
தாவியேவயிறு மந்தஞ் சந்துகள் பொருந்து நோவாஞ்
சீவியதாதுநாசஞ் செறுத்துடன் சிறுநீர்வீழுங்
காவியங்கண்ணினாளே மலமதுகருகிவீழும்.

அகஸ்தியர் ஆயுள்வேதம்1200

According to Agathiyar Ayul Vetham the deranged Vatham produces abdominal discomfort, pain in joints, oliguria, dysuria, constipation and flatulence.

According to Theran vagadam

தக்க வாயு கோபித்தால் சந்து வுளைந்து தலைநோவா
மிக்க மூரி கொட்டாவி விட்டங் கெரியு மலங்கட்டும்
ஒக்க நரம்பு தான்முடங்கு முலர்ந்து வாய்நீ ரூறிவரும்
மிக்க குளிரும் நடுக்கமுமாம் மேனி குன்றி வருங்கானே.

தேரையர் வாகடம்

- Joints pain
- Headache
- Constipation
- Stiffness and restricted movements of joints
- Increase salivation
- Rigor
- Weight loss

நோய் வரும் வழி (Etiology)

என்னவே வாதம்தா னெண்ப தாகும்
இகத்திலே மனிதர்களுக் கெய்யு மாறு
பின்னவே பெண்தனையே சேராஞ் செய்து
பெரியோர்கள் பிராமணரைத் தூஷி னித்தும்
வன்னவே வச்சொத்திற் சோரஞ் செய்து
மாதாபிதா குருவைம றந்த பேர்க்கும்
கன்னவே வேதத்தை நிந்தை செய்தால்
காயத்திற் கலந்திடுமே வாதந் தானே.

யூகி வைத்திய சிந்தாமணி 800

According to the text, those who are squandering money, insulting the elders, abandoning or forgetting the parents, blaspheming the Holy books, not respecting the divine gifts, having wickedness in their mind and those with day slumber and staying back at night will get Vatha diseases.

தானென்ற கசப்போடு துவர்ப்பு றைப்பு
சாதகமாய் மிஞ்சுகிலுஞ் சமைத்த வண்ணம்
ஆனென்ற வாறினது பொசித்த லாலும்
ஆகாயத் தேறலது குடித்த லாலும்
பானென்ற பகலுறக்க மிரா விழிப்பு
பட்டினியே மிகவுறுதல் பார மெய்தல்
தேனென்ற மொழியார்மேற்சிந் தையால்
சீக்கிரமாய் வாதமது செனிக்குந் தானே.

யூகி வைத்தியசிந்தாமணி 800

Increased intake of bitter taste, astringent, pungent, increased intake of water, excessive starvation, increased sexual desire will produce diseases of vatham.

வளிதரு காய்கி ழங்கு
வரைவிலா தயிலல் கோழை
முளிர்தயிர் போன்மி குக்கு
முறையிலா வுண்டி கோடல்
குளிர்தரு வளியிற் றேகங்
குனிப்புற வுலவல் பெண்டிர்
களித்தரு முயக்கம் பொற்றோர்
கடிசெயல் கருவியாமால்.

சபாபதி கையேடு

According to Sababathi Kaiyedu, increased intake of tubers, increased exposure to wind, living in higher altitudes, increased exposure to chill; increased sexual desire will aggravate the vatha disease.

According toTheraiyar vagadam

வெய்யில் நடக்கை யாலும் மிகத்தண்ணீர் குடிக்கை யாலும்
செய்யிழை மகளி னாளைச் சேர்ந்தனு பவிக்கை யாலும்
பையவே உண்கை யாலும் பாகற்காய் தின்கை யாலும்
தையலே வாத ரோகஞ் சனிக்குமென் றறிந்து கொள்ளே.

தேரையர் வாகடம்

According to Theraiyar vagadam, walking in the sun light, drinking too much of water, eating too much of bitter gourd will aggravate the Vatha disease.

நோயின் இயல்பு

வளியு மையுந் தன்னிலை கெட்டு
வலியுடன் வீக்கச் சுரமும் காய்ந்து
மூட்டுக டோறும் முடுக்கியே நொந்து
மூட்டுக டன்னின் நீரும் சுரந்து
தாங்கொணா வலியுடன் நொந்திடு மம்மே.

சபாபதி கையேடு

According to Sababathi kaiyedu, deranged Vatham produces Swelling, tenderness and restricted movements in the joints and fever.

UTHIRAVATHA SURONITHAM

Uthiravatha suronitham is one among Vatha diseases. Vatha suronitham is the condition dealt under vatha disease.

- Uthiravatha suronitham – Uthira vatham+suronitham
- Uthira vatham - Arthritis of rheumatic origin marked by severe pain and formation of inflammatory nodules in the regions of joints, especially in the limbs.
- Suronitham - Blood and menstrual blood

Yugi classified the vatha suronitham into seven types.

1. Vatha suronitham
2. Uthira vatha suronitham
3. Siththu vatha suronitham
4. Vaigitha vatha suronitham
5. Paithiya vatha suronitham
6. Slethuma vatha suronitham
7. Uthara vathasuronitham

UTHIRA VATHA SURONITHAM

வைகிதமாய்க் கணைக்காலு முழங்கால் தானு
மற்கடஞ் சந்துபுற வடியும் வீங்கிச்
செய்கிதமாய் சிறுவிரல்கள் மிகவு நொந்து
சிந்தைதடு மாறியே சலிப்புண் டாகும்
பைகிதமாம் பயித்தியத்தில் வாத மிஞ்சிப்
பாரமா யுற்பவித் தழலுண் டாகும்
உய்கிதமாய் மசனமது தானும் வேண்டா
உதிரவாதச் சுரோணிதத்தி னுணர்ச்சியாமே.

யூகி வைத்திய சிந்தாமணி 800

- Swelling present in the ankle joints, knee joints, hip joints.
- Pain and tenderness present in the minor joints especially in hands.
- Depression
- Loss of appetite
- Fever

VATHA SURONITHAM

அறிந்திட்ட வங்கமெலா மெலிவு மாகி
அசைவான தவ்விடங்கள் வீக்கமாகி
நறிந்திட்ட நடைகொடா தானி ருத்தல்
நலியாகி மொழிமொழிய வீக்கமாக்
சொறிந்திட்டு தேகமெங்கு மசைவு காணல்
சோற்றின்மே னினைவின்றித் தூக்க மாதல்
வறிந்திட்ட வாயதனி னீர்தா னூறல்
வாதசு ரோணிதந்தானும் வகுத்த வாறே.

யூகி வைத்திய சிந்தாமணி 800

- Emaciation
- Swelling of joints
- Restricted movements
- Discomfort
- Excessive salivation
- Loss of appetite

SITHTHU VATHA SURONITHAM

வாறான சரீரமெலா நுழைந்தே யூதும்
மாசற்ற தோல்தானுந் திரைந்து
நாறான நார்போல நரம்பு கட்கும்
நாக்குத்தான் வழவழத்துக் கோழை யாகும்
நூறான நெருப்புத்தான் பட்டாற் போல
நொந்துமே சடமெல்லாங் கொப்பளிக்கும்
வீறான உரிந்துபின்னை வெதும்பி வீங்கும்
மிக்கசித்து வாதசுரோ ணிதம தாமே.

யூகி வைத்திய சிந்தாமணி 800

- Anasarca
- Nerual pain
- Glossy tongue
- Bullous eruption as in burn
- Exfolation, swelling and warm

VAIGITHA VATHA SURONITHAM

ஆமென்ற வீங்கினதோர் இடத்தில் ரத்த
மழுத்தமாய்த் திரண்டுமே யெங்கும் பாய்ந்து
ஓமென்று ஒட்டியே திரண்டி ருக்கு
முறுதியாய்த் தொட்டுடனே மெத்தென் றாகுந்
தேமென்ற தேகமெங் கணுகிச் சிக்குங்
சீறியதோ ரிருமலோடு காய்ச்ச லுண்டாம்
பாமென்ற சடந்தனிலே திமிருண் டாகும்
பாராமாய் வைகிதமாம் வாதந் தானே.

யூகி வைத்திய சிந்தாமணி 800

- Swelling in hyperaemia
- Soft on touch
- Cough with fever
- Irritability

PAITHIYA VATHA SURONITHAM

உணர்ச்சியாய்ச் சுரோணிதந்தான் மிகவெதும்பி
ஊக்கமாய்த் தேகமெங்கு மிகவே நொந்து
முணர்ச்சியாய் முழங்கால்கள் முழங்கையொக்க
முனையான சிறுவிரல் கன்னம் நெற்றி
தணர்ச்சியாய்ச் சந்துசரு வாங்க மெங்குந்
தாட்டிகமாய்க் குடைந்து சுரமு முண்டாம்
பணர்ச்சியாய்ப் பாண்டது பொன் மேனி யாகும்
பயித்தியவாத சுரோணிதத்தின் பண்பு தானே.

யூகி வைத்திய சிந்தாமணி 800

- Hyperaemia
- Tenderness in knee joint, elboew joints and all minor joints
- Polyarthralgia
- Pyrexia
- Anaemia

SILETHUMA VATHA SURONITHAM

பண்பாக வுடல்குளிர்ந்து வயிறு வீங்கிப்
பதைப்பான விடந்தொட்டாற் போல நோவாந்
திண்பான சிரசுநெற்றி நோக்கா டுண்டாஞ்
சிலேட்டுமமாய்க் கோழையொடு சுவாச மாகும்
மண்பாக மயக்கமொடு கனவு முண்டாம்
வாய்வறண்டு ருசியில்லா வருத்த மாகும்
நண்பாக நாடியுமே பட படக்கும்
நற்சிலேட்ம சுரோணிதமாம் நாடுங் காலே.

யூகி வைத்திய சிந்தாமணி 800

- Body chillness with abdominal distension
- Severe pain and Headache
- Syncope and Hallucination
- Dryness of mouth
- Tachycardia

UTHARA VATHA SURONITHAM

நாடுமே சுரம்வந்து நடுக்க லுண்டாம்
நாவறண்டு தலை நொந்து உடம்ப ழுந்தி
வாடுமே தேகமெலா மனிச்சப் பூப்போல்
மகாவருத்த முண்டாகி மயக்க மாகுஞ்
சாடுமே யடிக்கடிதான் பேதி தானுந்
தவிக்குமே தண்ணீர்தா னாட்டமாகித்
தேடுமே சோற்றின் மேல் நினைவு தானும்
செயவுதர வாதசுரோ ணிதந்தா னென்னே.

யூகி வைத்திய சிந்தாமணி 800

- Fever with Rigor
- Dryness of mouth
- Headache
- Pain in all over joints
- Diarrhoea
- Excessive thirst
- Increase Hunger

According to Thanvanthiri Roga nirnaaya charam

உடம்பெல்லாம் கருத்துநோவா மொய்வில் நித்திரையு முண்டாகும்
உடம்பெல்லாம் மெரிவுமுண்டாம் மோங்கிய திமிருங்காணும்
உடம்பெல்லாம் உலர்ந்துவற்று மோங்கார மருசியுண்டாம்
உடம்பெல்லாம் மிவ்வண்ணமாகும் உதிரத்தில் வாதமாமே.

தன்வந்திரி ரோக நிர்ணய சாரம்

- Increase body pain
- Increased sleep
- Burning sensation in the body
- Numbness
- Tiredness
- Loss of appetite

Vali azhal keel vayu

வாதபித் தக்கீல் வாய்வின்
வருங்குறி சாற்றக் கேளாய்
ஏதமார் மந்த மேப்பம்
இரைச்சலும் வயிற்றிற் காணும்
ஓதருங் குத்தல் வீக்கம்
ஓய்தலில் எரிச்சலுண்டாம்
காதறு முறக்க மின்மை
காய்ச்சலும் காணுங் கண்டாய்.

சபாபதி கையேடு

- Eating food that will aggravate the Vatham&pithamdosham like Mutton, Fish, egg, potato, shark, having intoxicating drinks like alcohol & toddy and lack of physical activity can cause disease.
- Indigestion of first taken food with belching
- Constipation, Belly fat
- Reddening, irritation and pain in wrist and digits of the foot.
- Stiffness in the joints with restricted range of movements.
- Insomnia, Restlessness in bed, mild fever

PINIYARI MURAIGAL (METHOD OF DIAGNOSIS)

பிணியறிமுறைமை - பிணி +அறி + முறைமை

It is based upon the three main principles

1. Poriyal Arithal (Inspection)
2. Pulanal Arithal (Palpation)
3. Vinaathal (Interrogation)

According to Theraiyar,

"நாடிப்பரிசம் நாநிறம் மொழிவிழி
மலம் மூத்திரமிவை மருத்துவராயுதம்"

தேரையர்

"மெய்க்குறி நிறந்தொனி விழிநாவிருமலம் கைக்குறி"

தேரையர்

These tools not only help in the diagnosis but also help to observe the prognosis of the diseases and for reassuring the patient and to be more insightful about the nature of diseases. They are

1. Naadi (Pulse)
2. Sparisam (Sensation to Touch)
3. Naa (Tongue)
4. Niram (Colour)
5. Mozhi (Voice)
6. Vizhi (Eyes)
7. Malam (Facces)
8. Moothiram (Urine)

NAADI

வாதத்தில் சேத்தும மாகில் வலியோடு வீக்கமுண்டாம்

அகஸ்தியர் நாடி

அறிந்துபார் வாதமே தனித்ததானால்
சரிந்திடவே கால்முடக் கும்.

அகஸ்தியர் ரத்தினசுருக்கம்

காணப்பா வாத மீறில் கால்கைகள் பொருந்தி நோகும்

காவிய நாடி

சொல்லிய யையத்தோடு பித்தமுங் கூடிற்றானால்
வல்லியம்போலக் குத்தும்மைந்தனே எலும்பு தோலும்
மல்லிய சரீரம் நோகும் வரிசையாய்ச் சுரமுங் காணும்.

காவிய நாடி

The state of prominence of the three naadis on each day

காலையில் வாதநாடி கடிகையில் பத்தாகும்
பாலையில் பித்தநாடி பகருச்சி பத்தாகும்
மாலையாம் சேத்துமநாடி மதிப்புடன் பத்தாகும்
வாலையா மனோன்மணிக்கு வகுத்துமே தொகுத்ததாமே.

வைத்திய சார சங்கிரகம்

During day time, in 12hrs Vatham will be prominent for four hours from sunrise. Pitham will be prominent during the next four hours. Ayyam will be prominent during the last four hours. The same ratio continues from the sunset upto the next morning. (i.e.) Vatham-6a.m.to 10a.m.; Pitham-10 a.m. to 2 p.m.; Ayyam -2 p.m. to 6 p.m.

The prominence and effect of the three naadis during the week

சந்திரநாட்காலையில் வாதம்
நடந்திடில் சுகமெய்தும்
சந்திரநாளாஞ் சகிபுகற்புந்தி
சுக்கில பக்கச் சுரற்குருகாலையில்
இறைவ னியங்கில் எய்துஞ் சுகமே.

கையெழுத்துப்பிரதி

If Vatham (Idakalai) is prominent in the morning during Monday, Wednesday, and Friday and Thursday in Sukkila patcham (waxing moon) the body and mind will be healthy.

If Pitham (Pinkalai) is prominent in the morning during Sunday, Tuesday, and Saturday and Thursday in Krishna Patcham (waning moon) the body and mind will be healthy.

The time when the Naadis are prominent during the month

வாதம் தன்னிலையில் சிறப்புறும் மாதங்கள்:

ஆடி முதல் ஐப்பசி (கடகம் -துலாம்)

பித்தம் தன்னிலையில் சிறப்புறும் மாதங்கள்:

பங்குனி முதல் ஆனி (மீனம்-மிதுனம்)

ஐயம் தன்னிலையில் சிறப்புறும் மாதங்கள்:

கார்த்திகை முதல் மாசி (விருச்சகம்- கும்பம்)

பதினென் சித்தர் நாடி

1. The months during which Vatham will be prominent are from Aadi to Aippasi.
2. The months during which Pitham will be prominent are from Panguni to Aani.
3. The months during which Ayyam will be in its natural state are from Kaarthigai to Maasi.

The perfect time and month for pulse reading

சித்திரை வைகாசி- சூரியஉதயம்

ஆனி ஆடி ஐப்பசி கார்த்திகை- மத்தியனம்

மார்கழி தை மாசி- சூரியாஸ்தமனம்

பங்குனி ஆவணி புரட்டாசி - இராத்திரி

அகஸ்தியர் நாடி

1. During the months of Chithirai and Vaikasi at the time of sun rise.
2. During the months of Aani, Aadi, Aippasi and Kaarthigai at midday.
3. During the months of Maarkazhi, Thai and Maasi at sunset.

TREATMENT

MANAGEMENT OF SIDDHA

According to the Siddha system, the main aim of treatment is to cure both physical and mental illness.Medicines are not only for complete healing but also for rejuvenation (Kayakarpam, Yogam, pranayamam).

Line of treatment in Siddha system

1. Neekam (Treatment)
2. Niraivu (Restoration of well being)
3. Kappu (Prevention)

Neekam (Treatment)

1. To maintain the uyir thadhugal in equilibrium state.
2. To treat the diseases by internal medicines and external medicines.

"விரேசனத்தால் வாதம்தாழும்"

சித்த மருத்துவாங்கச் சுருக்கம்

- Abanan, Udhanan, Viyanan and Samanan are mostly affected in Vatha diseases. Purgation therapy some what neutralizes the affected vayus.
- Purgation medicines vary from one person to another, based on the characteristics of the disease, age and condition of the patient.
- Purgation medicines in the form of Decoction (Kudineer), Crushed fresh herb (Karkam) and Medicated oil (Ennai) are preferred during the months of June to August (Aani&Aadi).
- Purgation medicines with Croton tiglium (Nervalam), latex of Euphorbia antiquorum (Kalli), Mercury (Rasam) and various salts (Uppu) are preferred during the months of August to April (Karkalam, Munpani&Pinpani).
- Purgation medicines must be administered in the late night or early morning.
- A day of medicated rest must be given after purgation medicines after which the actual internal and external medication needs to be started.

"வேர் பாரு தழை பாரு மிஞ்சினக்கால்
மெல்ல மெல்ல பற்ப செந்தூரம்பாரு"

சித்த மருத்துவாங்கச் சுருக்கம்

- The above verses indicate that, Parpam&chendooram medicines can be taken only if the herbal medicines fail to cure the disease. If the above 2 medicines fail, then surgical treatments like Aruvai (Incisional), Akni (Thermal) &Kaaram (Acids) needs to be performed.
- Treatment has to be given in accordance with the cause of the disease, clinical manifestations and affected systems (Udalthathukkal) of the patients.

சூதகந்தி தாதுபற்பம் சொன்னநாட் டார்சிகிச்சை
ஓதரிய மூலியிம்மண் ணூர்சிகிச்சை – வேதடரும்
சத்திர ஷா ராக்கினிநி சாசரச்சி கிச்சையைன்றே
மூத்தரத்த தாகும் மொழி.

தேரையர்

KAAPU (Prevention)

According to Siddha, the root cause of the disease is our past and present karmas. Knowing the cause thereby removing it and thus preventing the disease is the main aim of Siddha system of medicine. Past deeds cannot be eliminated easily, but one can prevent disease and extend his/her life expectancy by preventing the exsisting karmas.

PINIYANUGA VITHI

Rules for a healthy living

திண்ண மிரண்டுள்ளே சிக்க வடக்காமற்
பெண்ணின்பா லொன்றைப் பெருக்காமல் - உண்ணுங்கால்
நீர்சுருக்கி மோர்பெருக்கி நெய்யுருக்கி யுண்பவர் தம்
பேருரைக்கிற் போமே பிணி.

பதார்த்த குண சிந்தாமணி

To be free from diseases and for a healthy living one should consume boiled water, diluted butter milk and melted ghee. Over indulgence in sex should also be avoided.

SUBSTANCES USED FOR NEUTRALISING THE THREE HUMORS

ஒன்றிய வாத பித்த கபமிவை யுயரா வண்ணம்
நன்றுறு கறிக ளெல்லாம் நாளுமே சமைப்ப ராய்ந்தோர்
தின்றிடு மிளகுமஞ்சள் சீரக முயர்ந்த காயம்
வென்றிகொள் சுக்கோடேலம் வெந்தியம் உள்ளி சேர்ந்தே.

பதார்த்த குண சிந்தாமணி

If one wants to be free from the disease of three humours one should take the food cooked with pepper, turmeric, cumin seeds, asafoetida, dried ginger, cardamom, fenugreek and garlic. Thiridhoda samaporulkal, which brings three humors to normal state and act as an adjuvant therapy.

ELIMINATING THE AGGRAVATED HUMOURS

ஓதுகின்ற மலக்கட்டை யொழிய வைத்தால்
உடலிலுள்ள வாதையெலா மொடுங்கிப் போகும்
தாதுற்ற சிறுநீரைத்தெளிய வைத்தால்
சடத்திலுள்ள வேகமெலாந் தணிந்து போகும்
கோதுற்ற உமிழ்நீரை முரிய வைத்தால்
கூட்டிலுள்ள பகையெல்லாம் குலைந்து போகும்
கோதடர்ந்த இவைமூன்றும் களங்க முற்றால்
கொல்லவந்த காலனையும் வெல்ல லாமே.

சித்த மருத்துவாங்கச் சுருக்கம்

பேதியால் வாதந்தாழும்
சத்தியால் பித்தந்தாழும்
நசியம் அஞ்சனத்தால் ஐயந்தாழும்

சித்த மருத்துவாங்கச் சுருக்கம்

According to Theraiyar, Purgation reduces the aggravated Vatha, Vomiting reduces the aggravated Pitham, and Nasal medication reduces the aggravated Kapam.

PANCHA KARPAM

மிருகமதம் பித்தமணிவேம்பு கடுநெல்லி
கருகுரத்துப் பாலரைத்துக் காய்ச்சி – யொருமிட
மிங்கற்ப நோய்க்கு மிடமில்லை யெஞ்ஞான்றும்
மைங்கற்ப மீதேயறி.

பதார்த்த குணசிந்தாமணி

Curcuma zedoria (Kasthuri Manjal), Neem seeds (Azadiracta indica), Terminalia chebula (Kadukkai Thol) and Phyllanthus emblica (Indian goose berry) are to be ground along with Milk (of KaraamPasu). Panchakarpam when applied over scalp and taken as oil bath can prevent Obesity andweakness of the body.

பூ நெல்லி நீர்மிளகு பொற்கடுக்காய் வான்மஞ்சள்
கானகத்து வேம்பரிசிகாரிகையே – மானங்களே
ஒன்றரை யொன்றேகால் ஒன்னறுறுதி முக்கால்
கன்நரைக்கை யான்நீறிற் றேய்.

பதார்த்த குணசிந்தாமணி

One must take the five drugs namely, dried fruit of Emblica officinalis, white pepper, yellow gallnut, yellow zedoary and the seed of margosa having the components of the earth, water, fire, air and space in one and a half. One and a quarter, one three fourth and half measures respectively for preparing pancha karpam.

SUBSTANCES THAT ELIMINATE THE VATHA HUMOUR

செங்கழு நீர்கோஷ்டந் தேன்மிளகு நல்லெண்ணெய்
தங்குபெருங் காயந் தழுதாழை – எங்கெங்கும்
கூட்டுசிறு முத்துநெய் கோதில் உழுந்திவைகள்
வாட்டுமனி லத்தை மதி.

பதார்த்த குணசிந்தாமணி

1. Senkazhuneer
2. Kostam
3. Milagu
4. Sesame oil
5. Asafoetida
6. Castor oil
7. Black gram
8. Thaluthazhai

QUALITTES OF BEDDINGS

Flower bed: It will relieve the sense of heat caused by the intake of medicines.

Silk cotton bed

If one sleeps in the bed of Silk Cotton it removes the sense of heat.

Grass mat

It removes dyspepsia, fever and it causes coolness to the body and gives sound sleep.

Quality of the fan made of vetivera zizanioides

The fan of Vettivera zizonoides will remove the insanity, burning sensation of the body, polydipsia and gives pleasure.

Palm leaves fan

The palm leaves fan removes derangement of Vatham, Pitham and Kapham and cures the altered sense of taste.

3.2 MODERN ASPECTS

RHEUMATOID ARTHRITIS

INTRODUCTION

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

DEFINITION

Rheumatoid arthritis is a chronic inflammatory, destructive and deforming symmetrical poly arthritis associated with systemic involvement. The individuals with HLA – DR4 and HLA- DR1 and familial aggregation.

It is characterized by deforming symmetrical poly arthritis of varying extent and severity, associated with synovitis of joints and tendon sheaths, articular cartilage loss, erosion of juxta articular bone, and most of the patients the presence of IgM rheumatoid factor in the blood, Which occurring throughout of the world 3 to 4 decade of life. The prevalence of the RA is approximately 0.8-1.0% in Europe and India, with female to male ratio of 3:1.

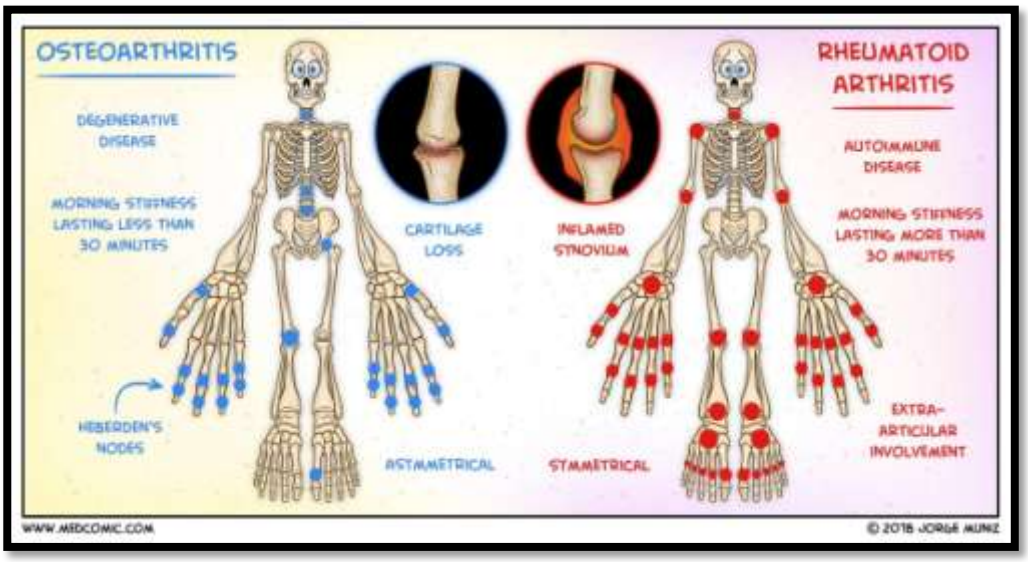


Figure: 3.2.1 Joints involvement in Rheumatoid arthritis

ETIOLOGY

The exact cause is unknown but malfunction of the cellular and humoral arms of the immune system.

Triggering factor

1. Infection (Mycoplasma, Epstein Barr virus, Cytomegalovirus)
2. Vaccination
3. Physical trauma
4. Psychological stress.
5. The possible damage of HLA-DR4 and HLA-DR1 in initiation of immunologic damage.
6. Allergic factor
7. Endocrine factors
8. Metabolic factors

PATHOLOGY

Rheumatoid arthritis is a progressive inflammatory arthritis of unknown origin involving multiple joints multiple joints and characterized by a tendency to spontaneous remission and subsequent relapses.

Arthritis is the most prominent manifestation and beings generalized multisystem connective tissue disorder it may involve para articular structures such as bursae, tendon sheaths, tendons and extra articular tissue such as subcutis, cardiovascular system, lungs, spleen, lymph nodes, skeletal muscle, central and peripheral nervous system, eyes.

Figure: 3.2. 2 Knee joint involvement in RA

The following description is confined to changes in the synovium and joints.

Early stages

The joints in early rheumatoid arthritis show redness, pain, heat and localized swelling.

Synovial effusion containing increased number of polymorphonuclear leukocytes.

The synovial membrane is congested swollen and shows a pronounced,villous pattern

Histological examination shows increased amount of polymorphs and fibrin giving rise to suspicion of an infectibve process.

Chronic inflammatory appearance with abundant lymphocytes,plasma cells, fibrin, polymorphonuclear cells and increase in synovial lining cells.

Later stage

As the disease progresses more destructive changes occur within joint.

1. Pannus which is the vascular granulation tissue.
2. Erosive destruction of bone secondary to batchy loss of articular cartilage.

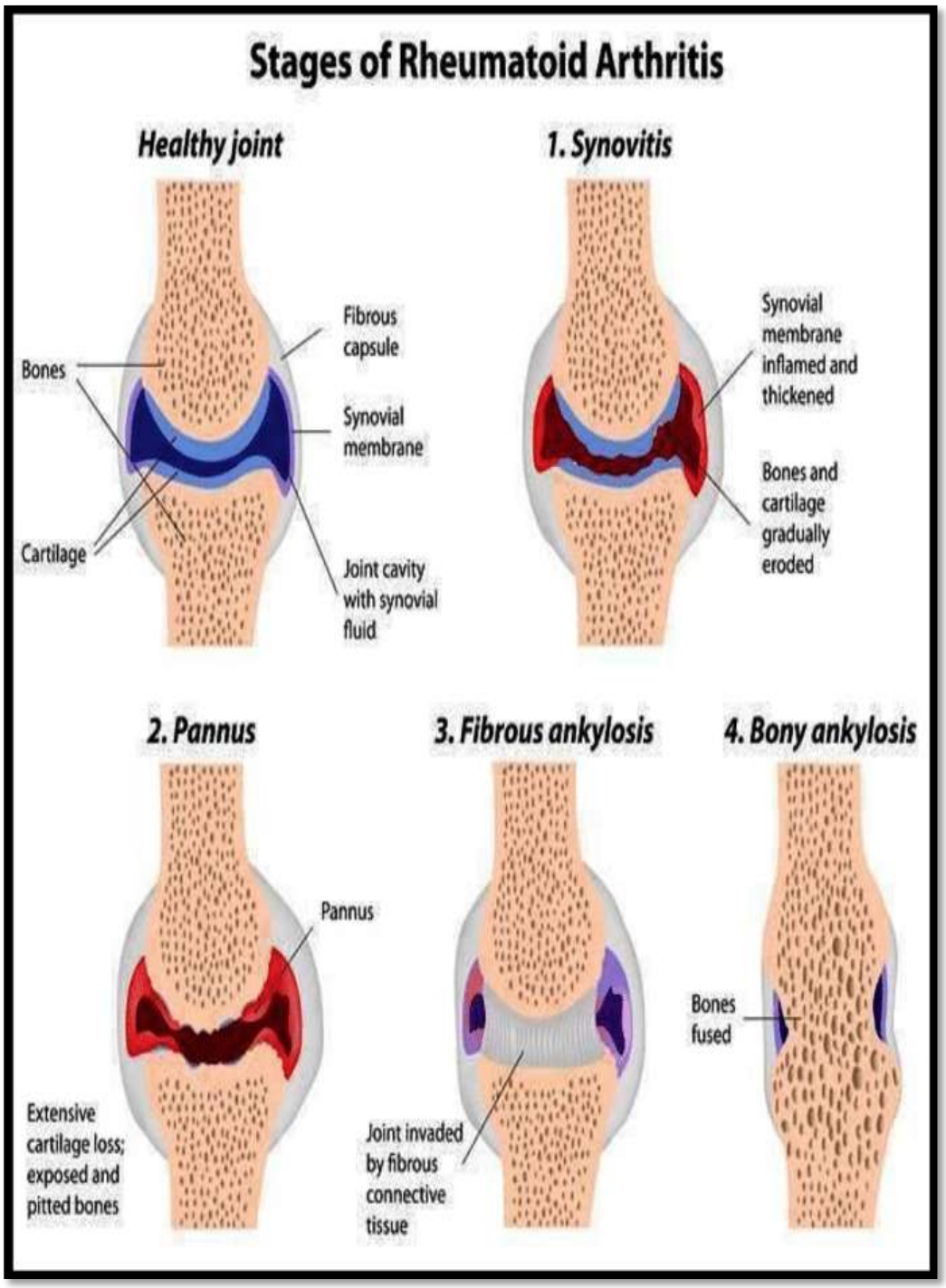


Figure: 3 .2.3 Stages of RA

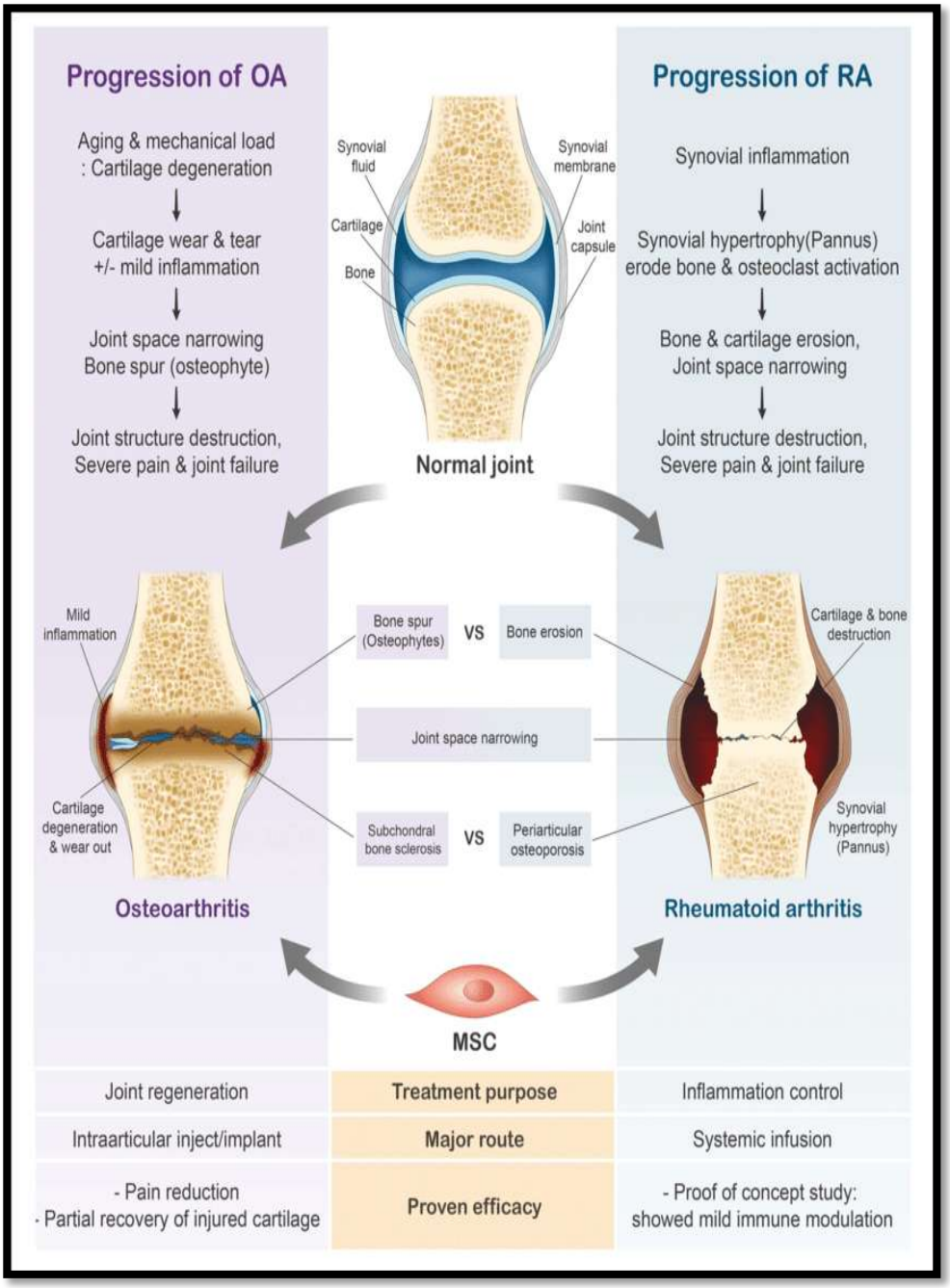
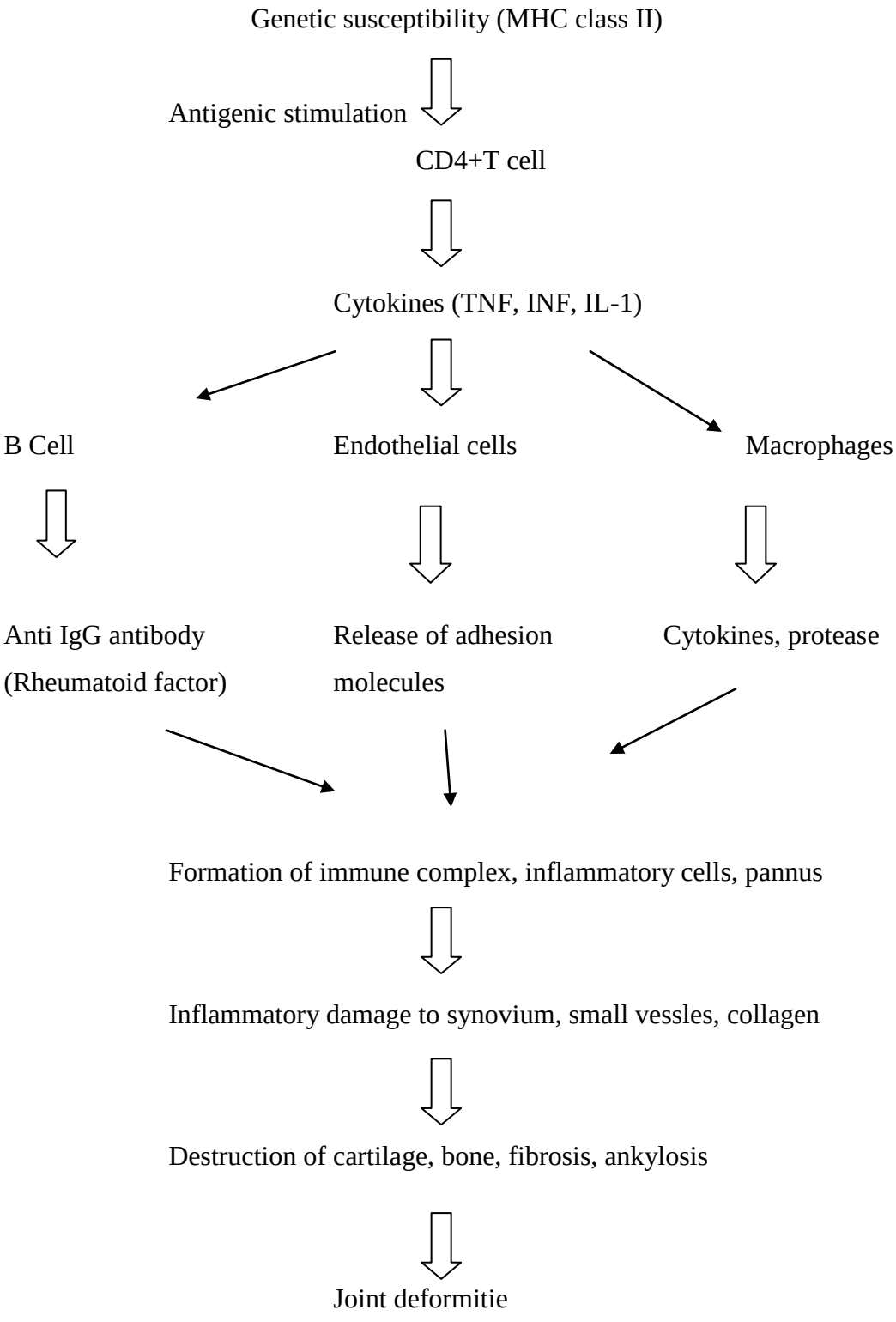


Figure: 3.2.4 Progression of Rheumatoid arthritis

The following changes are happened in synovial tissue



CLINICAL COURSE AND SYMPTOMS

The most typical presentation is pain, joint swelling and morning stiffness affecting the small joints of the hands, feet and wrist in symmetrical fashion.

RA is acute onset, with severe early morning stiffness, polyarthritis and pitting oedema common in old age.

Other symptoms,

1. Fatigue
2. Weakness
3. Vague arthralgias
4. Myalgias
5. Low grade fever
6. Weight loss
7. Excessive sweating
8. Lymphadenopathy

The most commonly involved joints as;

1. Finger joint (90%)- MCP and PIP joints
2. Shoulder joint (60%)
3. Foot joint (20%)
4. Wrist joint (15%)

Other joints involved in chronic rheumatoid arthritis;

1. Temporomandibular joint
2. Cervical joint C_1C_2 (atlanto axial dislocation)
3. Sternoclavicular
4. Elbow joints (extension defects, epicondylitis, olecranon bursitis- ulnar deviation)
5. Hand joint (Swan neck deformity ,boutonniere deformity)
6. Hip and knee joint (Morant Baker's cyst)

ARTICULAR MANIFESTATIONS OF RHEUMATOID ARTHIRITIS

1. Tender and boggy swelling of proximal interphalangeal and metacarpophalangeal joints, wrist and caput ulnae are common early sign.
2. Tendo synovitis of the flexor and extensor tendons occasionally with small palpable nodules.
3. Interosseous muscle atrophy rapidly within a month onset of pain.
4. Limitation of wrist dorsiflexion and finger flexsion is common.
5. **Elbow joint**

   Synovial inflammation is best recognized at the groove between the olecranon and lateral epicondyle as fullness associated with tenderness, passive pronation and supination are painful.

6. **Shoulder joints**

   Shoulders are affected in all patients. Synovitis of the glenohumeral joints, Acromio clavicular joints,sternoclavicular joints.

7. Feet involvement parallels that of the hands.
8. Metatarsal joints synovitis is elicited by tenderness at palpation of joints (Metatarsalgia).
9. Ankle synovitis is elicited by pain on plantar or dorsi flexion of the foot and tenderness present in distal part of the malleloi.
10. Feet deformities is lateral deviation of toes, cock up toes and valgus deformity at the ankle.
11. Knee joint synovitis is first identify by supra and infra patellar swelling, patella click or the bulge sign.
12. Hip joint involvement is very rare.
13. Facet joint synovitis from C1 to C4 is frequently observed and symptoms improved immobilization with a cervical collar.
14. Subluxation of vertebrae causing cord compression.
15. Temporo mandibular joints are affected in one fourth of patients usually symmetrically and causing no disability.

DEFORMITIES OF HANDS

1. Symmetrical peripheral joints swelling of the metacarpophalangeal and interphalangeal joints.
2. **ULNAR DEVIATION**

Due to rupture of the collateral ligaments at the metacarpophalangeal joints. Which is enable to extensor tendons to slip from their grooves towards the ulnar side.

3. **BOUTONNIER'S DEFORMITY**

Due to rupture of central extensor expansion of the fingers resulting inflexion at the proximal interphalangeal joints (PIP).

Staging of boutonnier's deformity in rheumatoid arthritis

Stage I: Synovitis and mild deformity

Stage II: Moderate deformity (30-40 degree flexion) but passive extension is possible

Stage III: Fixed flexion contracture

4. SWAN NECK DEFORMITY: (INTRINSIC PLUS DEFORMITY)

Due to rupture of the volar plate of the PIP. There is hypertension of the joints proximal interphalangeal joints and flexion of the distal interphalangeal joints(DIP).

Staging of swan neck deformity in rheumatoid arthritis

Stage I: proximal interphalangeal joints (PIP) supple in all metacarpophalangeal joints (MCPJ) positions

Stage II: proximal interphalangeal joints (PIP) flexion limited with metacarpophalangeal joints (MCPJ) hyperextension

StageIII: proximal interphalangeal joints (PIP) flexion limited in all metacarpophalangeal joints (MCPJ) positions

Stage IV: Rigid deformity with ankylosis on radiograph

Swan neck classification

I: PIP joint flexible in all positions

II: PIP motion limited.

III: Fixed PIP joint contracture but x-ray is okay

IV: X-ray shows arthritic changes

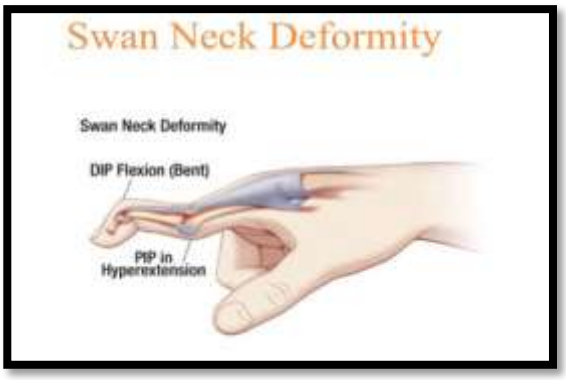


Figure: 3.2.5 Swan neck deformities in hand

5. Trigger finger and trigger nodules

   Due to nodules over the tendons.

6. Z deformity of the thumb.
7. Subluxation and dislocation of metacarpo phalangeal joints.

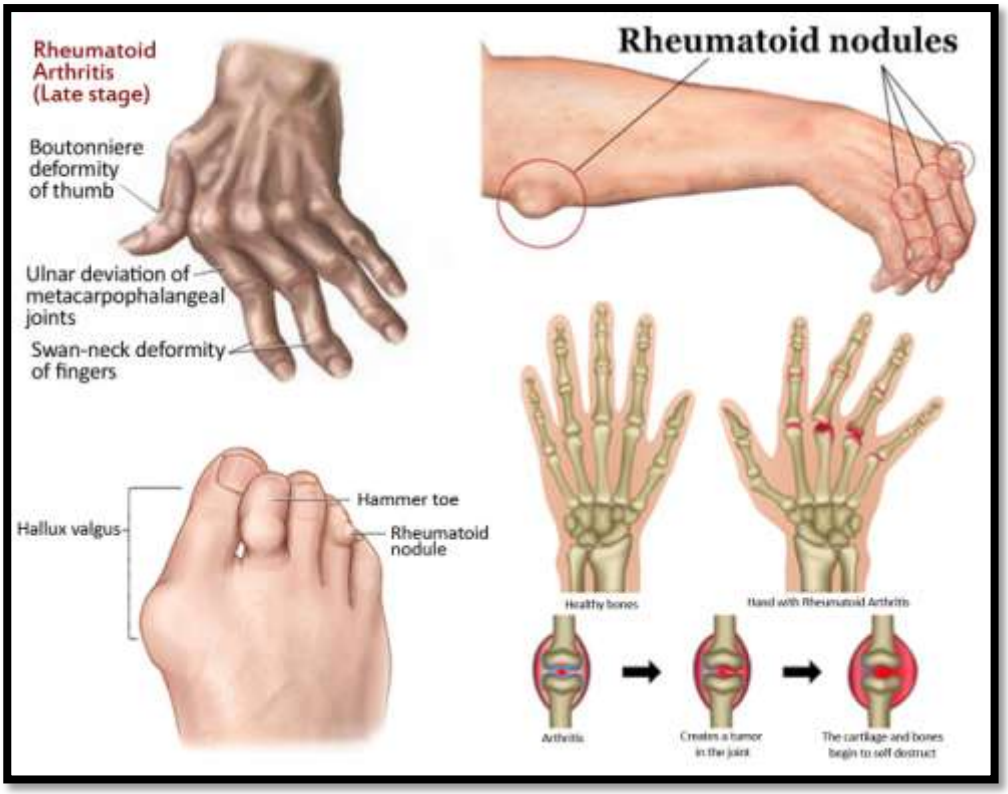


Figure: 3.2.6 Deformities of hand and foot in rheumatoid arthritis

DEFORMITIES OF FOOT

1. Hallux valgus deformities of the great toe
2. Claw toes
3. Callosity under PIP joints
4. Planter callosity
5. Atrophy of planter metatarsal fat pad
6. Prominent metatarsal head
7. Hammer toes
8. Rheumatoid nodules
9. Calcaneal erosions
10. Achilles tendinitis
11. Flattening of longitudinal arch
12. Bunion
13. Over riding of second and third toes

EXTRA ARTICULAR MANIFESTATIONS OF RHEUMATOID ARTHIRITIS

SYSTEMIC

1. Fever
2. Weight loss
3. Fatigue
4. Susceptibility to infection.

MUSCULOSKELETAL

1. Muscle wasting
2. Bursitis
3. Tendosynovitis
4. Osteoporosis
5. Myopathy (steroid, chloroquine)

HAEMATOLOGICAL

1. Anaemia
2. Eosinophilia
3. Thrombocytosis

4. Vasculitis – Nail fold splinter hemorrhage, punched out ulcer on lower extremities, palpable purpura. The ulcer heal spontaneously, if superadded infection is controlled.
5. Hyper viscosity syndrome: It is due to increased rheumatoid factor. The manifestations are dizziness, diplopia, dyspnoea and bleeding tendency.
6. Splenomegaly
7. Felty's syndrome

LYMPHNODES

1. Local and generalized lymphadenopathy

RESPIRATORY SYSTEM

1. Pneumothorax
2. Rheumatoid nodules
3. Pleural effusion
4. Broncholitis
5. Caplan's syndrome
6. Pulmonary hypertension
7. Pleuritis: It is usually asymptomatic in around one third of patients.
8. Interstitial fibrosis

CARDIOVASCULAR SYSTEM

1. Pericarditis: It is a minimal and infrequent in adults though more common in childrens.
2. Myocarditis
3. Endocarditis
4. Cardiomyopathy
5. Conduction defect
6. Cardiac arrhythmias
7. Myocardial infraction
8. Infiltration of valves

GASTROINSTETINAL SYSTEM

1. Parotid enlargement
2. Dysphasia
3. Mesenteric artery occlusion

4. Xerostomia

RENAL SYSTEM

1. Pyelonephritis
2. Amyloidosis
3. Analgesic nephropathy

OCULAR

1. Episcleritis
2. Scleritis - It is very painful and causes blurred vision that may last for many weeks. In severe cases inflamed sclera any perforate.
3. Scleromalacia perforans
4. Kerato conjunctivitis sicca

CENTRAL NERVOUS SYSTEM

1. Cervical cord compression
2. Compression neuropathies
3. Peripheral neuropathy(sensory and motor)

SKIN

1. Dermal atrophy
2. Leg ulcers
3. Nail dystrophy
4. Rheumatoid Nodules: The histological appearance is central necrotic area surrounded by palisades of fibroblasts, histocyte, and macrophages.
5. Pyoderma gangrenosum.
6. Palmar erythema: It is commonly observed in patients during flare up of the polysynovitis.

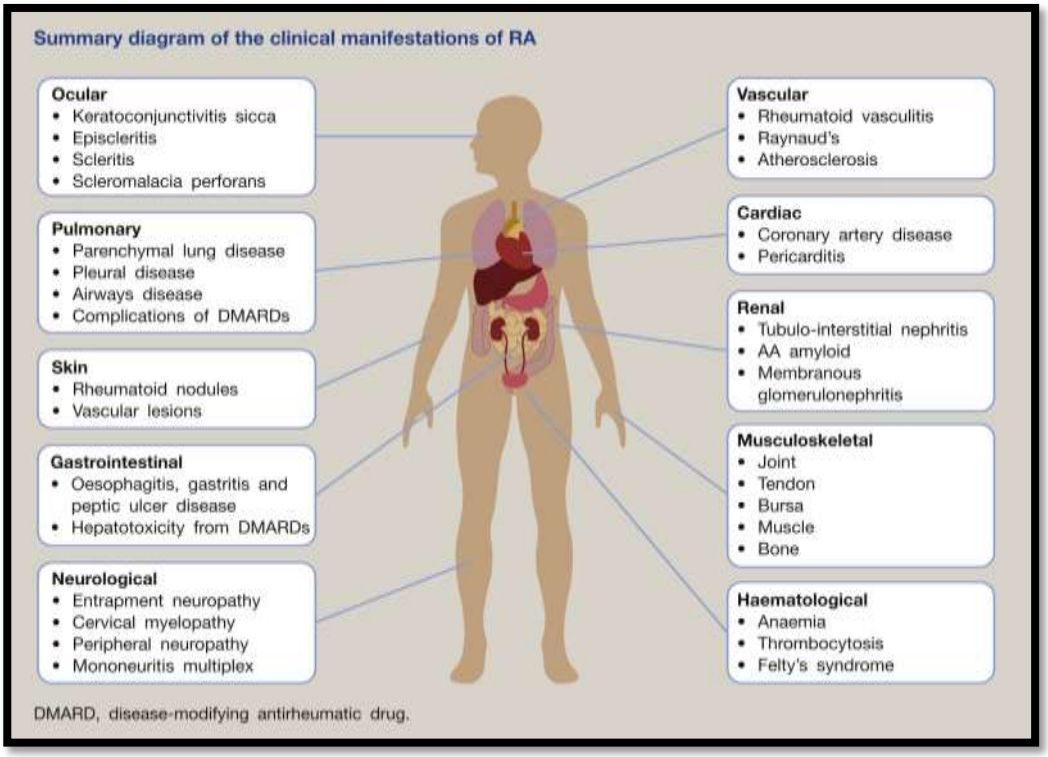


Figure: 3.2. 7 Clinical manifestation of RA

DIAGNOSIS OF RHEUMATOID ARTHRITIS

Following three types of examination in helpful for diagnosis of Rheumatoid arthritis.

1. Personal and family history
2. Physical examination
3. Laboratory investigation

Personal and family history

It is very important factor in helping to treat to reach a RA diagnosis.

PHYSICAL EXAMINATION

Appearance of patient: Fatigue

Gait: Observe the patient gait for rhythm and symmetry.

Inspection

- Inspect the upper and lower limbs for deformities, swelling presence in all minor and major joints and other signs of rheumatic disease.
- Note the muscle wasting or leg length inequality.
- In spine notes the Kyphosis, scoliosis.

Palpitation

- Palpate the upper and lower limbs for tenderness, swelling, and warmth.
- In lower limbs palpate the knee joints for effusion and popliteal cyst is present.
- In spine palpate tenderness present in whole spine.

Movements

- The patient examination by any movement restriction, power, tone and grip of the joints.

Diagnosis of rheumatoid arthritis requires at least four of the following criteria to be met.

- Morning stiffness lasting for more than 1 hour most morning for 6 weeks or more.
- Arthritis of more than three joints, present for 6 week or more.
- Arthritis of hands joints, present for 6 weeks or more.
- Subcutaneous rheumatoid nodules.
- Symmetrical arthritis, present for 6weeks or more.
- Serum level of rheumatoid factor above the 95%.
- Radiological changes consistent with joint erosion.

LABORATORY INVESTIGATION

1. BLOOD

Complete blood count

Hemoglobin : Mild normocytic and normochromic anaemia.

ESR **:** Increased

WBC **:** Mild leucocytosis

Platelet **:** Increased

Alkaline phosphate: Increased

Serum protein

Albumin **:** Decreased

Gammaglobulin : Increased

IgG, IgM, IgA **:** Increased

2. SEROLOGICAL TESTS

A. Rheumatoid factor

Rheumatoid factors can be detected which are immunoglobulins of the class IgM, IgG, IgA and IgE. Practically IgM class RF with specificity to human IgG is the most useful prognostic marker of RF. The clinical significance of RF consists in differentiation between rheumatoid arthritis and rheumatic fever. It is more meaningful of prognosis, diagnosis, and assessment of therapeutic efficacy of Rheumatoid arthritis.

B. CRP

CRP is synthesis by the liver under regulatory control of cytokines. CRP is an abnormal serum glycoprotein produced by the liver during acute inflammation or infection. The determination of CRP is great valve in diagnosis, treatment and monitoring of inflammatory condition. In many

cases the changes in plasma CRP levels precedes changes in clinical symptoms.

C. ANTI CCP

These anti CCP antibodies bind to some self proteins that are found predominately in the synovial tissue. The citrullinated proteins include filaggrin and its circular form (cyclic citrullinated peptide: CCP). This presence of these antibodies often correlates with some joints destruction. Although this test is relatively recent, a high level of anti- CCP is considered assign and symptoms of Rheumatoid arthritis.

D. Anti ANA

Antinuclear antibody is also frequently raised in patients with rheumatoid arthritis.

3. RADIOLOGICAL FEATURES

- In early stage periarticular soft tissues swelling.
- Later on periarticular osteoporosis.
- Joint erosion occur within 2 years though cartilage damage manifest at a much earlier stage.
- Pencilling of cortex.

X-ray finding in RA can be conveniently remembered as

A - Align mental abnormal

B - Bone particular soft tissue swelling later on osteoporosis.

C – Cartilage destruction uniform – symmetric loss of joint space

D – Deformities are usually symmetrical and are mainly in hands and feet

E – Erosions are mainly marginal

F- Fusions joints (Mainly wrist, elbow, and ankle) undergo fibrous ankylosis.

S- Swelling around joints, subluxation of joints due to ligamentoues laxity and destruction.

Pathogenic stages of Rheumatoid arthritis

Stage I - No radiological bone / cartilage erosion.

Stage II - Osetopenia with /without subchondral bone or cartilage destruction

Stage III - Obvious destruction of bone and cartilage

Stage IV - End stage disease with fibrosis or ankylosis.

4. SYNOVIAL FLUID ANALYSIS

- ❖ Synovial fluid in RA is typically yellow, watery and turbid due to high WBC and low sugar content.
- ❖ Joints fluid contains 2000 to 50000 cells/mm with 40%-80% polymorps.
- ❖ Total hemolytic complement is not depressed.

5. MRI

- ❖ This gives valuable information about the various soft tissue damages in rheumatoid arthritis with far more greater accuracy.

6. BIOPSY

- ❖ Synovial biopsy villas formation with thickening of synovial layer and infiltration with abnormal cells.

DIFFERENTIAL DIAGNOSIS OF RHEUMATOID ARTHRITIS

Early disease

Common

- ❖ Viral arthropathy
- ❖ Polymyalgia
- ❖ Infection
- ❖ Prodrome of hepatitis
- ❖ Hypoparathyrodism

Rare

- ❖ Sarcoidosis
- ❖ Acute leukemia
- ❖ Coeliac disease
- ❖ Eosinophilic fasciitis

Established disease

Common

- ❖ Psoriatic arthritis
- ❖ Erosive osteoarthritis
- ❖ Chronic pyrophosphate disease
- ❖ Chronic tophaceous gout
- ❖ SLE
- ❖ Reiter's syndrome
- ❖ Ankylosing spondylosis

Rare

- ❖ Amyloid arthropathy
- ❖ Multicentric reticulo histocytosis

TREATMENT FOR RHEUMATOID ARTHRITIS

Three major goals in the treatment of rheumatoid arthritis

1. Reduction of inflammatory and pain
2. Maintains of joint function
3. Prevention of future destruction and deformity

Therapeutic goals for drug therapy

1. Short term suppression of inflammatory changes to reduce pain and improve mobility.

   Ex : NSAID and Aspirin etc..

2. Long term suppression of inflammation changes to preserve the joint structure and lessen the morbidity.

Ex: Disease modifying anti rheumatic drug, Corticosteroids etc…

Surgical procedures in rheumatology

1. Relieve pain
2. Correct the deformity of the joints
3. Reduce joint instability
4. Improve the range of movements of the joints
5. Synovectomy
6. Joint replacement
7. Arthrodesis
8. Rehabilitation

General measures in rheumatoid arthritis

1. Rest in bed
2. Good diet, rich in proteins and minerals
3. Transfusion and hematinics to correct the anemia.
4. Hormones combination of estrogen and androgen to improve the bone stock.
5. Removal of infective foci.
6. Reduction of weight
7. Psychological management

SELF MANAGEMENT TECHNIQUES FOR RHEUMATOID ARTHRITIS

1. **Positive mental attitude**

   The patient is told to focus on things other pain and their own body.

2. **Regular medication**

   The patient is told the valve of regular and correct medication.

3. **Regular exercise**

   The patients should follow a regular and appropriate exercise.

4. **Use of joints**

   The patient is told to value of correct posture and the method using the joints wisely to reduce stress on the painful joints.

5. **Energy conservation**

   Patients are instructed to listen the body inner signals for rest. Slowing down and avoiding too many activities reduces the stress on the joints.

6. **Assistive devices**

   Devices like splints, braces and walking sticks can help stabilize the joints, proved strength and reduce pain and inflammation.

7. **Adequate sleep**

   A good adequate sleep provides rest to the joints and reduce the pain and swelling.

8. **Massage**

   A good moderate massage brings warmth and relieves pain due to arthritis.

9. **Relaxation techniques**

   Relaxation techniques like Yoga, medication etc .. help the relax the muscles, mind ,its control the respiration, heart rate, blood pressure. This help in the control of pain.

10. **Modification in the daily activities**

- ❖ Using western toilets
- ❖ Long handle broomstick and mop to clean the floor
- ❖ High chairs
- ❖ Avoid squatting on the ground for food ect..
- ❖ To avoid squeezing clothes after washing and just rinse then dry.
- ❖ To avoid walking on hard and uneven and rough surface.
- ❖ To sleep on a hard surface.

DIET MANAGEMENT IN RHEUMATOID ARTHRITIS

- ❖ Increased intake of fruits, vegetables (particularly vitamin C), whole grains, and brown rice. To adding the rich fiber conduct diet several study result showed decrease the CRP level in blood.
- ❖ **Olive oil** is natural anti inflammatory properties.

- **Gluten free diet** significantly reduced levels of antibodies to β-lactoglobulin and gliding.
- **Fish** is rich source of n-3 polyunsaturated fatty acids. It has been reported protective mechanism in development of RA patients.
- **Vitamin D &calcium supplements** to prevent the osteoporosis and symptoms of anxiety, depression.
- **Iron supplements** improve the anemia and quality of life in RA patients**.**
- **Curcumin** has anti inflammatory property. It has been reduce the disease severity.
- The food cooked with **pepper, turmeric, cumin seeds, asafoetida, dried ginger, cardamom, fenugreek and garlic.** It has Immunomodulatory activity it reduce the severity of RA patients.

Types of food RA patients should be avoid

- Red meat
- Dairy products
- Sugar foods
- Fired and grilled food
- Smoking & Alcohol
- Soft drinks
- Coffee/tea
- Salt
- Highly processed food

4. MATERIAL AND METHOD

- ✓ A protocol was prepared and submitted before Institutional Ethical committee (IEC) of National Institute of Siddha. The date of IEC approval & **IEC number is 21.12.2020; NIS/IEC/ 2020/D-5.**
- ✓ The trial was registered in clinical trial registry of India with Reg.no: **CTRI/2021/09/036341[Registered on: 08/09/2021].**
- ✓ After obtaining approval from the IEC, the clinical study on "clinical evaluation of Panchathikta kirutham (internal medicine) and Karunkozhi thylam (external medicine) in the management of uthiravatha suronitham (Rheumatoid arthritis)" was carried out as per the protocol.
- ✓ In this study the trial drug Panchathikta Kiriutham and Karunkozhi thylam was given for 45 days.

STUDY DESIGN AND CONDUCT OF STUDY

Study type : Open clinical study

Study period : 12 months

Sample size : 30 Patients

Study place :

OPD of Ayothidoss Pandithar Hospital,
National Institute of Siddha
Tambaram sanatorium,
Chennai – 47.

TREATMENT

INTERNAL MEDICINE

Drug : Panchathikta kirutham

Dosage : Kaal palam (8.5gm)

Duration : 45 days

Reference : Chikicharathana deepam ennum vaithiya nool

Author : C.Kannusami pillai

Page no : 217

Publication : B.Rathina Nayakkar and Sons,
No.26 Venkatrama street,
Kondithoppu, Chennai

EXTERNAL MEDICINE

Drug : Karunkozhi thylam

Dosage : Required quantity for external application

Duration : 45 days

Reference : Chikicharathana deepam ennum vaithiya nool

Author : C.Kannusami pillai

Page no : 205

Publication : B.Rathina Nayakkar and Sons,
No.26 Venkatrama street , Kondithoppu, Chennai

SUBJECT SELECTION

The patients reporting at OPD of Ayothidoss Pandithar Hospital with symptoms of Inclusion criteria were subjected to screening and documented by using screening proforma.

SELECTION CRITERIA

INCLUSION CRITERIA

- ✓ Age : 20-50 years
- ✓ Sex: Male ,female and transgender
- ✓ Insidious onset of Polyarthritis in the joints.
- ✓ Prolonged morning stiffness (for 6 weeks or more)
- ✓ Swelling of multiple joints involved for 6 weeks or more.
- ✓ Slow progressive signs of inflammation of joints. E.g. Pain, tenderness, warmth >6 weeks
- ✓ Symmetrical joint involvement
- ✓ Swelling especially in interphalangeal joints.
- ✓ Rheumatoid factor positive or negative.
- ✓ Patients who were willing to attend OPD or willing for admission IPD.
- ✓ Patients who were willing to undergo Radiological investigation and other laboratory investigation.

- ✓ Patient who were willing to sign the informed consent stating that he/ she was consciously stick to the treatment during 48 days but can stop opt out of the trail of his /her own conscious discretion.

EXCLUSION CRITERIA

- ✓ Pregnancy and lactating mother
- ✓ Diabetes mellitus
- ✓ History of trauma
- ✓ Any other arthritis
- ✓ Any other serious systemic illness like Cancer, Cardiac disease.
- ✓ Systemic complication of Rheumatoid arthritis.
- ✓ Characteristic deformities of hands and feet in Rheumatoid arthritis.
- ✓ (Z –deformity, Boutonniere deformity, Swan neck deformity in hands, Hammer toe)

WITHDRAWAL CRITERIA

- ✓ Intolerance to the drug and development of any serious adverse effects during the trial.
- ✓ Increase in severity of symptoms.
- ✓ The patients who were not taken the medication regularly.
- ✓ Patient turning unwilling to continue in the course of clinical trial.

ASSESSMENT AND INVESTIGATION

A) Clinical assessment

B) Siddha assessment

C) Routine investigation

a) Modern parameters

b) Siddha parameters

A) CLINICAL ASSESSMENT

- ✓ Arthritis involving three or major joints
- ✓ Symmetrical joint involvement
- ✓ Morning stiffness
- ✓ Anorexia
- ✓ Spindle shape appearance of fingers
- ✓ Depression

- ✓ Swelling of small joints of hands and foot
- ✓ Rheumatoid nodules

B) SIDDHA ASSESSMENT

THINAI (LIVING PLACE)

1) Kurinji (Hill areas)
2) Mullai (Forest)
3) Marutham(Fertile land)
4) Neithal(Costal area)
5) Paalai(Desert)

PARUVA KAALAM (SEASON)

1) Karkaalam (Avani &Purataasi)
2) Koothir kaalam(Iyappasi &Karthigai)
3) Munpanikaalam(Margazhi &Thai)
4) Pinpani kaalam(Masi&Panguni)
5) Elavenil kaalam(Chithirai &Vaigasi)
6) Muthuvenil kaalam(Aani&Aadi)

IYMPORIKAL

1) Mei (Skin)
2) Vaai (Tongue)
3) Kan(Eye)
4) Mooku(Nose)
5) Sevi(Ear)

IYMPULANKAL

1) Ooru(Thoduthalai arivadhu)
2) Suvai(Arusuvai arivadhu)
3) Oli(Kaanapaduvathu)
4) Naatram(Vasani arivathu)
5) Osai(Ketkapaduvathu)

KANMENTHIRIYANGAL

1) Vaai(Buccal cavity)
2) Kaal(Lower limb)

3) Kai(Upper limb)
4) Eruvaai(Anorectal region)
5) Karuvaai(Uro genital region)

KANMAVIDAYAM

1) Vasanam(Vaarthayadal)
2) Kamanam(Nadappadhu)
3) Dhaanam(Koduthal,Vangal)
4) Visarkam(Malam viduthal)
5) Aanantham(Magilthal)

KOSANGAL

1) Paru udambu(Annamayakosam)
2) Valiu dambu(Pranamaya kosam)
3) Mana udambu(Manomaya kosam)
4) Arivu udambu (Vingnaamaya koam)
5) Inba udambu (Aanantha mayakosam)

PATHU NAADIGAL

1) Edakalai
2) Pingalai
3) Suzhumunai
4) Sinkuvai
5) Purudan
6) Kanthari
7) Aththi
8) Alampudai
9) Sanguni
10) Kugu

EZHU UDAL KATTUGAL

1) Saram
2) Senneer
3) Oon
4) Kozhuppu
5) Enbu

6) Moolai
7) Sukkilam/ Suronitham

MUKKUTRA IYAL

VATHAM

1) Praanan
2) Abaanan
3) Samaanan
4) Udhanaan
5) Viyaanan
6) Naagan
7) Koorman
8) Kirukaran
9) Devathathan
10) Dhananjeyan

PITHAM

1) Anarpitham
2) Prasakam
3) Saathakam
4) Aalosakam
5) Ranjakam

KABAM

1) Avalambagam
2) Kilethegam
3) Pothagam
4) Tharpagam
5) Santhigam

ENNVAGAI THERVUGAL

1) Naadi(Pulse perception)
2) Naa(Tongue)
3) Niram(Complexion)
4) Mozhi(Voice)
5) Vizhi(Eyes)

6) Sparisam (Palpatory perception)
7) Malam(Bowel habits)
8) Moothiram(Urine)(Neerkuri&Neikuri)

C) ROUTINE INVESTIGATION

HEMATOLOGY

- ✓ Hb
- ✓ Total WBC count
- ✓ Differential count
  - ➢ Polymorphs
  - ➢ Lymphocytes
  - ➢ Eosinophils
  - ➢ Monocyte
  - ➢ Basophils
- ✓ ESR : ½ HR 1HR:

BLOOD SUGAR

- ✓ Fasting : PP:

LIPID PROFILE

- ✓ Serum Total cholesterol
- ✓ Serum triglycerides
- ✓ HDL
- ✓ LDL
- ✓ VLDL

RENAL FUNCTION TEST

- ✓ Blood Urea
- ✓ Serum creatinine

LIVER FUNCTION TEST

- ✓ Serum Total bilirubin
- ✓ Serum Direct bilirubin
- ✓ Serum Indirect bilirubin
- ✓ SGOT
- ✓ SGPT

- ✓ Serum Alkaline phospatase
- ✓ Serum total protein
- ✓ Serum Albumin

OTHER TEST

- ✓ Uric acid
- ✓ Serum Calcium

URINE

- ✓ Albumin
- ✓ Sugar (F) (PP)
- ✓ Deposits

SPECIFIC INVESTIGATION

- ✓ CRP
- ✓ RA factor
- ✓ ASO Titer
- ✓ Anti CCP

STUDY ENROLLMENT

- ✓ In this clinical trial, patients reporting at OPD of Ayothidoss Pandithar Hospital, NIS with the clinical symptoms of UTHIRAVATHA SURONITHAM were enrolled in the study based on the inclusion and exclusion criteria.
- ✓ The patients enrolled in this study were informed about the objective of the study, trial drug, possible outcomes in their own language and terms understandable to them.
- ✓ After ascertaining the patient's willingness, informed consent were obtained in the consent form.
- ✓ All these patients were given unique registration card which contains information regarding patient's Registration number, Address, Phone number, and Doctors phone number, etc. It can help to report easily if any adverse reactions arise.
- ✓ Complete clinical history, complaints, and duration, examination findings-- all were recorded in the prescribed case record form. Screening Form- I filled up; Form II was used for recording the

patients' history, clinical examination of signs and symptoms and Form III was used for laboratory investigations. Patients were advised to take the trial drug with appropriate dietary advice.

CONDUCT OF THE STUDY

- ✓ On day 1 the patient were advised to take purgative medication Agasthiyar kuzhambu-1 kundri (130 mg) with Inji surasam (Ginger juice) in early morning.
- ✓ On 2nd day the patients were advised to take oil bath with Arakku thylam (required quantity).
- ✓ On 3 rd day patients were asked to take Rest.
- ✓ On 4th day onwards the trial drug **PANCHATHIKTA KIRUTHAM** - kaal palam (8.5 g) were administrated orally after food twice a day and **KARUNKOZHI THYLAM** was applied over the affected joints.
- ✓ The trial drug was given for 45 days. OPD patients were asked to visit the hospital once in 7 days. At each clinical visit clinical assessment was done and prognoses were recorded. For IPD patients the clinical assessments was recorded daily.
- ✓ The results were compared at the end of the study. Laboratory investigations were done on the 0th day and 49th day of the trial.

DATA MANAGEMENT

- ✓ After enrolling the patient in the study, a separate file for each patient was opened and all forms were filed in the file. Study No. and OPD/ IPD No. were entered on the top of the file for easy identification. Whenever the study patient visits OPD during the study period, the respective patient file was taken and necessary recordings was made at the CRF or other suitable forms.
- ✓ The screening forms were filed separate.
- ✓ The Data recordings were monitored for completion by Guide, HOD, Department of Maruthuvam, SRO and the adverse event were monitored by the members of Pharmacovigilance of NIS. All forms were further scrutinized in presence of an investigator by Senior Research Officer for logical errors and incompleteness of data to avoid

any bias. No modification in the results is permitted for unbiased reports.

OUTCOME OF THE STUDY

A) PRIMARY OUTCOME

- ✓ Assessment of pain was done by Universal pain assessment scale and EULAR criteria. Other clinical signs and symptoms was assessed by Gradation method.

B) SECONDARY OUTCOME

- ✓ Laboratory investigations such as RA factor, ESR, CRP, ASO titer,
- ✓ Anti CCP were assessed before and after treatment.
- ✓ Secondary outcome was assessed by comparing the following Parameters pre and post treatment Envagaithervu, Neikuri and neerkuri , Udal thadhukkal, Uyirthadhukkal, Kaalam etc, in Uthiravatha suronitham patients.

ADVERSE EFFECT/SERIOUS EFFECT MANAGEMENT

- ✓ If the trial patient develops any adverse reaction, he/she will be referred to the pharmacovigilance of NIS. The members of this department will assess the adverse event and recorded in the prescribed adverse reaction form. For any AE the patients will be treated with proper management at NIS, OPD.

STATISTICAL ANALYSIS

- ✓ All the data were entered into the computer using MS Access software with macro for logical errors and manually cross-checked for data entry error. Then the data were exported to STATA/SPSS Software for univariate multivariate analysis. Student ‘t' test and Paired ‘t' test and Mantel-Haenszel chi-square test were performed for determining the significance of a particular effect variable.

ETHICAL ISSUES

- ✓ To prevent any infection, while collecting a blood sample from the patient, only disposable syringes, disposable gloves, with proper sterilization of lab equipment were used.

- ✓ No other external or internal medicines were used. There were no infringements on the rights of the patient for this particular indication.
- ✓ The data collected from the patient were kept confidentially. The patients were informed about the diagnosis, treatment, and follow-up.
- ✓ After the consent of the patient (through consent form), they were enrolled in the study.
- ✓ Informed consent was obtained from the patient explaining in the understandable language to the patient.
- ✓ Treatment was provided free of cost.
- ✓ In the conditions of treatment failure, adverse reactions, patients were given alternative treatment at the OPD of Ayothidoss Pandithar hospital, National Institute of Siddha with full care throughout the end.
- ✓ The patients who were excluded [as per the exclusion criteria] were given proper treatment at Ayothidoss Pandithar hospital of National Institute of Siddha.
- ✓ The Anti CCP test was done in NABL certified laboratories and the charges were borne by the investigator.

ASSESSMENT FORMS

Form – I	Screening and Selection Proforma
Form - II	Clinical assessment form
Form - III	Laboratory investigation form
Form – IV	Drug Compliance form
Form – V	Patient Information sheet
Form – VI	Informed Consent form
Form –VII	Withdrawal form
Form- VIII	Pharmacovigilance form
Form- IX	Dietary Advice sheet

5. TRIAL DRUG PREPARATION

DRUG : PANCHATHIKTA KIRUTHAM

REQUIRED RAW DRUGS OF PANCHATHIKTA KIRUTHAM

1. **Vembu pattai** *(Azadirachta indica.A.Juss*)
2. **Seenthil kodi** *(Tinospora cordifolia Miers ex Hook.f. &Thoms*)
3. **Adathodai(***Justica adathoda.L)*
4. **Peipudal(***Trichosanthes curcumerina.Lin)*
5. **Kandangaththir**i(*Solanum surattense, Burm.f.)*
6. **Chittaratai(***Alpinia officinarum.Hance)*
7. **Vaivilangam(***Embelia ribes.Burm.f)*
8. **Devadaru(***Cedrus deodara G.Don)*
9. **Anaittippili(***Scindapsus officinalis,schott)*
10. **Evaacharam(***Potassium carbonate)*
11. **Chukku(***Zingiber officinale,Rosc)*
12. **Maramanjal(***Coscinium fenestratum.Colebr)*
13. **Adhimaduram(***Glycyrrhiza glabra,Linn)*
14. **Cheviyam**(*Piper nigrum)*
15. **Kottam**(*Costus speciosus J.E.Smith)*
16. **Milagu(***Piper nigrum.Linn)*
17. **Vetpalaiyaris**i(*Wrightia tinctoria.R.Br)*
18. **Omam(***Carum copticum.f)*
19. **Kodiveliverpattai(***Plumbago indica.Linn)*
20. **Kadugurohini(***Picrorhiza scrophulariiflora Pennell)*
21. **Thamarai kilangu(***Nelumbo nucifera.Gaertn)*
22. **Vasambu(***Acorus calamus.Linn)*
23. **Thippili ver**(*Piper longum.Linn)*
24. **Manjitti(***Rubia cordifolia.Linn)*
25. **Atividayam(***Aconitum heterophyllum Wall ex Royle)*
26. **Shivadai(***Operculina turperthum.Linn)*
27. **Kurosani omam**(*Hyoscymus niger. Linn)*
28. **Kungiliyam(***Shorea robusta,Gaertn.f)*
29. **Cow ghee**

SOURCE OF RAW DRUGS

The required raw drugs were purchased from a well reputed country shop and fresh leaves were collected from kancheepuram District. These raw drugs were authenticated by the Assistant professor of Medicinal Botany, NIS. The raw drugs were purified and then the study drug was prepared as per SOP in Gunapadam laboratory, National Institute of Siddha.

PURIFICATION OF RAW DRUGS

The following raw drugs were purified as per the Siddha text.

Ref: Chikicharathna deepam , Kannusamy pillai,Edition 2007,Pg no:28-34.

Vembu pattai

Cleaned by white cloth and pealed the outer skin.

Seenthil kodi

Pealed the outer skin.

Adathodai

Without washing in water, cleaned it with white cloth then removed the rotten and ripened leaves.

Peipudal

Without washing in water, cleaned it with white cloth then removed the rotten and ripened leaves.

Kandangaththiri

Without washing in water, cleaned it with white cloth then removed the rotten and ripened leaves.

Chittaratai

Pealed the outer skin, made into small pieces and dried it under the sunlight.

Vaivilangam

Dried it under the sunlight and fried it.

Devadaru

Cleaned by white cloth and pealed the outer skin.

Anaittippili

Soaked in vinegar for three hours and then dried it out.

Evaacharam

Dissolved it with goat's urine and then dried it out in sunlight.

Chukku

Soaked in lime stone water for three hours then outer layer was removed.

Maramanjal

Soaked in vinegar for three hours and then dried it out.

Adhimaduram

Washed with clean water, Skin was pealed and made into small pieces.

Cheviyam

Soaked in vinegar for three hours and then dried it out.

Kottam

Cleaned and dried it under the sunlight.

Milagu

Soaked in buttermilk for one hour fifteen minutes and then roasted it.

Vetpalaiyarisi

Dried it under the sunlight.

Omam

Dipped in lime stone water after then dried it.

Kodiveliverpattai

Inner nerve root of the bark was removed and the bark was made into powder form. The powder was subjected to steaming process in Cow's milk for three hours.

Kadugurohini

Soaked in neem leaf juice in 3 hours and dried it under sunlight.

Thamarai kilangu

Pealed the outer skin, nerve roots and then cleaned it.

Vasambu

Take the shot charcoal.

Thippili ver

Cleaned and dried it.

Manjitti

Dried it under the sunlight.

Atividayam

Soaked in vinegar for three hours and then dried it out.

Shivadai

Removed the veins of the root, boil it out in milk and then dried it out in sunlight

Kurosani omam

Cleaned and dried it.

Kungiliyam

Soaked in liquor for one day.

Method of Preparation

First 5 drugs were crushed and kept in mudpot. Water was added eight times in the weight of the drugs and boiled until it becomes to the ratio 1/8 then1/2 padi ghee was added to the above. Then the other drugs were grinded finely with milk and mixed with above mixture and boiled until it becomes ghee consistency.

DRUG: KARUNKOZHI THYLAM

Ingredients

1. Karunkozhi(Adequate quantity)
2. Kadugu (Adequate quantity)
3. Neem oil- 1/4Padi (325 ml)
4. Coconut milk -1/4 padi (325ml)

Method of Preparation

The adult Karunkozhi which is going to lay its first egg was taken and its skin, head, lower extremities and intestinal parts were removed. Mustard seeds were kept inside stomach and crushed in Ural. Then ¼ padi neem oil and coconut milk was added to above mixture and boiled until the flesh become red and oil get separated from it. Then the oil was filtered and collected.

INGREDIENTS OF PANCHATHIKTA KIRUTHAM


Omam


Chukku


Thamarakizhanku


Vetpalalarisi


Evaacharam


Kaduku rohini


Vaividangam


Kungiliyam


Adhividayam


Devadaru


Aanaithippili


Thippili ver


Kodiveli


Shivadhal


Kandankarthari


Peipudal


Kottam


Chevilyam


Neem bark


Adathodai


Cow's ghee

INGREDIENTS OF KARUNKOZHI THYLAM

KARUNKOZHI

PANCHATHITKA KIRUTHAM

KARUNKOZHI THYLAM

6. TRIAL DRUG REVIEW

DRUG NAME: PANCHATHIKTA KIRUTHAM

1. வேப்பம்பட்டை: ***Azadirachta indica.A.Juss***

Taxonomical classification

Domain : Eukaryota

Kingdom : Plantae

Phylum : Spermatophyta

Class : Magnoliopsida

Order : Sapindales

Family : Meliaceae

Genus : Azadirachta

Species : Azadirachta indica A.Juss

Vernacular classification

Tamil : Vembu

English : Neem tree

Sanskrit :Nimba

Telugu : Vepa

Kannadam : Bevina

Malayalam :Veppa

Parts used : Bark

Organoleptic characters

Taste : Bitter

Character : Hot

Division : Pungent

General characteristics of Vembu pattai

ஓதரிய வேம்பை யுறைக்கிற் சுரமுடனே

வாதமுறு மூலகண மாந்தம்போந் -தீதாய்

உதிருமெரி பூச்சிகுன்ம மோதா தொழியுஞ்

சிதறுமலம் போகுமெனைத் தேர்.

அகத்தியர் குணவாகடம்

Action : Anti periodic, Tonic, Astringent

Pharmacological activity

- Anti-inflammatory
- Antipyretic
- Antiseptic
- Anti analgesic
- Anti arthritic activity
- Immunomodulatory

Phytochemical constituents

- Tannins, saponins, phlobatanins
- Flavanoids, cardiac glycosides
- Anthraquinones, phytosterols
- Polyphenols, saponin c

2. சீந்தில் கொடி: ***Tinospora cordifolia Mier ex Hook.F&Thomas***

Taxonomical classification

Kingdom : Plantae

Phylum : Magnoliphyta

Class : Magnoliopsida

Order : Ranunculales

Family :Menispermaceae

Genus : Tinospora

Species : Cordifolia

Vernacular classification

Tamil : Seenthil

English : Tinospora

Sanskrit :Guduchi

Telugu : Tippatiga

Kannadam : Amrutavalli

Malayalam : Amurta

Parts used : Stem

Organoleptic characters

Taste : Bitter

Character : Hot

Division : Pungent

General characters of Seenthil kodi

சீந்திற் கிழங்கருந்தத் தீபனமா மேகவகை

போந்த வுதிரபித்தம் பொங்குசுர –மாந்த

மதிசாரம் வெய்யகண மாம்பலநோ யோடே

கதிவிஷமுங் கெட்டுவிடுங் காண்.

பதார்த்த குண விளக்கம்

Action

- Alterative,Anti periodic, Demulcent, Stimulant
- Stomachic,Tonic, Mild diuretic.

Pharmacological activity

- Anti inflammatory
- Anti arthirtic
- Anti diabetic
- Anti oxidant
- Anti allergic
- Anti spasmodic
- Immunomodulatory

Phytochemical constituents

- Alkaloids,amino-acid, phenolic compounds, Flavonoids, saponines steroids, Cardiac glycosides, polysaccharides .

3. **ஆடாதோடை: *Justica adathoda.L***

Taxonomical classification

Kingdom : Plantae

Phylum : Magnoliophyta

Class : Magnoliopsida

Order : Scrophulariles

Family : Acanthaceae

Genus : Justica

Species : Adhatoda

Vernacular classification

Tamil : Adatodai

English : Malabar nut

Sanskrit :Vaidyamatruvrikshaha

Telugu : Addasaram

Kannadam : Adusogae

Malayalam :Ata lotakam

Parts used : Whole plant

Organoleptic characters

Taste : Bitter

Character : Hot

Division : Pungent

General characters of Aadathodai

ஆடாதோ டைப்பன்ன மையறுக்கும் வாதமுதற்

கோடாகோ டிச்சுரத்தின் கோதொழிக்கும் -நாடின

மிகுந்தெழுந்த சந்நிபதின் மூன்றும் விலக்கும்

அகத்துநோய் போக்கு மறி.

அகத்தியர் குணவாகடம்

Action: Antispasmodic, Expectorant, Diuretic

Pharmacological activity

- Anti inflammatory
- Anti oxidant
- Antibacterial
- Anti microbial

Phytochemical constituents

- Alkaloids, flavonoids , tannins, phenol, anthraquinones
- Saponins, phytosterols, triterpenoids , vasicine , vasicinone
- Vasicine acetate, vasicinolone, benzoic acids, polyphenols
- Tocopherols, beta-carotene, ascorbic acid
- Tocotrienols, folic acid, cinnamic acids

4. பேய்புடல்: ***Trichosanthes cucumerina. Linn***

Taxonomical classification

Kingdom : Plantae

Division : Magnoliophyta

Class : Mangnoliopsida

Order : Curcubitales

Family : Curcubitaceae

Genus : Trichosanthes

Species : Cucumerina

Vernacular classification

Tamil : Peipudal

English : Snake gourd

Sanskrit : Patola

Telugu : Adavi potla

Kannadam :Bettada padavala

Malayalam : Kaippam patolam

Parts used : Whole plant

Organoleptic characters

Taste : Bitter

Character : Hot

Division : Pungent

General characters of Peipudal

பித்தசுரஞ் சீதசுரம் பீரிக்குங் காமாலை

யுற்றம சூரி யுழற்றாக – நித்தியமுங்

காய்ப்புடலை யுண்ணக் கவிழ்கின்ற பித்தமும்போம்

பேய்ப்புடலை யுண்பாரைப் பேணு.

அகத்தியர் குணவாகடம்

Action: Anthelmintic, Anti periodic, Purgative, Tonic

Pharmacological activity

- Anti diabetic
- Anti bacterial
- Anti-inflammatory
- Anti febrile
- Antioxidant activity

Phytochemical constituents

- Cucurbitacin B, cucurbitacin E, isocucurbitacin B,
- 23,24- dihydroisocucurbitacin B, 23,24-dihydrocucurbitacin E,
- Sterols 2 β-sitosterol stigmasterol, oxalate, phytates and tannins

5. கண்டங்கத்திரி: ***Solanum surattense,Burm.f.***

Taxonomical classification

Kingdom : Plantae

Phylum : Angiospermae

Class : Dicotyledoneae

Order : Cucurbitales

Family : Solanaceae

Genus : Solanum

Species :Surattense

Vernacular classification

Tamil : Kandankattari

English : Wild eggs plant

Sanskrit :Kanta-karika

Telugu : Nela mulaka vakudu

Kannadam :Nela gulla

Malayalam : Vellottuvalutina

Parts used : Whole plant

Organoleptic characters

Taste : Pungent

Character : Hot

Division : Pungent

General characters of Kandankattari

காச சுவாசங் கதித்தஜய மந்தமனல்

வீசுசுரஞ் சன்னி விளைதோடம் -ஆசுறுங்கால்

இத்தரையு ணிற்கா எரிகாரஞ் சேர்க்கண்டங்

கத்திரியுண் டாமாகிற் காண்.

அகத்தியர் குணவாகடம்

Action: Expectorant, Diuretic, Carminative

Pharmacological activity

- Antibacterial
- Antioxidant
- Hypoglycemic
- Anti diabetic
- Analagesic
- Hepato protective
- Anti inflammatory

Phyto chemical constituents

- Alkaloids, sterols, saponins, flavonoids
- Tannins, cyclocartanol, cycloartinol, sitosterol,
- Stigma sterol, campesterol, sitosteryl
- Glucoside, solamargine, β-solamargine

6. சிற்றரத்தை: ***Alpinia galangal.Linn.Wild***

Taxonomical classification

Domain : Eukaryota

Kingdom : Plantae

Phylum : Spermatophyta

Subphylum : Angiospermae

Class : Monocotyledonae

Order : Zingiberales

Family : Zingiberaceae

Genus : Alpinia

Species :Alpinia galanga

Vernacular classification

Tamil : Araththai

English : Galangal the lesser

Sanskrit :Rasna

Telugu : Sanna -rashtramu

Kannadam : Rasmi

Malayalam :Aratha

Parts used : Root

Organoleptic characters

Taste : Pungent

Character : Hot

Division : Pungent

General characters of Araththai

வாதபித் தங்கரப்பான் வாதஞ் சிரோரோகஞ்

சேர்ந்தகப முத்தோடஞ் சீதமொடு –நேர்ந்தசுரம்

மற்றரத்தைக் காட்டி வருமிரும லுந்தீரும்

சிற்றரத்தை வன்மருந்தால் சேர்

தேரையர் குணவாகடம்

Action: Expectorant, Febrifuge, Stomachic

Pharmacological activity

- Antioxidant activity
- Anti bacterial activity
- Anti-inflammatory activity
- Anti cancer activity
- Anti proliferative activity

Phyto chemical constituents

- Tectochrysin,apigenin, galangin, kaempferol
- Kaempferide, quercetin, sorhamnetin, rutin

7. **வாய்விளங்கம்:** ***Embelia ribes.Burm.f***

Taxonomical classification

Kingdom : Plantae

Subkingdom :Tracheobionta

Division :Magnoliophyta

Class :Magnoliopsida

Order : Primulales

Family :Myrsinaceae

Genus : *Embelia*

Species : *ribes*

Vernacular classification

Tamil : *Vai vidangam*

English : Embelia

Hindi :Vayavidanga

Sanskrit :Vidanga

Telugu : Vayuvidangalu,

Malayalam :Vizhalari

Bengal :Biranga

Gujarathi :Vavidanga

Assam :Vidang

Parts used : Fruit

Organoleptic characters

Taste : Sweet

Character : Cool

Division : Sweet

General characters of Vai vidangam

வாதகுரு வாயுடம்பு வாதமறுத் தப்படியே

வேதையுலோ கங்களிலே வேண்டினாற் - பாத

விரதமுதற் கையாட லென்றா லிசையும்

வர்னனை நீமனத்தில் வை.

தேரன் வெண்பா

Action: Anthelmintic, Carminative, Stomachic, Stimulant

Pharmacological activity

- Anti bacterial activity
- Antioxidant activity
- Analgesic activity
- Anti anxiety activity
- Anti diabetic activity
- Anti inflammatory

Phyto chemical constitutens:

- Embelin, quercitrol, tannin, christembine, embelic acid, vilangin

8. **தேவதாரு**: ***Cedrus deodara(Roxb.ex.D.Don)G.Don***

Taxonomical classification

Kingdom : Planate

Division :Pinophyta

Class :Pinopsida

Order : Pinales

Family :Pinaceae

Genus : Cedrus

Species : C.deodara

Vernacular classification

Tamil : Devadaru

English : Himalayan cedar

Hindi : Deodar

Sanskrit :Devadaru

Telugu : Devadaru

Kannadam : Devadari

Malayalam :Thevatharam

Parts used : Bark

Organoleptic characters

Taste : Astringent

Character : Hot

Division : Pungent

General characters of Devadaru

தேவதா ரக்குணந்தான் சேர்ந்துவளர் பீனிசத்தைக்

காவகத்தி லோட்டுங் கரப்பலவே – மாவலவர்

சொல்லும்பு ராண சுரமொடுநீ ரேற்றத்தை

வெல்லு மனற்றணிக்கு மெய்.

அகத்தியர் குணவாகடம்

Action: Astringent, Febrifuge, Carminative

Pharmacological activity

- Anti inflammatory
- Anti analgesic
- Anti cancer activity
- Anti-hyperglycemic
- Antispasmodic
- Anti-apoptotic
- Immunomodulatory

Phyto chemical constituents

- Matairesinol, Dibenzyl butyrolactol, Berating, Isopimpillin, Lignans 1, 4 Diaryl Butane, Benzo furanoid .
- Neo Lingam, Isohemacholone, Sesquiterpenes LIII: Deodarone, Atlantone, Deodarin, Deodardione,
- Limonene carboxylic Acid, A-Himacholone, B-Himacholone, A-Pinene, B-Pinene, Myrcene.
- Cedrin (6-Methyl dihydro myricetin), Taxifolin, Cedeodarin (6-Methyl taxifolin), Dihydro myricetin And Cedrinoside

9. யானைத் திப்பிலி**:** ***Scindapsus officinalis,schott.***

Taxonomical classification

Kingdom : Planate

Division : Magnoliophyta

Class : Liliopsida

Order : Alismatales

Family :Araceae

Genus : Scindapsus

Species : S. officinalis

Vernacular classification

Tamil : Anaittippili

Hindi :Gan-piph

Sanskrit : Gaja pipali

Telugu : Enugapippalu

Kannadam : Dodda hippali

Malayalam : Ana thippili

Parts used : Fruit

Organoleptic characters

Taste : Pungent

Character : Hot

Division : Pungent

General characters of Anaittippili

மாதமறுந் தீபனமா மாறாக் கபங்கரப்பான்

ஓதுகுரற் கம்மலியை யோடுங்காண் -பூதலத்திற்

சோனையைநேர் நாசினீர் தோலாச்சு வாசமும்

யானையினற் றிப்பலிய தால்.

அகத்தியர் குணவாகடம்

Action:

Stomachic, Stimulant, Anthelmintic, Sudorific (Diaphoretic)

Pharmacological activity

- Anti inflammatory
- Analgesic
- Anti cancer
- Anthelimatic
- Hepato protective
- Anti oxidant

Phyto chemical constituents

- Steroid, carbohydrate, flavonoids, alkaloids
- Tannin, saponin, terpenoids

10. சுக்கு: ***Zingiber officinale,Rosc***

Taxonomical classification

Kingdom	: Plantae
Division	: Magnoliophyta
Class	: Liliopsida
Order	: Zingiberales
Family	: Zingibera
Genus	: Zingiber
Species	: Z. officinal

Vernacular classification

Tamil	: Chukku
Hindi	:Sonth
Sanskrit	: Nagaram
Telugu	: Sonti

Kannadam : Ona shunti

Malayalam : Chukku

Parts used : Tuber

Organoleptic characters

Taste : Pungent

Character : Hot potency

Division : Pungent

General characters of Chukku

வாதப் பிணிவயி றூதற் செவிவாய்

வலிதலை வலிகைல வலியிரு விழிநீர்

சீதத் தொடுவரி பேதிப் பலரோ

சிகமலி முகமக முகமிடி கபமார்

சீதச் சுரம்விரி பேதச் சுரநோய்

தெறிபடுமெனமொழி குவர்புவி தனிலே

ஈதுக் குதவுமி தீதுக் குதவா

தெனும்விதி யிலைநவ சுறுகுண முனவே.

தேரையர் குணவாகடம்

Action: Stimulant, Stomachic, Carminative

Pharmacological activity

- Anti inflammatory
- Anti oxidant
- Anti cancer

Phyto chemical constituents

- Quercetin, zingerone, gingerenone-A, 6-dehydro gingerdione
- B-bisabolene,α-curcumene,zingiberene
- α-farnesene,β-sesquiphellandrene

11. மரமஞ்சள்: ***Coscinium fenestratum. (Gaertn) colebr***

Taxonomical classification

Kingdom	: Plantae
Division	:Tracheophytes
class	:Eudicouts
Order	: Ranunculales
Family	: Menispermaceae
Genus	: *Coscinium*
Species	: *C. fenestratum*

Vernacular classification

Tamil	: Mara manjal
English	: Tree turmeric
Hindi	: Jhar haldi
Malayalam	: Mara mannel
Sanskrit	: Darvi

Parts used : Sakkai

Organoleptic characters

Taste : Bitter

Character : Hot potency

Division : Pungent

General characters of Maramanjal

அழன்றகண மூலம் அருசி யுடனே

உழன்ற கணச்சுரமும் ஓடுஞ் -சுழன்றுள்ளே

வீறுசுர முந்தணியும் வீசுமர மஞ்சளுக்குத்

தேறு மொழியனமே! செப்பு.

அகத்தியர் குணவாகடம்

Action: Febrifuge, Stomachic, Tonic

Pharmacological activity

- Antimicrobial
- Anti-inflammatory
- Antioxidant activity

Phyto chemical constitutents

- Alkaloids,terpenoids, triterpenoids, glycosides, cardiac glycosides
- Phenols, tannins, flavonoids, saponins

12. **அதிமதுரம்:** ***Glycyrrhiza glabra.Linn***

Taxonomical classification

Kingdom :Plantae

Subkingdom :Tracheobionta

Super division :Spermatophyta

Division :Magnoliophyta

Class :Magnoliopsida

Subclass :Rosidae

Order : Fabales

Family :Fabaceae

Genus : *Glycyrrhiza*

Species : *Glycyrrhiza glabra. L*

Vernacular classification

Tamil :Atti, Kundriver, Mathoogam,Athingam

English :Jequitity ; Indian or Jamaica liquorice

Hindi :Jathi -Madh,Mulath

Malayalam :Ati -Madhuram

Telugu :Ati -Madhuramu

Sanskrit :Yahti -Madhukam

Arabian :Aslussus

Parts used : Root

Organoleptic characters

Taste : Sweet

Character : Cool

Division : Sweet

General characters of Atti

கத்திரியரி முப்பிணியால் வருபுண் தாகங்

கண்ணோய்உன் மாதம்விக்கல் வலிவெண் குட்டம்

பித்தமெலும் புருக்கி கிரிச்சரம் ஆவர்த்த

பித்தமத மூர்ச்சை விட பாகம் வெப்பந்

தத்திவரு வாதசோ ணிதங்கா மாலை

சருவவிடங் காமியநோய் தாதுநட்டங்

குத்திருமல் ஆசியங்கம் இதழ்நோய் இந்து

குயப்புணும்போம் மதூகமெனக் கூறுங்காலே.

தேரையர் குணவாகடம்

Action

Emollient, Demulcent, Mild expectorant, Laxative, Tonic

Pharmacological activity

- Anti viral Activity
- Anti-Inflammatory
- Anti diabetic Activity
- Anti hyperlipidemic Activity
- Hypocholesterolaemic
- Anti-Obesity Activity
- Hepato protective Activity
- Neuroprotective

Phyto chemical constituents

- Glycyrrhizin, 18β-Glycyrrhizic Acid , Alkaloids, Glycosides
- Carbohydrates, Starches, Phenol Compounds, Flavonoids
- Proteins, Pectin, Mucilage, Saponins, Lipids, Tannins, Sterols

13. செவ்வியம்:***Piper nigrum.Linn***

Taxonomical classification

Kingdom	: Planate
Division	: Mangnoliophyta
Class	:Mangnoliopsida
Order	:Piperales
Family	: Piperaceae
Genus	: piper
Species	: nigrum

Vernacular classification

Tamil	: Milagu
English	: Black peppr
Hindi	: Kali mirch
Malayalam	: Kurumulaku
Telugu	: Miriyalu
Sanskrit	: Maricha

Parts used : Root

Organoleptic characters

Taste	: Pungent, bitter
Character	: Hot potency
Division	: pungent

General characters of Cheviyam

சூலை அருசிசன்னி தொல்லிருமல் ஈளைபித்தம்

மேலைக்குரற்கம்மல் வெங்களநோய் -மூலசுரம்

கவ்வியங்கத் தேறு கனதா வரவிடமுஞ்

செவ்வியங் கொள்ளவிடுந் தேர்.

அகத்தியர் குணவாகடம்

Action:

Carminative, Anti periodic, Stimulant, Resolvent, Anti vatha, Anti dote

Pharmacological activity

- Anti platelet
- Anti hypertensive
- Anti cancer
- Antioxidant
- Analgesic
- Antidepressants

Phyto chemical constitutents

- Piperine, Essential oils, B- Caryophyllene, Limonene
- Sabinene, A-Pinene, B- Bisabolene, A- Copaene

14. **கோட்டம்:** ***Costus speciosusJ.E.Smith***

Taxonomical classification

Kingdom : Planate

Subkingdom : Tracheobinota

Super division : Spermatophyta

Division : Mangoliophyta

Class : Liliopsida

Order : Zingiberales

Family :Coastaceae

Genus : Costus

Species : speciosus

Vernacular classification

Tamil : Kottam

English :Costus root

Malayalam : Kottam

Telugu :Kostam

Sanskrit : Koshtam

Parts used : Root

Organoleptic characters

Taste : Bitter

Character : Hot potency

Division : Pungent

General characters of Kottam

நாட்டிலுறு வெட்டை நடுக்கம் எனுநோய்கள்

கோட்டமெனச் சொன்னால் குலையுங்காண் -கூட்டிற்

சுரதோடந் தொண்டைநோய் தோலாத பித்தம்

பரதேசம் போமே பறந்து.

அகத்தியர் குணவாகடம்

Action: Stomachic, Expectorant, Tonic, Stimulant, Diaphoretic

Pharmacological activity

- Antioxidant
- Anti inflammatory
- Anti cancer
- Anti cholinesterase
- Hepatoprotective
- Diuretic
- Anti spasmodic
- Anti fungal
- Anti bacterial

Phyto chemicals constituents

- Triterpenes, aliphatic, hydroxyl ketones, fatty acid, oxa-acid
- Abscisic acid, starch, mucilage, corticosteroids, Tigogenin

15. மிளகு: ***Piper nigrum.Linn***

Taxonomical classification

Kingdom : Planate

Division : Mangnoliophyta

Class :Mangnoliopsida

Order :Piperales

Family : Piperaceae

Genus : piper

Species : nigarum

Vernacular classification

Tamil : Milagu

English : Black peppr

Hindi : Kali mirch

Malayalam : Kurumulaku

Telugu : Miriyalu

Sanskrit : Maricha

Parts used : Fruit

Organoleptic characters

Taste : Pungent, bitter

Character : Hot potency

Division : pungent

General characters of Milagu

தீயாகி யெங்கும் திரியுமதை யாவத்து

மோயாம லெப்படியு முண்டாக்காற் -பாயாது

போந்திமிர்வாத தங்கிரந்தி புண்ணீரும் மண்ணவர்க்கும்

காந்திமெய்வா தச்சலுப்பைக் காய்.

தேரன் வெண்பா

Action:

Carminative, Anti periodic, Stimulant, Re solvent,Anti vatha, Anti dote.

Pharmacological activity

- Anti platelet
- Anti hypertensive

- Anti cancer
- Antioxidant
- Analgesic
- Antidepressants

Phyto chemical constitutents

- Piperine, Essential oils, B- Caryophyllene, Limonene
- Sabinene, A-Pinene, B- Bisabolene, A- Copaene

16. வெட்பாலை: ***Wrightia tinctoria.R.Br***

Taxonomical classification

Kingdom	:Plantae
Division	: Angiosperms
Class	: Asterids
Order	: Gentianales
Family	: Apocynaceae
Genus	: *Wrightia*
Species	: *W. tinctoria*

Vernacular classification

Tamil	: Vetpalai
English	: Pala indigo plant
Hindi	: Mitta indrajava
Malayalam	: Kutakappala
Telugu	:Kodisha
Sanskrit	:Indrayava

Parts used : Seed

Organoleptic characters

Taste : Sweet

Character : Cold potency

Division : Sweet

General characters of Vetpalai

வெட்பாலை தன்னரிசி வீறுபித்த வாதமொடு

கொட்பார் கரப்பான் குடல்வாத –உப்பிசத்தைக்

காணாம லேநாளுங் கண்டிக்குங் காசினியிற்

பூணார் முலையா புகல்.

அகத்தியர் குணவாகடம்

Action : Tonic

Pharmacological activity

- Anti-oxidant activity
- Anti-bacterial activity
- Anti-fungal activity
- Anti- diabetic activity
- Anti analgesic activity

Phyto chemical constituents

- Cycloartenone, β-amyrin, cycloeucalenol, β-sitosterol
- Sterol 14 α–methyl zymosterol, desmosterol, cholesterol,
- 24-methylene-25-methyl cholesterol, 24-dehydropollinastanol

17. ஓமம் : ***Carum copticum Benth&Hook.f.***

Taxonomical classification

Kingdom	: Plantae
Division:	Spermatophyta
Class	:Magnoliopsida
Order	: Apiales
Family	:Apiaceae
Genus	: Trachyspermum
Species	: Carum copticum

Vernacular classification

Tamil	: Omam
English	: Bishops weed
Hindi	: Ajvayam
Malayalam	: Omam
Telugu	:Omamu
Sanskrit	:Yavani

Parts used : Seed

Organoleptic characters

Taste	: Pungent
Character	: Hot potency
Division	: Pungent

General characters of Omam

சீதசுரங் காசஞ் செரியாமந் தம்பொருமல்

பேதியிரைச் சல்கடுப்பு பேராமம்-ஓதிருமல்

பல்லொடுபல் மூலம் பகமிவைநோ யென்செயுமோ

சொல்லொடுபோம் ஓமமெனச் சொல்.

அகத்தியர் குணவாகடம்

Action:

Stomachic, Antispasmodic , Carminative, Anti septic,Stimulant, Tonic.

Pharmacological activity

- Anti hypertensive
- Antispasmodic
- Antiplatelet-aggregatory activity
- Anti oxidant
- Hyperlipidemic
- Analgesic
- Anti-inflammatory activity
- Immunomodulatory activity

Phyto chemical constituents

- Fiber, carbohydrate tannins, glycosides, moisture protein, fat
- Saponins, flavones, minerals like calcium, phosphorus
- Iron, nicotinic acid, p-cymene, β-pinene , limonene ,γ-pinenes , β-pinene

18. கொடிவேலி*: Plumbago indica.Linn*

Taxonomical classification

Kingdom	:Plantae
Subkingdom	:Tracheobionta
Super division	:Spermatophyta
Division	:Magnoliophyta
Class	:Magnoliopsida
Subclass	:Caryophyllidae
Order	: Plumbaginales
Family	:Plumbaginaceae
Genus	: *Plumbago*
Species	: *p.indica*

Vernacular classification

Tamil	: Kodiveli, Chithramoolam
English	:Ceylon Leadwort
Hindi	:Chitra
Sanskrit	:Chithraka
Telugu	:Chithramulam,
Kannadam	:Vahni, Chithramoolam
Malayalam	:Vella Kodiveli, Thumbakodiveli
Bengal	: Chita

Parts used : Root bark

Organoleptic character

Taste : Pungent

Character : Hot

Division : Pungent

General characters of Kodiveli

கட்டிவிர ணங்கிரந்தி கால்கள் அரையாப்புக்
கட்டிச்சூலை வீக்கங் காழ்மூலம் -முட்டிரத்தக்
கட்டுநீ ரேற்றங் கனத்த பெருவயிறும்
அட்டுங் கொடிவேலி யாம்.

அகத்தியர் குணவாகடம்

Action: Tonic, Stomachic

Pharmacological activity

- Anti plasmodial activity
- Anti oxidant activity
- Anti inflammatory activity
- Hyper lipidaemic activity
- Anti arthritic activity
- Hepato protective activity

Phyto chemical constituents

- Plumbagin , 3-chloroplumbagin, 3,3,-biplumbagin, biplumbagin, plumbagic acid Plumbagic acid glucosidases , 3,8-dihydoxy-6-methoxy -2-iso Propyl-1-4-naphthaquinone, 5,7-dihydroxy -8- methoxy-2-methyl-1,4-naphthoquinone
- Zeylinone, isozeylanone, elliptinone, droserone, isoshinanolone, maritinone, seselin, 5-methoxy seselin, suberosin, xanthyletin,

xanthoxyletin,Catecholtannins, beta sitosterol, vanilic acid, glucose, steroidal glycoside .

19. கடுகுரோகிணி: ***Picrorhizia scrophulariiflora Pennell***

Taxonomical classification

Kingdom :Plantae

Clade :Tracheophytes

Clade :Angiosperms

Clade :Eudicots

Clade :Asterids

Order :Lamiales

Family :Plantaginaceae

Vernacular classification

Tamil : Kadurogini,Kadagarogini

English : Picrorhiza

Hindi :Katuka,Kuru,Kutki

Sanskrit :Katvi

Telugu : Katki

Kannadam : Katukarohini

Malayalam :Katukurohini,Katurojini

Parts used: Root

Organoleptic characters

Taste :Pungent, Bitter

Character :Hot

Division :Pungent

General characters of Kadugurohini

மாந்தஞ் சுரமையம் வாயுகரப்பானாமஞ்

சேர்ந்தமலக் கட்டு திரிதோடம் - போந்தபொட்டுப்

புண்வயிறு நோயிவைபோம் பொற்கொடியே – பேதியுண்டாம்

திண்கடுகு ரோகணிக்குத் தேர்.

அகத்தியர் குணவாகடம்

Action:

Anti periodic, Stomachic, Cathartic, Anthelmintic.

Pharmacological activity

- Antioxidant activity
- Anti inflammatory activity
- Immunomodulatory activity
- Hepato protective activity
- Anti cholestatic activity

Phyto chemical constituents

- Glycoside (Kutkin), Picroside-I and II
- 2,2'- diphenyl-l-picrylhydrazyl(DPPH),
- 2,2'-azino-bis-(3-ethylbenzothiazoline-6-sulfonic acid) (ABTS)

20. **தாமரைகிழங்கு:** ***Nelumbo nucifera,Gaertin***

Taxonomical classification

Kingdom :Plantae

Devision : Magnoliophyta

Class : Magnoliopsida

Order : Proteales

Family :Nymphaeaceae

Genus : Nelumbo Adans

Species : nucifera Gaertn.

Vernacular classification

Tamil : Thamarai

English : Sacred lotus

Sanskrit : Pankaja

Telugu : Tamara

Kannadam : Tavare

Malayalam : Aravindam

Parts used : Tuber

Organoleptic character

Taste : Sweet

Character : Cold potency

Division : Sweet

General characters of Thamarai kizhanku

கண்ணுக் கொளிகொடுக்குங் காசபித்தம்போக்கும்

எண்ணுங் குளிர்ச்சிதரும் ஏந்திழையே!- புண்ணுகளில்

தாமரைப்புண்ணும் போக்குந் தொந்திக்கடுப்பகற்றுந்

தாமரைக் கந்தமது தான்.

அகத்தியர் குணவாகடம்

Action: Demulcent

Pharmacological activity

- Anti-inflammatory
- Anti diabetic
- Anti oxidant
- Immuno modulator

Phyto chemical constituents

- Fresh rhizome contains 83.80% water, 0.11% fat, 1.56% reducing sugar,0.41% sucrose, 2.70% crude protein, 9.25% starch, 0.80% fiber, l.10% ash and calcium.
- The vitamins thiamine (0.22 mg/100 g), riboflavin , niacin, ascorbic acid and an asparagines-like amino acid, alkaloids, lipids, xanthophylls, nuciferine, phospholipids, carotenes, flavonoids, aporphines.

21. வசம்பு: ***Acorus calamus.Linn***

Taxonomical classification

Kingdom : Plantae
Division : Magnoliophyta
Class : Liliopsida
Order : Acorales
Family :Acoraceae
Genus : Acorus
Species : A.calamus

Vernacular classification

Tamil : Vasambu

English : Sweet flag

Hindi : Bach

Sanskrit : Vacha

Telugu : Vasa

Kannadam : Baja

Malayalam :Vayamba

Parts used : Root

Organoleptic character

Taste : Pungent

Character : Hot potency

Division : Pungent

General characters of Vasambu

பாம்பாதி நஞ்சற் புதப்புண் வலிவிடபாகங் குன்மம்

சூம்பா ரிரத்தபித் தம்முக நாற்றம்வன் சூலைசன்னி

வீம்பாம்பை காசம் பிலீகஞ் சிலிபதம் வீறிருமல்

தாம்பாங் கிருமி யிவையேகு மாசிவ சம்பினையே.

தேரையர் குணவாகடம்

Action

- Stimulant, Stomachic, Anti periodic
- Carminative,Emetic, Disinfectant, Germicide

Pharmacological activity

- Anti-Oxidant
- Anti-Inflammatory
- Anti-Cancer
- Anti-Ulcer
- Anti-Fungal
- Anti-Allergic
- Anti-Microbial

- Neuroprotective
- Pesticidal
- Cardio protective effects

Phyto chemical constituents

- Alpha (A)-Asarone (1,2,4-Trimethoxy-5-[(E)-Prop-1-Enyl] Benzene) , Beta (B)-Asarone (1, 2, 4-Trimethoxy-5-[(Z)-Prop-1-Enyl] Benzene)
- Glycosides (Xanthone), Volatile Oil, Sesquiterpenes, Monoterpenes, Flavonoids Steroids, Saponins, Lignin, Tannins, Mucilage, Alkaloid .

22. திப்பிலி வேர்: **Piper longum.Linn**

Taxonomical classification

Kingdom	:Plantae
Class	:Dicot
Order	:Microembryeae
Family	:Piperaceae
Genus	: *Piper*
Species	:*longum*

Vernacular classification

Tamil	: Kiranthigam,Narukuveeru,Narukkuthippili
English	: Lomg -pepper -root
Hindi	:Felfelai -maya
Sanskrit	:Pipalee -moola
Telugu	: Pippili -mulam
Kannadam	: Hippfli -beru
Malayalam	:Kattu -thippili

Parts used **:** Root

Organoleptic character

Taste :Fresh (Sweet), Dry (Pungent)

Character :Fresh (Cool), Dry (Hot)

Division :Fresh (Sweet), Dry (Pungent)

General characters of Thippili

தாகபித்தஞ் சோகந் தணியாச் சுரமிருமல்

மேகங் குரற்கம்மல் மெய்க்கடுப்பு – ஏகுங்காண்

திப்பிலிமூ லங்கண்டத் திப்பிலிய தாம்நறுக்குத்

திப்பிலியென் றேயொருக்காற் செப்பு.

அகத்தியர் குணவாகடம்

Action: Stomachic

Pharmacological activity

- Anti-Arthritic
- Anti-Inflammatory
- Analgesic
- Anti-Oxidant
- Anti-Microbial
- Anti-Stress
- Anti-Hyperglycemic
- Hepatoprotective
- Immunomodulatory

Phyto chemical constituents

- Piperin, piperlongumine, essential oil, flavonoids , steroids.

23. அதிவிடயம்: ***Aconitum heterophyllum Wall-ex-Royle***

Taxonomical classification

Kingdom	:Plantae
Class	:Magnoliophyta
Order	: Ranunculales
Family	: Ranunculaceae
Genus	: Aconitum
Species	:A.heterophyllum

Vernacular classification

Tamil	: Atividayam
English	: Indian atis root
Hindi	:Atiis
Sanskrit	: Ativisha
Telugu	: Ati vasa
Kannadam	: Bhangura
Malayalam	: Atividayam

Parts used **:** Root

Organoleptic character

Taste	: Bitter
Character	: Hot potency
Division	: Pungent

General characters of Atividayam

அதிவி டயம்சர்க்க ராற்புதற்நோய் வெப்பு

கொதிமருவு பேதியொடு கோழை- எதிர்வாந்தி

என்றுரைக்கும் நோய்க்கூட்டம் இல்லா தகற்றிவிடும்

குன்றை நிகர்முலையாய் கூறு.

அகத்தியர் குணவாகடம்

Action

- Stomachic, Astringent, Febrifuge
- Aphrodisiac, Tonic, Anti periodic

Pharmacological activity

- Anti-oxidative
- Anti-inflammatory
- Anti-flatulent
- Anti-periodic
- Anti-phlegmatic
- Carminative

Phyto chemical constituents

- Alkaloids, carbohydrates, protein, amino acid, cardiac glycosides, phenols, flavonoids, saponins, terpenoids and quinines, Aconitine, Anthorine
- 12-secohetisan-2-ol,N-succinoylanthranilate,Atesinol6-benzoylheterastine, N-diethyl-N-formyllaconitine, Methyl aconitine, Aconitine, Anthorine.

24. சிவதை வேர்: ***Operculina turpethum.Linn***

Taxonomical classification

Kingdom : Plantae

Devision : Angiosperma

Class :Dicotyledons

Order : Solanales

Family : Convolvulaceae

Genus : Operculina

Species : *O. turpethum*

Vernacular classification

Tamil : Shivadai

English : Turpeth root

Hindi : Nasvath

Sanskrit : Trivrith

Telugu : Tegada

Kannadam : Tigade

Malayalam : Trikclpa konna

Parts used : Root

Organoleptic character

Taste : Bitter

Character : Hot potency

Division : Pungent

General characters of Shivadai

உள்ள மலமும் உதவார்த்த மும்வயிற்றைக்

கொள்ளுபித்த வாதமும்போங் கூறுங்கால்- பிள்ளைகட்குச்

செப்பு கிரசமும்போந் தேனே யுலகத்துள்

தப்பில் சிவதைக்குத் தான்.

அகத்தியர் குணவாகடம்

Action: Purgative

Pharmacological activity

- Nephro protective
- Hepatoprotective
- Anti inflammatory
- Analgesic
- Anti-Arthritic activity
- Anti diabetic

Phyto chemical constituents

- Neriodorin, neriodorein , karabin, b-sitosterol
- α - and β -turpentine, coumarin, scopoletin, lupeol, betulin.

25. **குரோசணி ஓமம்:** ***Hyoscyamus niger.Linn***

Taxonomical classification

Kingdom : Plantae

Subkingdom :Tracheobionta

Super division :Spermatophta

Division :Magnoliophyta

Class :Magnoliopsida

Subclass :Asteridae

Order : Solanales

Family :Solanaceae

Genus : *Hyoscyamus*

Species : *H. Niger. L*

Vernacular classification

Tamil : Thippiyam, Kaarabi, Kaarsavai

English :Henbaneseeds, Black henbane

Hindi :Ajowan

Malayalam :Kurasani (Omum)

Telugu :Kurasani oamamu

Sanskrit :Parasikayavani

Parts used : Seeds

Organoleptic characters

Taste :Pungent

Character :Hot

Division :Pungent

General characters of Kurasani omam

வெகுமூத் திரம்வாதம் வீரியநட் டம்புண்

உகுபேதி யுட்கடுப்பி னோடே- மிகுகரப்பான்

தீராக் கபமிவைபோம் செய்யகு ரோசானியென்றால்

வாரா மயக்கமுறு மால்.

அகத்தியர் குணவாகடம்

Action

Hypnotic, Sedative, Anodyne, Antispasmodic, Mild diuretic.

Pharmacological activity

- Anticonvulsant activity
- Anti diarrheal activity
- Broncho dilatory activity
- Anti spasmodic activity

Phyto chemical constituents

- 1 -Hyoscyamine (Alkaloid), Atropine, Scopolamine, Hyoscine, Atropine, Flavonoids (Rutin), Spiraeoside And 31 Etc), Furanoflavonoid, Glucoside, Pongamoside C,Flavonol Glucoside, Pongamoside D.

26. குங்கிலியம்: ***Shorea robusta,Gaertn.f.***

Taxonomical classification

Kingdom :Plantae

Division :Tracheophyta

Class :Magnoliopsida

Order : Malvales

Family : Dipterocarpaceae

Genus : Shorea

Species : Shorea robusta

Vernacular classification

Tamil : Kungiliyam

English : Sal tree

Hindi : Dhuna

Malayalam : Kungiliyam

Telugu : Guggilamu

Sanskrit : Guggalium

Parts used : Pisin

Organoleptic characters

Taste : Bitter

Character : Hot potency

Division : Pungent

General characters of Kungiliyam

பெரும்பாடு மேகம் போம் பேரா துடலில்

அரும்பிய புண் ணாறுமிவை யல்லால் - குரும்பாம்

எலும்புருக்கி புண்சீழும் ஏகும் உலகில்

சலம்பருகுங் குங்கிலியத் தால்.

அகத்தியர் குணவாகடம்

Action

Stimulant, Expectorant, Diuretic.

Pharmacological activity

- Analgesic
- Anti-hyperlipidemic,
- Anti-inflammatory
- Antimicrobial
- Antioxidant
- Antipyretic
- Antiulcer

- Immunomodulatory
- Anti arthritic activity.

Phyto chemical constitutents

- Bergenin, ursolic acid, caryophyllene oxide, calarene epoxide
- Lupeol, β-humulene, α-amyrin, α-amyrin, β-caryophyllene.

27. நெய்

General characters of Cow ghee

தாகமுழ லைசுட்கம் வாந்தி பித்தம் வாயுபிர

மேகம் வயிற்றெரிவு விக்கலழல் - மாகாசங்

குன்மம் வறட்சி குடற்புரட்ட லஸ்திசுட்களஞ்

சொன்னமூலம் போக்குநிறைத் துப்பு.

பதாாத்தக்குண விளக்கம்

Pharmacological activity

- Anti oxidant
- Anti atherogenic activities
- Anti cancer

Medicinal uses:

1. Ghee is also important carrier of fat-soluble vitamins (A, D, E, K) and essential fatty-acids (linolenic acid and arachidonic acid).
2. Ghee will be easily absorbed and transported to targeted areas of the body.
3. It is mainly composed of glycerines (usually mixed), and other minor constituents free fatty acids, phospholipids, sterols, sterol esters, fat-soluble vitamins, carbonyls, hydrocarbons, carotenoids.

DRUG NAME: KARUN KOZHI THYLAM

1. **கருங்கோழிக்கறி :** Gallus gallus

General characters of Karunkozhi

குட்டங் கடிகிருமி கோரவா தக்கூட்ட

மட்டிடாச் சூலையறு மாதரசே- துட்ட

கிரந்தியொடு புண்வலிபோங் கேளுடலு ரக்கு

மருந்துகருங் கோழியூன் வை.

பதார்த்த குணவிளக்கம்

Pharmacological activity

- Anti inflammatory
- Anti pyretic
- Anti analgesic

2. **வேப்பெண்ணெய்:** ***Azadirachta indica.A.Juss***

Taxonomical classification

Domain	: Eukaryota
Kingdom	: Plantae
Phylum	: Spermatophyta
Class	: Magnoliopsida
Order	: Sapindales
Family	: Meliaceae
Genus	: Azadirachta
Species	: Azadirachta indica A.Juss

Vernacular classification

Tamil : Vembu

English : Neem tree

Sanskrit :Nimba

Telugu : Vepa

Kannadam : Bevina

Malayalam :Veppa

Parts used : Seed oil

Organoleptic characters

Taste : Bitter

Character : Hot

Division : Pungent

General characters of Neem oil

வாதம்போம் பித்தமிகும் மாறாக்கி ரந்தியொடு

மோதுகரப் பான்சிரங்கு முன்னிசிவும் - ஓதுடலின்

நாப்ப ணுறுசுரமு நாடுசன்னி யுந்தொலையும்

வேப்பநெய் யென்றொருக்கால் விள்ளு.

அகத்தியர் குணவாகடம்

Action : Stimulant, Antiseptic, Insecticide

Pharmacological activity

- Anti-inflammatory
- Antiseptic
- Anti analgesic

- Antipyretic
- Anti fungal
- Anti arthritic activity
- Immuno modulatory
- Anti-gastric ulcer

Phyto chemical constituents

- Oleic acid, palmitic acid , stearic acid , myristic, arachidic, linoleic and behenic acids, triterpenoids (salannin, nimbin and azadirachtin)
- Triterpenes, flavonoids, tannins, saponins, nimbidin, sodium nimbidate, gallic acid, catechin, and polysachharides
- Nimbolinin, nimbidol, sodium nimbinate, gedunin, and quercetin .

3. தேங்காய்ப்பால்: ***Cocos nucifera.Linn***

Taxonomical classification

Domain : Eukaryota

Kingdom : Plantae

Phylum : Magnoliophyta

Class : Liliopsida

Order : Arecales

Family : Arecaceae

Genus : Cocos.L

Species : Cocos nucifera.Lin

Vernacular classification

Tamil : Thenku maram

English : Coconut Tree

Sanskrit :Narikela

Telugu :Tenkayi chettu

Kannadam : Tengina gida

Malayalam :Thenna

Parts used: Coconut milk

Organoleptic characters

Taste : Sweet

Character : Cold

Division : Sweet

General characters of Coconut milk

வாதமாம் பித்தமுறும் வன்கரப்ப னும்படருந்

தாதுமிகவிருத்தியாந் தாழ்குழலே- போதநல்ல

அன்ன மிறங்கு மதியுருசியுண்டாகுந்

தென்னங்காய்ப் பாலாற் றெளி.

அகத்தியர் குணவாகடம்

Action: Refrigerant, Aperients, Nutrient, Diuretic

Pharmacological activity

- Anti inflammatory
- Anti oxidant
- Anti-arthritic activity
- Anti-osteoporosis
- Antifungal
- Antiviral activities
- Anti malarial

Phyto chemical constituents

- Water (50%), fat, protein-10, albumin, globulin, proclaim
- Glutein, phospholipids, cephalin , lecithin , phenol

4. கடுகு: **Brassico juncea .Linn (czernc coss)**

Taxonomical classification

Domain : Eukaryota

Kingdom : Plantae

Phylum : Spermatophyta

Class : Dicotyledonae

Order : Capparidales

Family : Brassicaceae

Genus : Brassica

Species : Brassica juncea .Linn

Vernacular classification

Tamil : Karung kadugu

English : Black mustard seed

Sanskrit : Rajika

Telugu : Nalla avalu

Kannadam : Sasive

Malayalam : Karuththa kadugu

Parts used : Seed

Organoleptic characters

Taste : Pungent

Character : Hot

Division : Pungent

General characters of Kadugu

இடிகாச நாசிச்சூ ரீளைகபம் பித்தங்

கடிவாத சீதங் கடுப்போ - டுடலிற்

படுகோட்டு நோய்யென்னும் பங்கிவைக ளைப்புண்

கடுகோட்டு மேன்மருந்து காண்.

அகத்தியர் குணவாகடம்.

Action: Stimulant, Digestive, Diuretic

Pharmacological activity

- Antioxidant
- Anti-inflammatory
- Antiviral
- Anti-allergic
- Anti platelet
- Anti tumor activitity

Phyto chemical constituents

- Allylisothiocyanate, flavonoids, carbohydrates
- Glycosides, proteins, alkaloids

7. STANDARDIZATION OF PANCHATHIKTA KIRUTHAM

7.1 ORGANOLEPTIC CHARACTERISATION

Project ID : NRS/AS/0737/09/2021

Name : Dr.S.Mahespriya

Address : National Institute of Siddha,

Chennai, Tamil Nadu,India.

Sample –ID : PG

Organoleptic characteristics of drug Panchathikta kirutham for various characters like state, Nature, Color, Odour etc. Were carefully noted

Interpretation

Table: 7.1 organoleptic parameters of Panchathikta kirutham

State	Liquid
Nature	Slightly Viscous
Odour	Characteristic
Touch	Greasy
Flow Property	Free Flowing
Appearance	Yellowish

7.2 PHYSICOCHEMICAL EVALUATION OF PANCHATHIKTA KIRUTHAM

Table: 7.2.1 Solubility Profile

S.No	Solvent Used	Solubility / Dispersibility
1	Chloroform	Soluble
2	Ethanol	Insoluble
3	Water	Insoluble
4	Ethyl acetate	Soluble
5	DMSO	Insoluble

Determination of Iodine value

About 20 gm of test sample was transferred into Iodine flask. To which 10 ml of chloroform was added and warmed slightly and cooled for 10 minutes. Followed by this about 25 ml of Wiji's solution was added in the same flask and shaken well. The flask was allowed to stand for 30 mins and refrigerated for anhour.T About 10 ml of KI solution was added to this and titrated against 0.1 N Sodium thiosulphate solutions until the appearance of yellow colour. 1 ml of starch indicator was added and again titrated against the sodium thiosulphate solution from the burette. Disappearance of blue colour indicates end point. Repeated the above procedure without taking sample and noted the corresponding reading for blank titration.

Determination of saponification value

About 2 gm of test sample was transferred into the round bottomed flask. To this about 20 ml of 0.5 N alcoholic KOH solutions was added to the round bottomed flask. Repeated the same procedure without taking the sample for blank titration. Reflux both sample and blank round bottomed flasks for 1 hour. After reflux, allowed both the round bottomed flasks to cool. Titrated the samples using

0.5 N HCl with phenolphthalein indicator. The disappearance of pink indicates the end point.

Determination of Viscosity value

Viscosity determination were been carried out using Ostwald viscometers. Measurement of viscosity involves the determination of the time required for a given volume of liquid to flow through a capillary. The liquid is added to the viscometer, pulled into the upper reservoir by suction, and then allowed to drain by gravity back into the lower reservoir. The time that it takes for the liquid to pass between two etched marks, one above and one bellow the upper reservoir, is measured.

Determination of Refractive Index

Determination of RI was carried out using Refractometer**.**

Determination of Weight per ml

Weight per ml was determined using the comparative weight calibration method, in which the weight of 1ml of the base of the formulation was calculated and then weight of 1 ml of finished formulation were been calculated. The difference between weight variations of the base with respect to finished formulation calculated as an index of weight per ml.

Acid Value

Accurately 5 g of test sample was weighed and transferred into a 250 ml conical flask. To this, a 50 ml of neutralized alcohol solution was added. This mixture was heated for 10 min by heating mantle. Afterwards, the solution was taken out after 10 min and 1 or 2 drops of phenolphthalein indicator was added. This solution was titrated against KOH solution from the burette. The appearance of pink color indicated the end point. The volume of consumed KOH solution was determined and the titration of test sample was carried out in triplicate and the mean of the successive readings was used to calculate the acid-value of the respective sample by following expression.

Acid value = Titter Value X 0.00561X 1000 / Wt of test sample (g)

Peroxide value

5 g of the substance being examined, accurately weighed, into a 250-ml glass-stoppered conical flask, add 30 ml of a mixture of 3 volumes of glacial acetic acid and 2 volumes of chloroform, swirl until dissolved and add 0.5ml volumes of saturated potassium iodide soluton. Allow to stand for exactly 1 minute, with occasional shaking, add 30 ml of water and titrate gradually, with continuous and vigorous shaking, with 0.01M sodium thiosulphate until the yellow colour almost disappears. Add 0.5 ml of starch solution and continue the titration, shaking vigorously until the blue colour just disappears (a ml). Repeat the operation omitting the substance being examined (b ml). The volume of 0.01M sodium thiosulphate in the blank determination must not exceed 0.1 ml.

$$\text{Peroxide value} = 10\ (a - b)/w$$

Table : 7.2.2 Analytical Report of Panchathikta kirutham

S.No	Parameter	PG
1	Viscosity at 50oC (Pa s)	61.95
2	Refractive index	1.32
3	Weight per ml (gm/ml)	1.18
4	Iodoine value (mg I2/g)	90.17
5	Saponificationvalue (mg of KOH to saponify 1gm of fat)	197.39
6	Acid Value mg KOH/g	1.17
7	Peroxidase Value mEq/kg	5.8

7.3 PHYTOCHEMICAL ANALYSIS OF PANCHATHIKTA KIRUTHAM

Project ID : NRS/AS/0737/09/2021

Name : Dr.S.Mahespriya

Address : National Institute of Siddha,

Chennai, Tamil Nadu,India.

Sample –ID : PG

Test for alkaloids

Mayer's Test: To the test sample, 2ml of mayer's reagent was added, a dull white precipitate revealed the presence of alkaloids.

Test for coumarins

To the test sample, 1 ml of 10% sodium hydroxide was added. The presence of coumarins are indicated by the formation of yellow color.

Test for saponins

To the test sample, 5 ml of water was added and the tube was shaken vigorously. Copious lather formation indicates the presence of Saponins.

Test for tannins

To the test sample, ferric chloride was added, formation of a dark blue or greenish black color showed the presence of tannins.

Test for glycosides- Borntrager's Test

Test drug is hydrolysed with concentrated hydrochloric acid for 2 hours on a water bath, filtered and the hydrolysate is subjected to the following tests. To 2 ml of filtered hydrolysate, 3 ml of choloroform is added and shaken, choloroform layer is separated and 10% ammomia solution is added to it. Pink colour indicates presence of glycosides.

Test for flavonoids

To the test sample about 5 ml of dilute ammonia solution were been added followed by addition of few drops of conc. Sulfuric acid. Appearance of yellow color indicates the presence of Flavonoids.

Test for phenols

Lead acetate test: To the test sample; 3 ml of 10% lead acetate solution was added. A bulky white precipitate indicates the presence of phenolic compounds.

Test for steroids

To the test sample, 2ml of chloroform was added with few drops of conc. Sulphuric acid (3ml), and shaken well. The upper layer in the test tube was turns into red and sulphuric acid layer showed yellow with green fluorescence. It showed the presence of steroids.

Triterpenoids

Liebermann–Burchard test: To the chloroform solution, few drops of acetic anhydride was added then mixed well. 1 ml concentrated sulphuric acid was added from the sides of the test tube, appearance of red ring indicates the presence of triterpenoids.

Test for Cyanins

Aanthocyanin

To the test sample, 1 ml of 2N sodium hydroxide was added and heated for 5 min at 100^{o}C. Formation of bluish green colour indicates the presence of anthocyanin.

Test for Carbohydrates - Benedict's test

To the test sample about 0.5 ml of Benedic's reagent is added. The mixture is heated on a boiling water bath for 2 minutes. A characteristic coloured precipitate indicates the presence of sugar.

Proteins (Biuret Test)

To extracts 1% solution of copper sulphate was added followed by 5% solution of sodium hydroxide, formation of violet purple colour indicates the presence of proteins.

RESULTS

Qualitative Phytochemical Investigation

Table: 7.3 Phytochemical analytical report

S.NO	TEST	OBSERVATION
1	ALKALOIDS	-
2	FLAVANOIDS	-
3	GLYCOSIDES	-
4	STEROIDS	+
5	TRITERPENOIDS	+
6	COUMARIN	+
7	PHENOL	-
8	TANIN	-
9	PROTEIN	+
10	SAPONINS	-
11	SUGAR	-
12	ANTHOCYANIN	-
13	BETACYANIN	-

7.4 BIOCHEMICAL ANALYSIS OF PANCHATHIKTA KIRUTHAM

Preparation of extract for Biochemical analysis

10 gm of Panchathikta girutham was measured accurately and placed in 250 ml of clean beaker and added with 250 ml of distilled water. Then it was boiled well for 10 minutes. Then it was cooled and filtered in a 100 ml volumetric flask and made up to 100 ml with distilled water.

Table: 7.4.1 Biochemical analysis

Experiment	**Observation**	**Inference**
Appearance of sample	**Yellow** in colour	
Solubility Little of the sample was shaken well and mixed with distilled water.	**Insoluble**	
Action of heat A small amount of the sample was taken in a dry test tube and heated gently at first and then strong.	No brown fumes No white fumes were evolved.	Absence of Nitrate Absence of Carbonate
Flame test A small amount of sample was made into paste with con.HCL in a watch class and introduced into no luminous part of the Bunsen flame.	No bluish green flame was appeared.	Absence of Copper
Ash test A filter paper was soaked into a mixture of sample and cobalt nitrate solutionintroduced into the Bunsen flame and ignited.	No Yellow colored flame was appeared	Absence of Sodium

Table: 7.4.2 Test for acid radicals

Test for Sulphate 2 ml of above prepared extract was taken in the test tube to this added2 ml of 4% ammonium oxalate Solution.	No Cloudy Appearance was present	Absence of Sulphate
Test for Chloride 2 ml of the above prepared solution was added with dil. HNO3 till the effervescence ceases. Then 2 ml of Silver nitrate solution was added.	No cloudy appearance was present	Absence of Chloride
Test for Phosphate 2 ml of the extract was treated with 2 ml of Ammonium molybdate Solution and 2 ml of Con. HNO3.	Absence of cloudy yellow appearance	Absence of Phosphate
Test for Carbonate 2 ml of the extract was treated with 2 ml of Magnesium sulphate Solution.	Cloudy appearance was present	**Presence of Carbonate**
Test for Nitrate 1 drop of the substance was heated with Copper tunics and concentrated H2SO4 and viewed the test tube vertically down.	No characteristic changes were formed	Absence of Nitrate
Test for Sulphide 1 ml of substance was treated with 2 ml of Con. HCL.	No rotten egg smelling gas was evolved	Absence of Sulphide
Test for Fluoride and Oxalate 2 ml of the extract was added with 2 ml of dis. Acetic acid and 2 ml Calcium chloride solution and heated.	Cloudy appearance was present	Absense of fluoride and Oxalate

Test for Nitrite 3drops of the extract was placed on the filter paper on that 2 drops of Acetic acid and 2 drops of Benzidine solution was placed.	No characteristic changes were observed	Absence of Nitrite
Test of Borate 2 pinches of the substances were made into paste by sulphuric acid alcohol (95%) and introduced into blue Flame.	Bluish yellow coloured flame was not appeared.	Absence of Borate

Table: 7.4.3 Test for basic radicals

Test for Lead : 2 ml of extract was added with 2 ml of Potassium iodide solution.	Yellow colored precipitate was not obtained.	**Present of Lead**.
Test for Copper: One pinch of substance was made into paste with Con. HCl in a watch glass and introduced into the non- luminous part of the flame.	No blue coloured flame was appeared	Absence of copper
Test for Aluminum To the 2 ml of the extract Sodium hydroxide was added in drops to excess.	No characteristic changes were observed	Absence of Aluminium
Test for Iron To the 2 ml of extract add 2 ml of ammonium Thiocynate solution was added .To the 2 ml of extract 2 ml ammonium Thiocynate solution and 2 ml of con HNO3 was added.	Mild red colour was appeared. Blood red colour was appeared	**Presence of Iron**

Test for Zinc To 2ml of the extract sodium hydroxide solution was added in drops to excess.	White precipitate was appeared.	**Presence of Zinc**
Test for Calcium 2 ml of the extract was added with 2 ml of 4% ammonium oxalate solution.	cloudy appearance was present	**Presence of Calcium**
Test for Magnesium To 2 ml of extract sodium hydroxide solution was added in drops to excess.	White precipitate was not appeared.	**Presence of Magnesium**
Test for Ammonium: To 2 ml of extract few ml of Nessler's reagent and excess of sodium hydroxide solution were added.	Brown colour was appeared	Absence of ammonium
Test for Potassium: 1 ml of substance was treated with 2 ml of sodium and then treated with 2 ml of cobalt nitrate in 30% glacial acetic acid.	No yellowish precipitate was obtained.	Absence of Potassium
Test for Sodium: 2 pinches of the substance was made into paste by using HCL and introduced into the blue flame of Bunsen burner.	No yellow colour flame was appeared.	Absence of Sodium
Test for Mercury: 2 ml of the extract was treated with 2 ml of sodium hydroxide solution.	Yellowish precipitate was obtained.	Absence of Mercury
Test for Arsenic 2 ml of the extract was treated with 2 ml of sodium hydroxide solution.	Brownish red precipitate was obtained.	Absence of Arsenic

Table: 7.4.4 Miscellaneous biochemical analysis

Test for Starch 2 ml of the extract was treated with weak iodine solution.	No blue colour was developed.	**Presence of Starch**
Test for reducing sugar 5 ml of Benedict's qualitative solution was taken in a test tube and allowed to boil for two minutes and added 8 to 10 drops of the extract and again boil it for 2 minutes, the colour was noted.	No brick red colour was developed.	Absence of Reducing sugar.
Test for alkaloids 2 ml of extract was treated with 2 ml of picric acid.	Yellow colour was developed.	**Presence of Alkaloid**
Test for Tannic acid 2 ml of extract was treated with 2 ml of ferric chloride solution.	Black colour Precipitate is not appeared.	Absence of Tannic acid.
Test for Unsaturated compounds To the 2 ml of extract 2 ml of potassium permanganate solution was added.	Potassium permanganate was not de-coloured.	Absence of Unsaturated compounds
Test for Amino acids 2 drops of the extract were placed on a filter paper and dried well.	No violet colour was developed.	Absence of Amino acids

Test for type of compound 2ml of the extract was treated 2ml of ferric chloridesolution.	No green colour was developed. No red colour was developed. No violet colour was developed. No blue colour was developed.	Absence of Oxyquinole epinephrine and pyrocatechol. Anti pyrine, Aliphatic amino acid and meconic acid absent. Apomorphine, Salicylate and Resorcinol are absent. Morphine, Phenol cresol and Hydro quinine are absent.

7.5 PESTICIDE RESIDUES ANALYSIS OF PANCHATHIKTA KIRUTHAM

Project ID : NRS/AS/0737/09/2021

Name : Dr.S.Mahespriya

Address : National Institute of Siddha,

Chennai, Tamil Nadu,India.

Sample –ID : PG

Parameter for analysis:

Orgnochlorine pesticides

Organophosphorus pesticides

Organo carbamates

Pyrethroids

Sample received : Postal

Extraction : Acetone and Toulene

Date of Analysis : 15/9/2021

Result of analysis : Test report attached

Extraction

Test sample were extracted with acetone and followed by homogenization for brief period. Further filtration was allowed and subsequent addition of acetone to the test mixture. Heating of the test sample was performed using a rotary evaporator at a temperature not exceeding 400c until the solvent has almost completely evaporated. To the residue add a few milliliters of toluene and heat again until the acetone was completely removed. Resultant residue was dissolved using toluene and filtered through membrane filter.

Table: 7.5.1 Test Result Analysis of the Sample Panchathikta kirutham

Pesticide Residue **I.Organo Chlorine Pesticides**	**Sample PG**	**AYUSH Limit (mg/kg)**
Alpha BHC	BQL	0.1mg/kg
Beta BHC	BQL	0.1mg/kg
Gamma BHC	BQL	0.1mg/kg
Delta BHC	BQL	0.1mg/kg
DDT	BQL	1mg/kg
Endosulphan	BQL	3mg/kg
II.Organo Phosphorus Pesticides		
Malathion	BQL	1mg/kg
Chlorpyriphos	BQL	0.2 mg/kg
Dichlorovos	BQL	1mg/kg
III. Organo carbamates		
Carbofuran	BQL	0.1mg/kg
III.Pyrethroid		
Cypermethrin	BQL	1mg/kg

BQL- Below Quantification Limit

Result: The result showed that there were no traces of pesticides residues such as Orgnochlorine pesticides, Organophosphorus pesticides, Organo carbamates, Pyrethroids for analysis.

7. 6 AFLATOXIN ASSAY BY PANCHATHIKTA KIRUTHAM

Project ID : NRS/AS/0737/09/2021

Name : Dr.S.Mahespriya

Address : National Institute of Siddha,

Chennai, Tamil Nadu,India.

Sample –ID : PG

Parameter for analysis:

Aflatoxin Assay by TLC (B1, B2, G1, G2)

Sample received : Postal

Extraction : Acetone and Toulene

Date of Analysis : 15/9/2021

Result of analysis : Test report attached

Standard

Aflatoxin B1

Aflatoxin B2

Aflatoxin G1

Aflatoxin G2

Solvent

Standard samples was dissolved in a mixture of chloroform and acetonitrile (9.8 : 0.2) to obtain a solution having concentrations of 0.5 µg per ml each of aflatoxin B1 and aflatoxin G1 and 0.1 µg per ml each of aflatoxin B2 and aflatoxin G2.

Procedure

Standard aflatoxin was applied on to the surface to pre coated TLC plate in the volume of 2.5 µL, 5 µL, 7.5 µL and 10 µL. Similarly, the test sample was placed and Allow the spots to dry and develop the chromatogram in an unsaturated chamber containing a solvent system consisting of a mixture of chloroform, acetone and isopropyl alcohol (85: 10: 5) until the solvent front has moved not less than 15 cm from the origin. Removed the plate from the developing chamber, marked the solvent from and allowed the plate to air-dry. Located the spots on the plate by examination under UV light at 365 nm.

Table :7.6.1 Aflatoxin specification

Aflatoxin	Sample PG	AYUSH Specification Limit
B1	Not Detected - Absent	0.5 ppm
B2	Not Detected - Absent	0.1 ppm
G1	Not Detected - Absent	0.5 ppm
G2	Not Detected - Absent	0.1 ppm

Result:

The results shown that there were no spots were being identified in the test sample loaded on TLC plates when compare to the standard which indicates that the sample were free from Aflatoxin B1, Aflatoxin B2, Aflatoxin G1, Aflatoxin G2.

7.7 HPTLC ANALYSIS OF PANCHATHIKTA KIRUTHAM

Project ID : NRS/AS/0737/09/2021

Name : Dr.S.Mahespriya

Address : National Institute of Siddha,

Chennai, Tamil Nadu,India.

Sample –ID : PG

Parameter for analysis:

HPTLC Analysis

Sample received : Postal

Instrument : CAMAG TLC SCANNER III

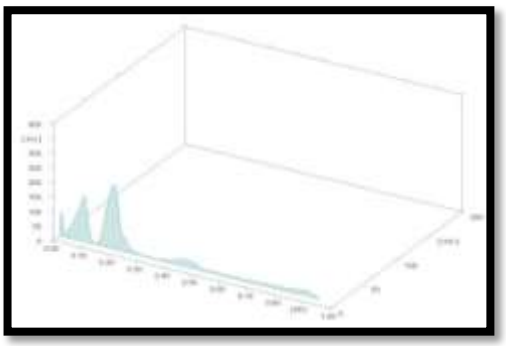
Mobile Phase : Chloroform: n-Butanol: Methanol: Water: Acetic Acid (4:1:1:0.5:0.5)

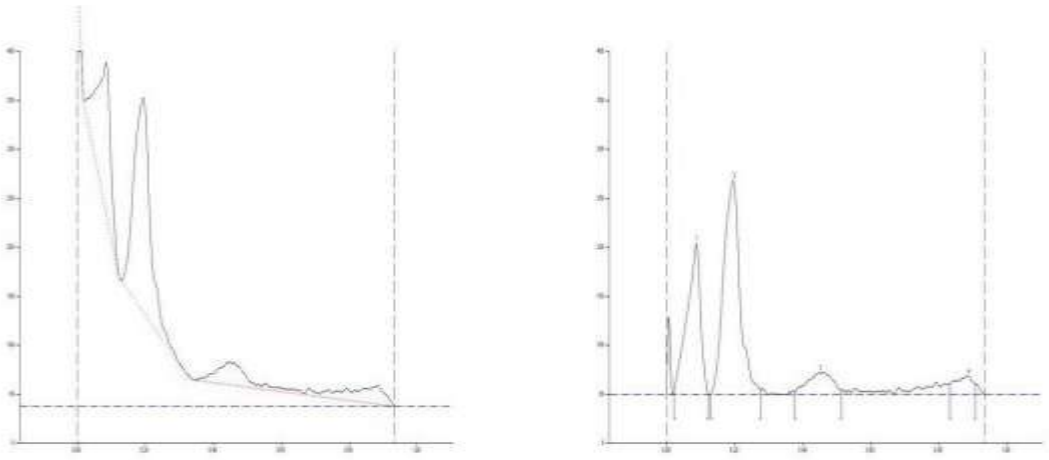
Analysis Type : Third Party Analysis

Date of Analysis : 30/09/2021

Result of analysis : Test report attached

TLC Visualization of PG at 366 nm 3D - Chromatogram





HPTLC finger printing of Sample PG

Peak Table

Peak	Start Rf	Start Height	Max Rf	Max Height	Max %	End Rf	End Height	Area	Area %
1	0.02	3.3	0.09	155.4	37.31	0.12	1.1	3319.2	31.46
2	0.13	0.7	0.20	219.0	52.60	0.28	5.5	5728.8	54.30
3	0.38	3.3	0.45	22.9	5.50	0.51	4.8	947.0	8.98
4	0.83	10.8	0.89	19.1	4.59	0.91	10.8	554.9	5.26

TLC Analysis

Test sample was subjected to thin layer chromatography (TLC) as per conventional one dimensional ascending method using silica gel 60F254, 7X6 cm (Merck) were cut with ordinary household scissors. Plate markings were made with soft pencil. Micro pipette were used to spot the sample for TLC applied sample volume 10-micro liter by using pipette at distance of 1 cm at 5 tracks. In the twin trough chamber with the specified solvent system after the run plates were dried and was observed using visible light Short-wave UV light 254nm and light long-wave UV light 365 nm

High Performance Thin Layer Chromatography Analysis

HPTLC method is a modern sophisticated and automated separation technique derived from TLC. Pre-coated HPTLC graded plates and auto sampler

was used to achieve precision, sensitive, significant separation both qualitatively and quantitatively. High performance thin layer chromatography (HPTLC) is a valuable quality assessment tool for the evaluation of botanical materials efficiently and cost effectively. HPTLC method offers high degree of selectivity, sensitivity and rapidity combined with single-step sample preparation. Thus this method can be conveniently adopted for routine quality control analysis. It provides chromatographic fingerprint of phytochemicals which is suitable for confirming the identity and purity of phytotherapeutics.

Chromatogram Development

It was carried out in CAMAG Twin Trough chambers. Sample elution was carried out according to the adsorption capability of the component to be analyzed. After elution, plates were taken out of the chamber and dried.

Scanning

Plates were scanned under UV at 366nm. The data obtained from scanning were brought into integration through CAMAG software. Chromatographic finger print was developed for the detection of phyto constituents present in each sample and their respective Rf values were tabulated.

REPORT:

HPTLC finger printing analysis of the sample revealed the presence of four prominent peaks corresponds to presence of four versatile phytocomponents present within it. Rf value of the peaks ranges from 0.02 to 0.83.

7.8 HEAVY METAL ANALYSIS BY AAS

STANDARD: HG, AS, PB AND CD – SIGMA

Project ID : NRS/AS/0737/09/2021

Name : Dr.S.Mahespriya

Address : National Institute of Siddha,

Chennai, Tamil Nadu,India.

Sample –ID : PG

Parameter for analysis:

Heavy Metal analysis by AAS

Sample received : In person

Instrument : Model: AA 240 Series HCl and HNO3

Analysis Type : Third Party Analysis

Date of Analysis : 24/09/2021

Result of analysis : Test report attached

Methodology

Atomic Absorption Spectrometry (AAS) is a very common and reliable technique for detecting metals and metalloids in environmental samples. The total heavy metal content of the sample was performed by Atomic Absorption Spectrometry (AAS) Model AA 240 Series. In order to determination the heavy metals such as mercury, arsenic, lead and cadmium concentrations in the test item.

Sample Digestion

Test sample was digested with 1mol/L HCl for determination of arsenic and mercury. Similarly, for the determination of lead and cadmium the sample were digested with 1mol/L of HNO3.

Standard reparation

As & Hg- 100 ppm sample in 1mol/L HCl Cd & Pb- 100 ppm sample in 1mol/L HNO3

Table: 7.8.1 Heavy Metal Analysis Report

Name of the Heavy Metal	Absorption MaxΛ max	Result Analysis	Maximum Limit
Lead	217.0 nm	0.14 PPM	10 ppm
Arsenic	193.7 nm	BDL	3 ppm
Cadmium	228.8 nm	BDL	0.3 ppm
Mercury	253.7 nm	BDL	1 ppm

BDL- Below Detection Limit

Report and Inference:

Results of the present investigation have clearly showed that the sample has no traces of heavy metals such as Arsenic, Mercury and Cadmium, whereas the sample showed the presence of Lead at 0.14 ppm.

7.9 TESTS FOR SPECIFIC PATHOGEN OF PANCHATHIKTA KIRUTHAM

Methodology

Test sample was directly inoculated in to the specific pathogen medium (EMB, DCC, Mannitol, Cetrimide) by pour plate method. The plates were incubated at 37^{o}C for 24 - 72h for observation. Presence of specific pathogen identified by their characteristic color with respect to pattern of colony formation in each differential media.

Detail of Specific Medium and their abbreviation

Organism	**Abbreviation**	**Medium**
E-coli	***EC***	***EMB Agar***
Salmonella	***SA***	***Deoxycholate agar***
Staphylococcus Aureus	***ST***	***Mannitol salt agar***
Pseudomonas Aeruginosa	***PS***	***Cetrimide Agar***

Observation

No growth was observed after incubation period which revealed the absence of specific pathogen.

Result

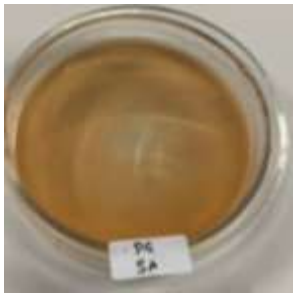
No growth / colonies were observed in any of the plates inoculated with the test sample.

Table: 7.9.1 Microbial growth report

Organism	**Specification**	**Result**	**Method**
E-coli	Absent	Absent	As per AYUSH specification
Salmonella	Absent	Absent	
Staphylococcus Aureus	Absent	Absent	
Pseudomonas Aeruginosa	Absent	Absent	

Culture plate with E-coli (EC) specific medium

Culture plate with Salmonella (SA) specific medium



Culture plate with Staphylococcus Aureus (ST) specific medium

Culture plate with Pseudomonas Aeruginosa (PS) specific medium

7.10 STERILITY TEST BY POUR PLATE METHOD OF PANCHATHIKTA KIRUTHAM

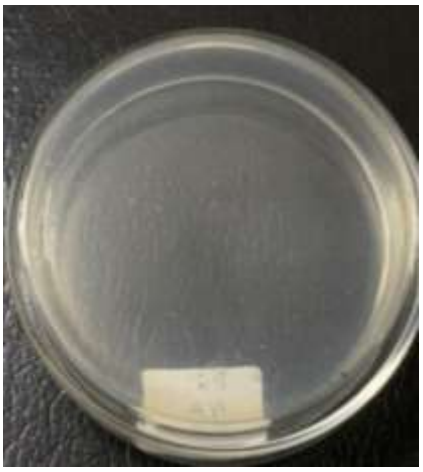
Objective

The pour plate techniques were adopted to determine the sterility of the product. Contaminated / un sterile sample (formulation) when come in contact with the nutrition rich medium it promotes the growth of the organism and after stipulated period of incubation the growth of the organism was identified by characteristic pattern of colonies. The colonies were referred to as Colony Forming Units (CFUs).

Methodology

Test sample was inoculated in sterile petri dish to which about 15 mL of molten agar 45^{o}C were added. Agar and sample were mixed thoroughly by tilting and swirling the dish. Agar was allowed to completely gel without disturbing it. (about 10 minutes). Plates were then inverted and incubated at 37^{o} C for 24-48 hours and further extended for 72 hrs for fungal growth observation. Grown colonies of organism was then counted and calculated for CFU.

Sterility test by pour plate method



Observation

No growth was observed after incubation period which revealed the absence of specific pathogen

Result

No growth / colonies was observed in any of the plates inoculates with the test sample.

Table: 7.10.1 Colony Forming Units

Test	**Result**	**Specification**	**As per AYUSH/WHO**
Total Bacterial Count	Absent	NMT 10^5CFU/g	As per AYUSH specification
Total Fungal Count	Absent	NMT 10^3CFU/g	

8. CLINICAL STUDIES

8.1 OBSERAVTION AND RESULTS

The title of the dissertation is study on Siddha Herbo mineral formulation Panchathikta girutham and Karunkozhi thylam in the treatment of Uthiravatha suronitham (Rheumatoid arthritis) on 30 patients in the OPD of Department of Maruthuvam, National Institute of Siddha, Tambaram sanatorium, Chennai-47. Results have been served the following criteria.

1. Gender distribution
2. Age distribution
3. Diet distribution
4. Marital status distribution
5. Family history distribution
6. Menstrual history distribution
7. Bowel habits distribution
8. Sleep disturbance distribution
9. Psychological status distribution
10. Socioeconomic status distribution
11. Reference of Thegi
12. Reference of Kaalam
13. Reference of Poripulangal
14. Reference of Kanmenthiriyam
15. Reference of Kosangal
16. Reference of Udal thathugal
17. Reference of Uyir thathugal
18. Reference of Envai thervugal
19. Reference of Naadi
20. Reference of Neikuri
21. Distribution of Universal pain scale
22. Distribution of Gradation of Movements
23. Distribution of EULAR criteria
24. Distribution of Improvement in clinical signs and symptoms

25. Distribution of ESR
26. Distribution of RA factor
27. Distribution of C- reactive protein
28. Distribution of Anti-CCP
29. Distribution of ASO titer

1. DISTRIBUTION OF CASES BY GENDER

TABLE: 1

S.NO	GENDER	NO.OF CASES	PERCENTAGE
1	MALE	1	3%
2	FEAMLE	29	97%

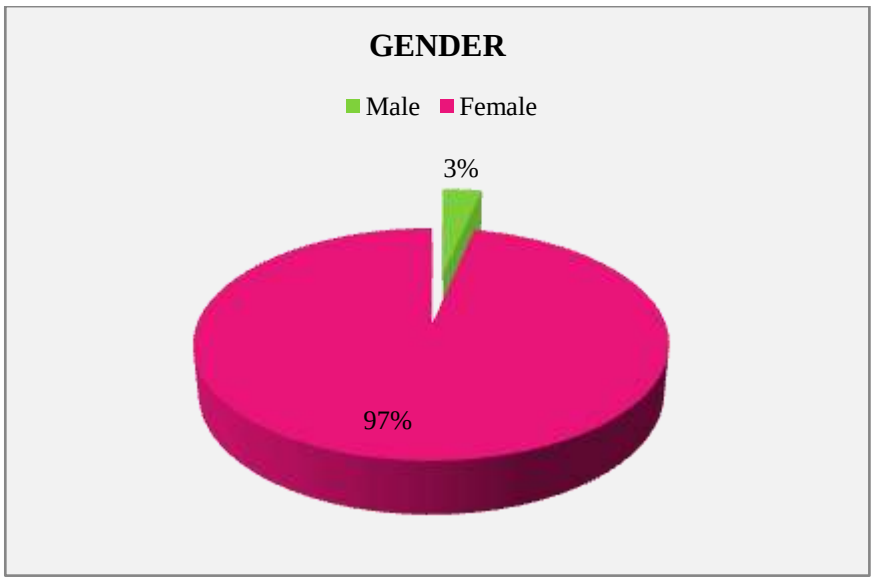


Figure: 1

Inference

30 patients of both sexes had selected for this study. Among them 29 cases (97%) were Females and 1case (3%) was male.

2. DISTRIBUTION OF CASES BY AGE

TABLE: 2

S.NO	AGE	NO.OF.CASES	PERCENTAGE
1	20-29	1	3%
2	30-39	10	34%
3	40-50	19	63%

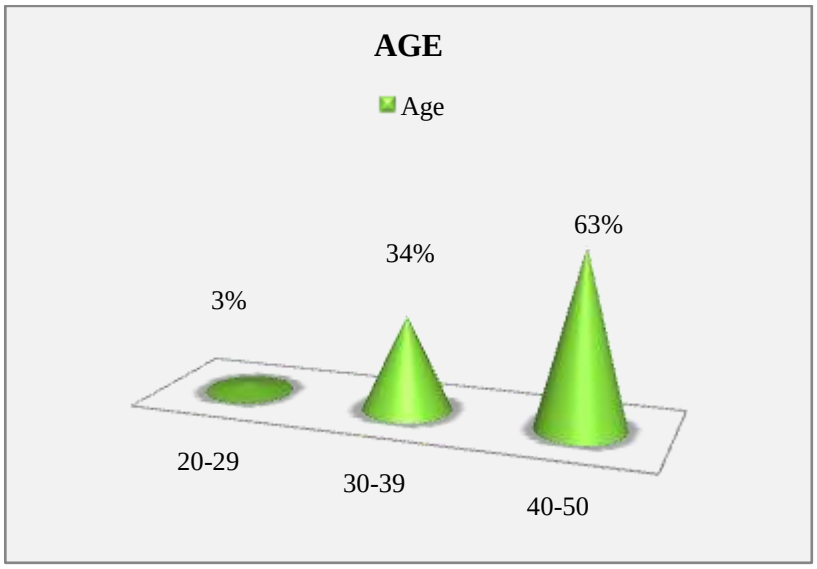


Figure: 2

Inferences

Out of 30 cases 1 (3%) patient was affected in 20-29 years, 10(34%) patients were affected in 30-39 years, 19(63%) patients were affected in 40-50 years.

3. DISTRIBUTION OF CASES BY DIET

TABLE: 3

S.NO	DIET	NO.OF.CASES	PERCENTAGE
1	VEGETARIAN	2	7%
2	NON VEGETARIAN	28	93%

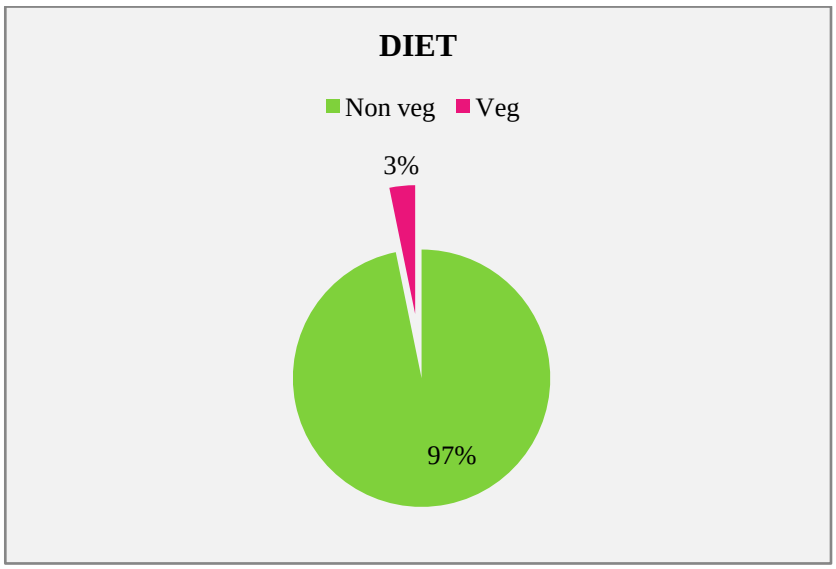


Figure: 3

Inference

Out of 30 cases, 28(93%) patients were Non vegetarians and 2(7%) patients were vegetarians.

4. DISTRIBUTION OF CASES BY MARITAL STATUS

TABLE: 4

S.NO	MARITALSTATUS	NO.OF.CASES	PERCENTAGE
1	MARRIED	29	97%
2	UNMARRIED	1	3%

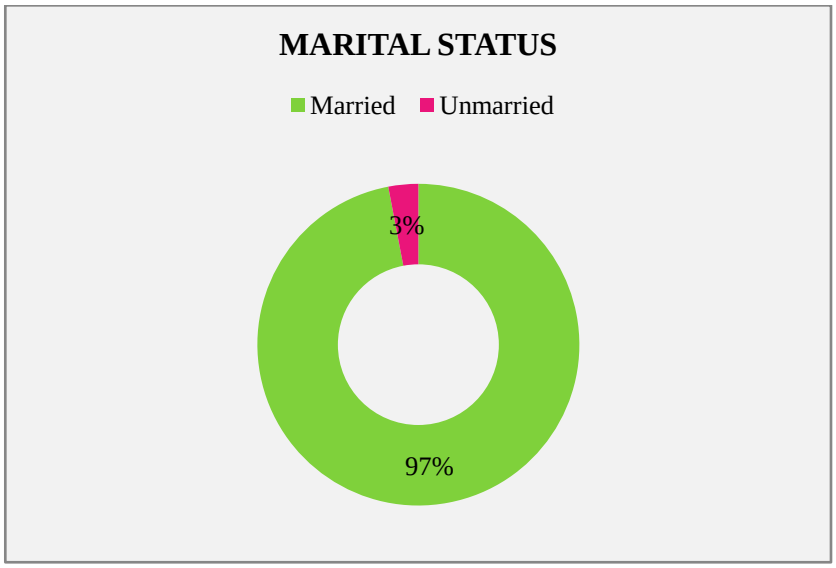


Figure:4

Inferences

Out of 30 cases, 29(97%) patients were married and 1(3%) patient was unmarried.

5. DISTRIBUTION OF CASES BY FAMILY HISTORY

TABLE: 5

S.NO	FAMILY H/O	NO.OF.CASES	PERCENTAGE
1	YES	7	23%
2	NO	23	77%

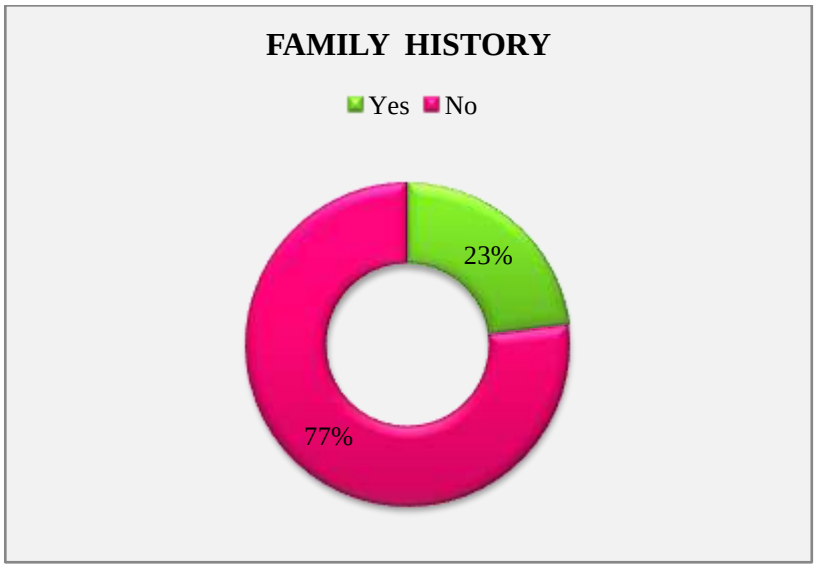


Figure: 5

Inference

Out of 30 patients, 23(77%) of cases had no relevant family history and 7(23%) of cases had a family history of Uthiravatha suronitham.

6. DISTRIBUTION OF CASES BY MENSTRUAL HISTORY

TABLE: 6

S.NO	MENSTURAL ISTORY	NO.OF. CASES	PERCENTAGE
1	REGULAR	20	67%
2	IRREGULAR	1	3%
3	MENOPAUSE	8	27%
4	NA	1	3%

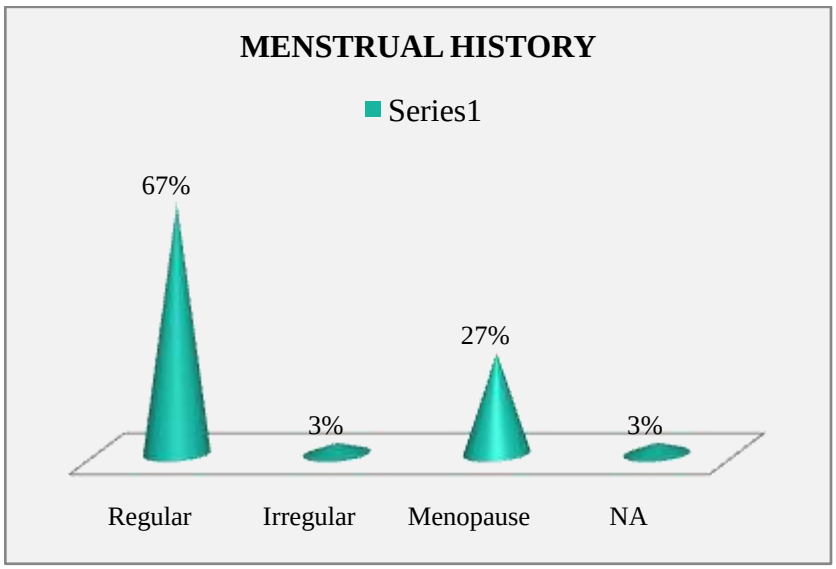


Figure: 6

Inference

Out of 29 cases, 20(67%) patients had regular menstrual cycle, 1(3%) patient had irregular menstruation, 8(27%) patients had attained menopause.

7. DISTRIBUTION OF CASES BY BOWEL HABITS

TABLE: 7

S.NO	BOWEL HABIT	NO.OF.CASES	PERCENTAGE
1	NORMAL	28	93%
2	ABNORMAL	2	7%

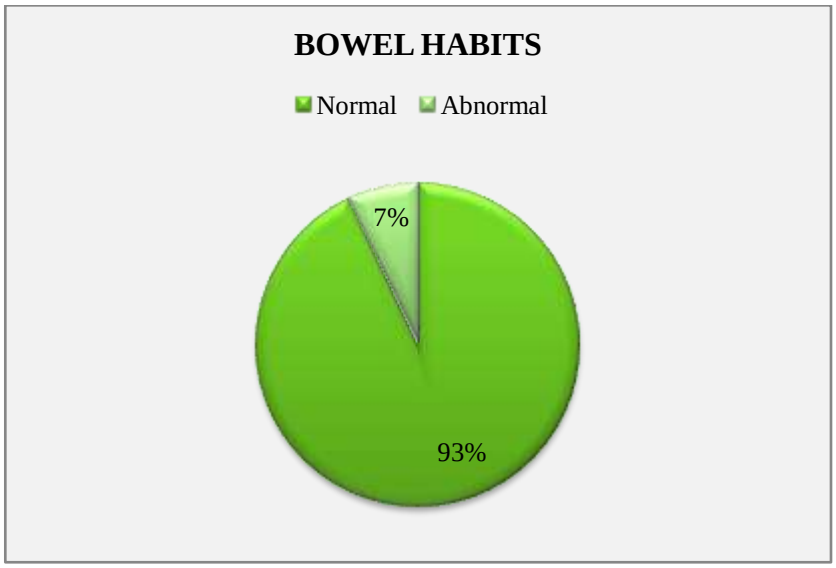


Figure: 7

Inference

Among the 30 cases, 2(7%) patients had an abnormal bowel habits, 28(93%) patients had normal bowel habits.

8. DISTRIBUTION OF CASES BY SLEEP DISTRUBANCES

TABLE: 8

S.NO	SLEEP DISTUBANCES	NO.OF.CASES	PERCENTAGE
1	YES	10	33%
2	NO	20	67%

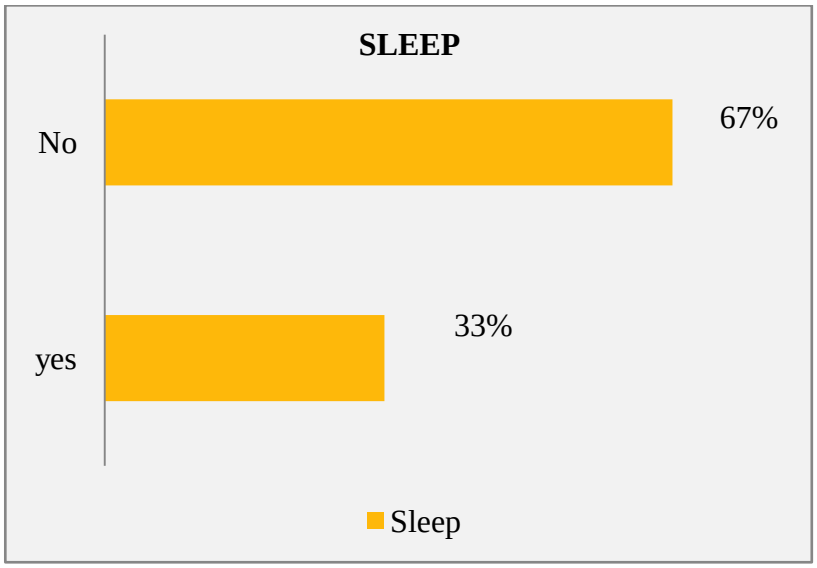


Figure: 8

Inference

Among the 30 cases, 10(33%) of cases had sleeping disturbances, 20(67%) of cases had no sleeping disturbances.

9. DISTRIBUTION OF CASES BY PSYCHOLOGICAL STATUS

TABLE: 9

S.NO	PSYCHOLOGICAL STATE	NO.OF.CASES	PERCENTAGE
1	NORMAL	23	77%
2	STRESS	0	0
3	ANXITEY	3	10%
4	DEPRESSION	4	13%

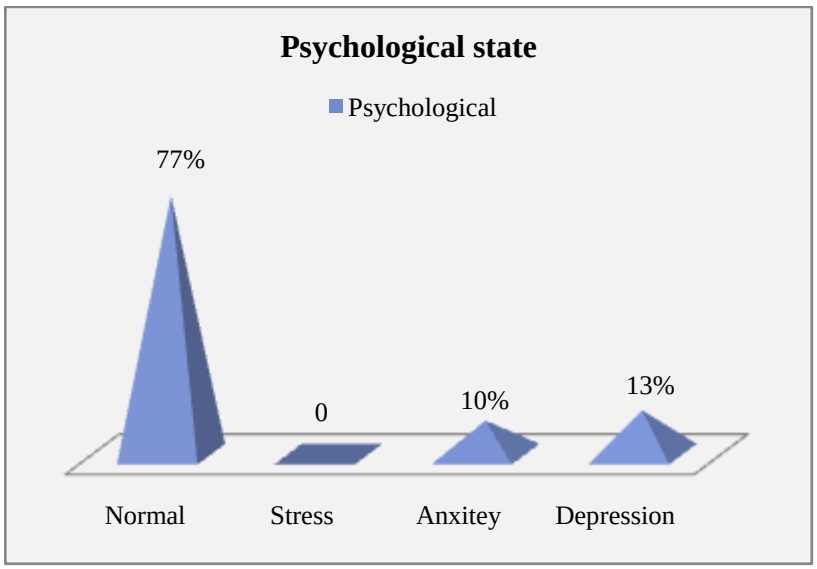


Figure: 9

Inference

Among the 30 cases, 23(77%) cases had a normal psychological status, Anxiety in 3(10%) cases, Depression in 4(13%) cases with the Uthiravatha suronitham

10. DISTRIBUTION OF CASES BY SOCIO ECONOMICAL STATUS

TABLE: 10

S.NO	SOCIO ECONOMIC	NO.OF.CASE	PERCENTAGE
1	HIGHER	3	10%
2	MIDDLE	20	67%
3	LOWER	7	23%

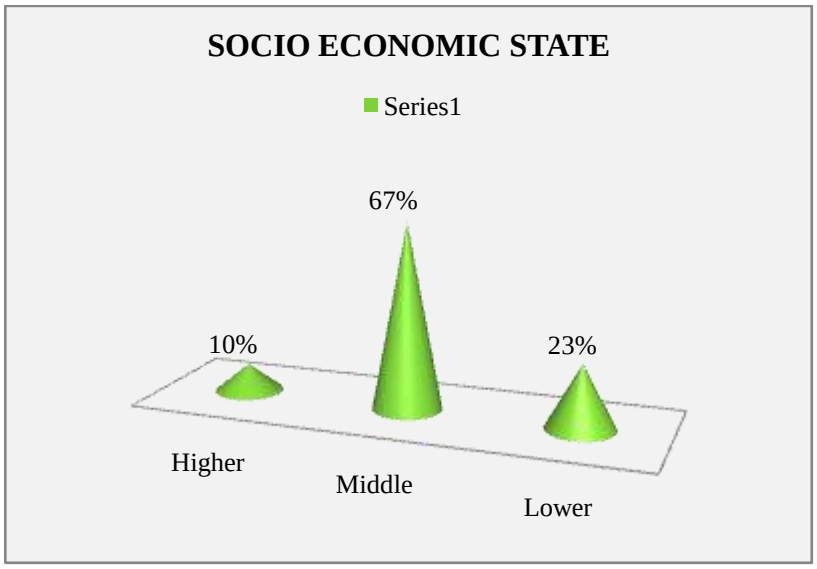


Figure: 10

Inference

Among the 30 cases, 3(10%) cases were in high socio economic state, 20(67%) cases were middle and 7(23%) cases were lower socio economic status.

11. DISTRIBUTION OF CASES BY THEGI

TABLE: 11

S.NO	THEGI	NO.OF.CASES	PERCENTAGE
1	VATHA THEGI	15	50%
2	PITHA THEGI	4	13.3%
3	KABA THEGI	11	36.6%

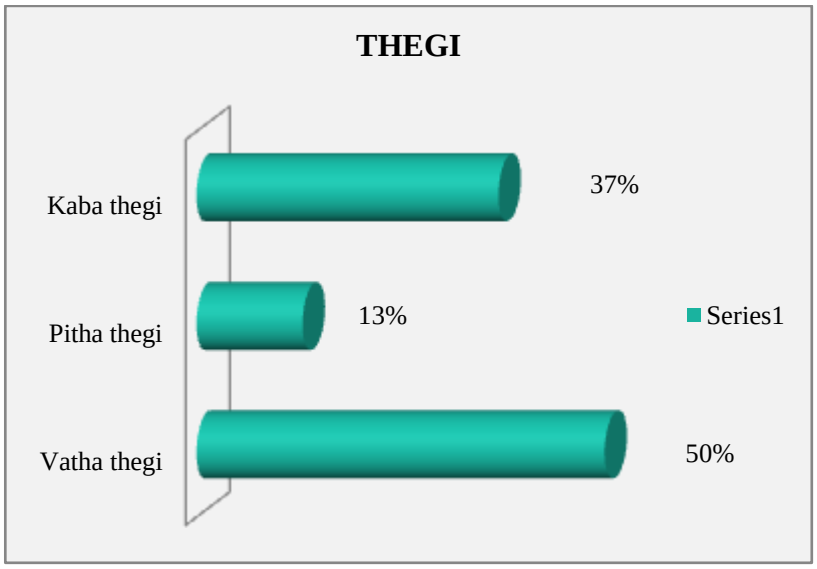


Figure: 11

Inference

Among the 30 cases, Vatha thegi were 15(50%), Pitha thegi were 4(13.3%), Kaba thegi were 11(36.6%) with Uthiravatha suronitham disease.

12. DISTRIBUTION OF CASES BY KAALAM

TABLE: 12

S.NO	KAALAM	NO.OF.CASES	PERCENTAGE
1	KAAR KAALAM	2	7%
2	KOOTHIR KAALAM	10	33%
3	MUNPANI KAALAM	14	47%
4	PINPANI KAALAM	2	7%
5	ILAVENIL KAALAM	1	3%
6	MUTHUVENIL KAALAM	1	3%

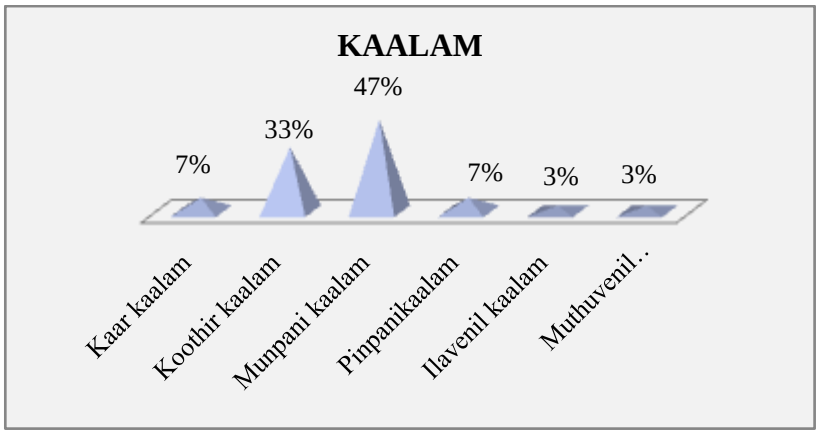


Figure: 12

Inference

Among the 30 cases, 14(47%) cases were reported in Munpani kaalam, 10(33%) cases were reported in Koothir kaalam, 2(7%) cases were reported in Kaar Kaalam & Pinpani Kaalam, and 1 (3%) case was reported in Ilavenil Kaalam &Muthuvenil Kaalam.

13. DISTRIBUTION OF CASES BY PORIPULANGAL

TABLE: 13

S.NO	PORIPULANGAL	NO.OF.CASES AFFECTED		PERCENTAGE %	
		BT	AT	BT	AT
1	MEI	30	26	100%	86.6%
2	VAI	0	0	0%	0%
3	KANN	0	0	0%	0%
4	MOOKKU	0	0	0%	0%
5	SEVI	0	0	0%	0%

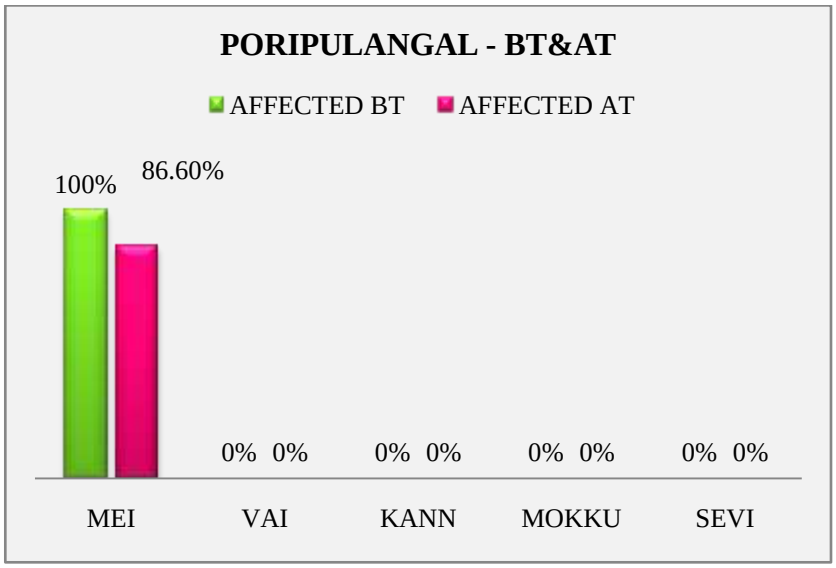


Figure: 13

Inference

Among the 30 cases, before treatment 30(100%) cases were affected with Mei due to pain in all minor and major joints. Vai, Kann, Mookku ,Sevi were not affected. Cases improved after treatment, 26(86.6%) case were affected with Mei.

14. DISTRIBUTION OF CASES BY KANMENDRIYAM

TABLE: 14

S.NO	KANMENDRIYAM	NO.OF.CASES AFFECTED		PERCENTAGE%	
		BT	AT	BT	AT
1	KAAI	30	19	100%	63.3%
2	KAAL	30	28	100%	93.3%
3	VAI	0	0	0%	0%
4	ERUVAI	0	0	0%	0%
5	KARUVAI	0	0	0%	0%

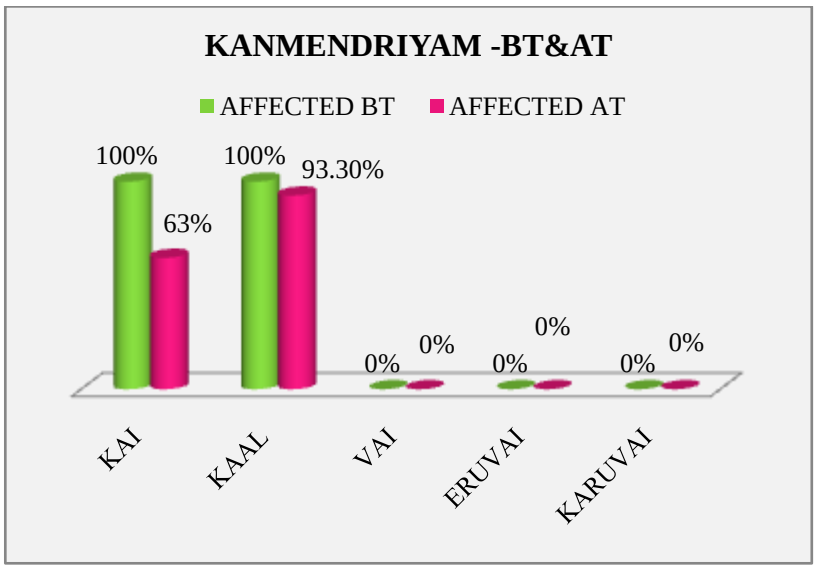


Figure: 14

Inference

Among the 30 cases before treatment 30(100%) cases were affected in Kai and Kaal due to pain in the upper limb and lower limb joints. Cases improved after the treatment, 19(63.3%) of cases were affected in Kai, 28(93.3%) in Kaal.

15. DISTRIBUTION OF CASES BY KOSANGAL

TABLE: 15

S.NO	KOSANGAL	NO.OF.CASES AFFECTED		PERCENTAGE%	
		BT	AT	BT	AT
1	ANNAMAYA KOSAM	7	0	23%	0%
2	PRANAMAYA KOSAM	1	1	3.3%	3.3%
3	MANOMAYA KOSAM	8	2	26.6%	6.6%
4	VIGNANAMAYA KOSAM	30	26	100%	86.6%
5	ANANTHAMAYA KOSAM	0	0	0%	0%

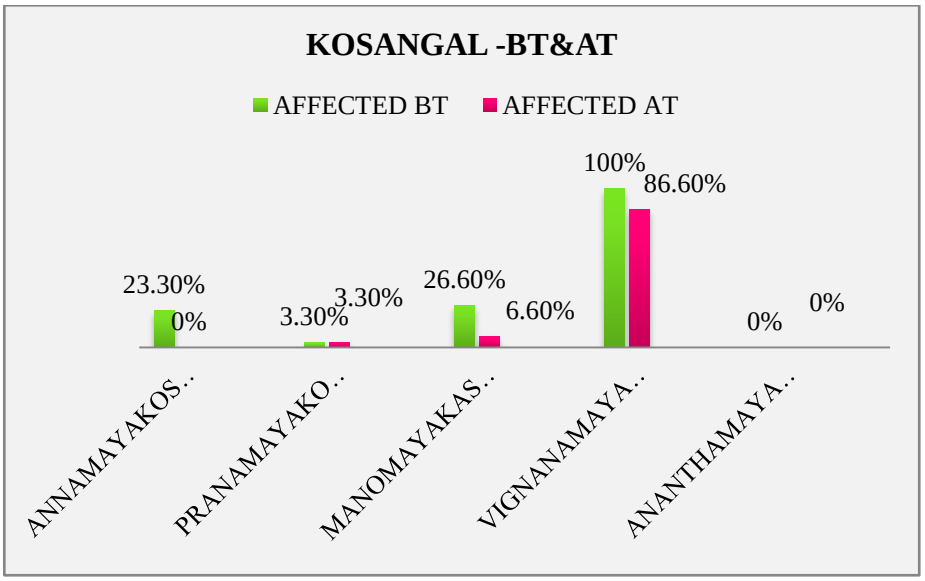


Figure: 15

Inference

Among the 30 cases, 100% of cases were affected in Vignanamaya kosam due to pain and restricted movements in affected joints, 26.6% in Manomaya Kosam due to mental depression and sleeplessness, 23% in Annamaya Kosam due to loss of appetite, 3.3% in Pranamaya kosam due to difficulty in breathing.

Cases improved after treatment, 86.6% cases were affected with Vignamaya Kosam, 6.6%of cases were affected in Manomaya kosam, and 3.3% of cases were affected in Pranamaya Kosam. Ananthamaya Kosam was not affected before and after treatment.

16. DISTRIBUTION OF CASES BY UDAL THAATHUGAL

TABLE: 16

S.NO	UDAL THATHUGAL	NO.OF.CASES		PERCENTAGE%	
		BT	AT	BT	AT
1	SAARAM	30	4	100%	13%
2	SENNEER	30	5	100%	17%
3	OON	30	17	100%	57%
4	KOZHUPPU	30	27	100%	90%
5	ENBU	28	27	93%	90%
6	MOOLAI	23	23	77%	77%
7	SUKKILAM/ SURONITHAM	0	0	0%	0%

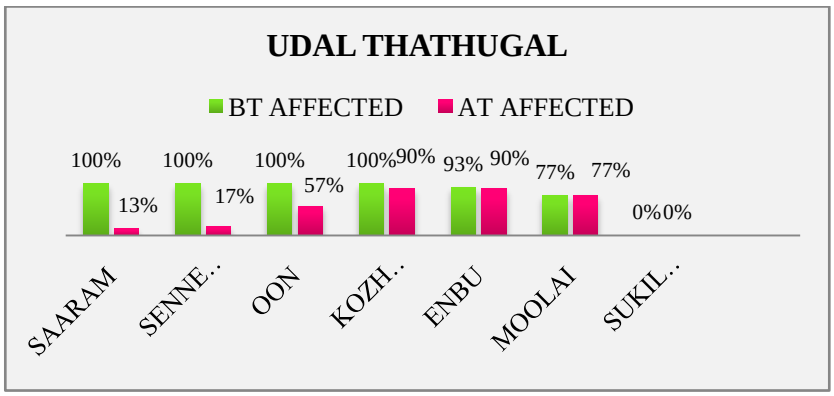


Figure: 16

Inference

Among the 30 cases, before treatment 100% of cases were affected in Saaram, Senneer, Oon ,Kozhuppu due to pain, swelling, tenderness and restricted movements in all minor and major joints, 93% of cases were affected by Enbu due to swelling and restricted movements in affected joints ,77% of cases were affected by Moolai due to swelling in the joints.

Cases were improved after treatment, 13% of cases were affected in Saaram, 17% of cases were affected in Senneer, 57% of cases were affected in Oon, 90% of cases were affected in Kozhuppu and Enbu, and 77% of cases were affected in Moolai. Sukilam/suronitham was not affected before and after treatment.

17. DISTRIBUTION OF CASES BY UYIR THAATHUKKAL – VATHAM

TABLE: 17

S.NO	VATHAM	NO.OF.CASES AFFECTED		PERCENTAGE%	
		BT	AT	BT	AT
1	PRAANAN	1	1	3%	3%
2	ABAANAN	1	0	3%	0%
3	SAMAANAN	30	27	100%	90%
4	UDHAANAN	1	0	3%	0%
5	VIYAANAN	30	27	100%	90%
6	NAGAN	0	0	0%	0%
7	KOORMAN	6	0	20%	0%
8	KIRUKARAN	13	0	43%	0%
9	DEVATHATHAN	26	4	87%	13%
10	DHANANJEYAN	0%	0	0%	0%

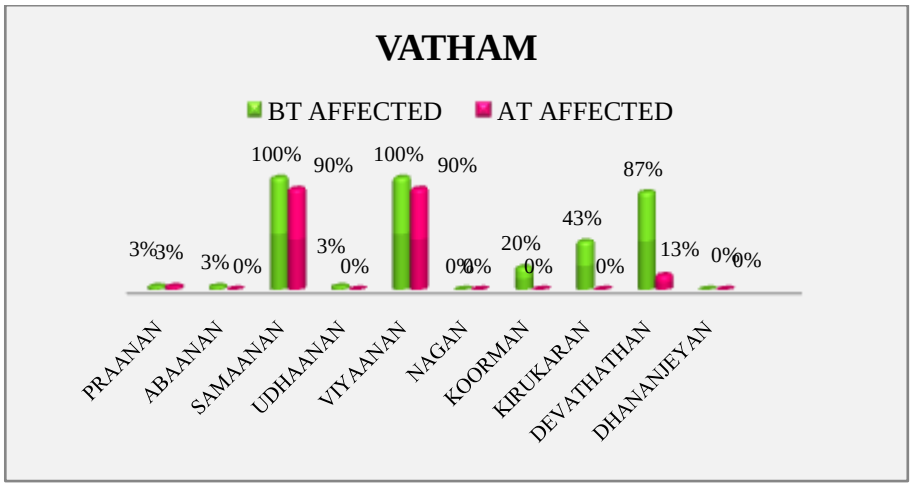


Figure: 17

Inference

Among the 30 cases, before treatment 3% of cases were affected by Praanan, Abaanan and Udhaanan due to breathing difficulty, constipation and loss of appetite.100% of cases were affected by Samaanan and Viyaanan due to pain in all mionor and major joints, 20% of case were affected by Koorman due to increased yawning, 43% of cases were affected by Kirukaran due to loss of appetite, 87% of cases were affected by Devathathan due to lethargy,constipation.

Cases were improved after treatment, 3% of cases were affected in Praanan, 90% in Samaanan and Viyaanan, 13 % in Devathathan.

18. DISTRIBUTION OF CASES BY UYIR THAATHUKKAL - PITHAM

TABLE: 18

S.NO	PITHAM	NO.OF.CASES AFFECTED		PERCENTAGE%	
		BT	AT	BT	AT
1	ANALAGAM	7	0	23.3%	0%
2	RANJAGAM	9	3	30%	10%
3	SAATHAGAM	30	18	100%	60%
4	PRASAKAM	1	0	3.3%	0%
5	AALOSAGAM	0	0	0%	0%

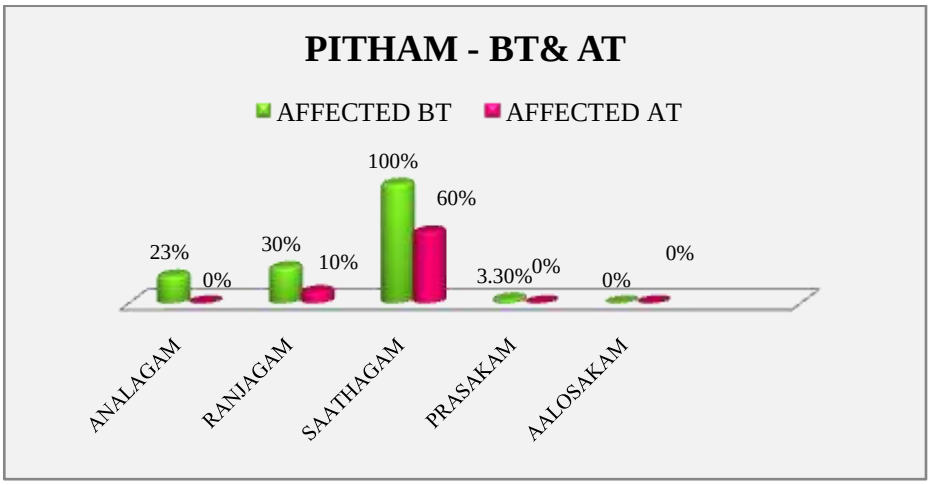


Figure: 18

Inference

Among the 30 cases, before treatment 23.3% of cases were affected in Analpitham due to indigestion, 30% of cases were affected with Ranjaga pitham due to pallor and lethargy, 100% of cases were affected in Saathaga pitham pain and restricted movements in affected joints, 3.3% of cases were affected with Prasaka pitham redness of affected joints.

Cases were improved after treatment, 10% of cases were affected in Ranjaga pitham, and 60% cases were affected with Saathaga pitham. Aalosaga pitham were affected before and after treatment.

19. DISTRIBUTION OF CASES BY UYIR THAATHUKKAL- IYYAM

TABLE: 19

S.NO	IYYAM	NO.OF.CASES AFFECTED		PERCENTAGE%	
		BT	AT	BT	AT
1	AVALAMBAGAM	30	24	100%	80%
2	KILETHAGAM	1	0	3.3%	0%
3	POTHAGAM	0	0	0%	0%
4	THARPAGAM	0	0	0%	0%
5	SANTHIGAM	30	24	100%	80%

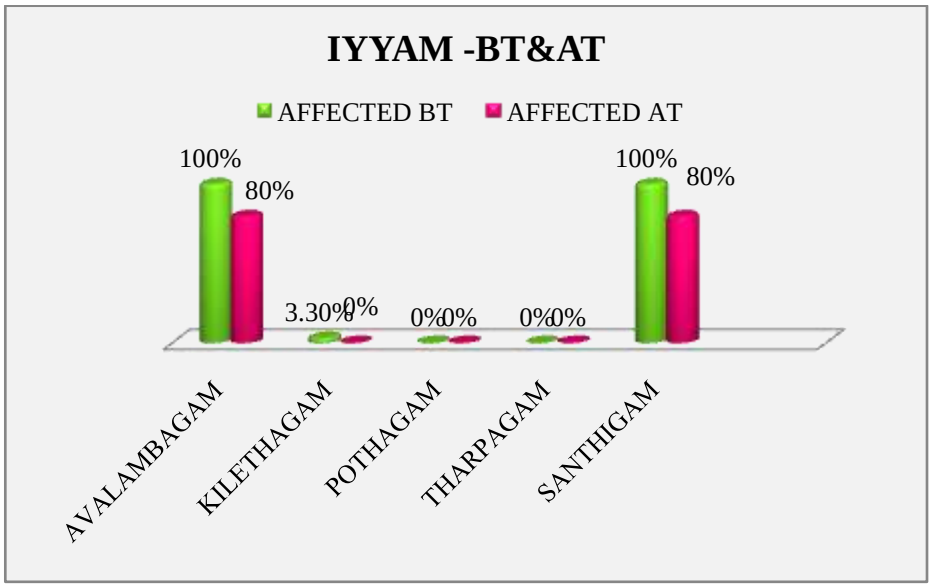


Figure: 19

Inference

Among the 30 cases, before treatment 100% of cases were affected by Avalambagam and Santhigam due to pain, swelling, tenderness and restricted movements in joints, 3.3% of cases were affected with Kilethagam due to loss of appetite.

Cases were improved after treatment 80% of cases were affected with Avalambagam and Santhigam. Pothagam and Tharbagam were not affected before and after treatment.

20. DISTRIBUTION OF CASES BY ENVAGAI THERVUGAL –NAADI

TABLE: 20

S.NO	NAADI	NO.OF.CASES AFFECTED		PERCENTAGE%	
		BT	AT	BT	AT
1	VATHA PITHAM	13	5	43.3%	16.6%
2	VATHA KABAM	2	8	6.6%	26.6%
3	PITHA VATHAM	9	11	30%	36.6%
4	PITHA KABAM	3	4	10%	13.3%
5	KABA VATHAM	2	2	6.6%	6.6%
6	KABA PITHAM	1	0	3.3%	0%

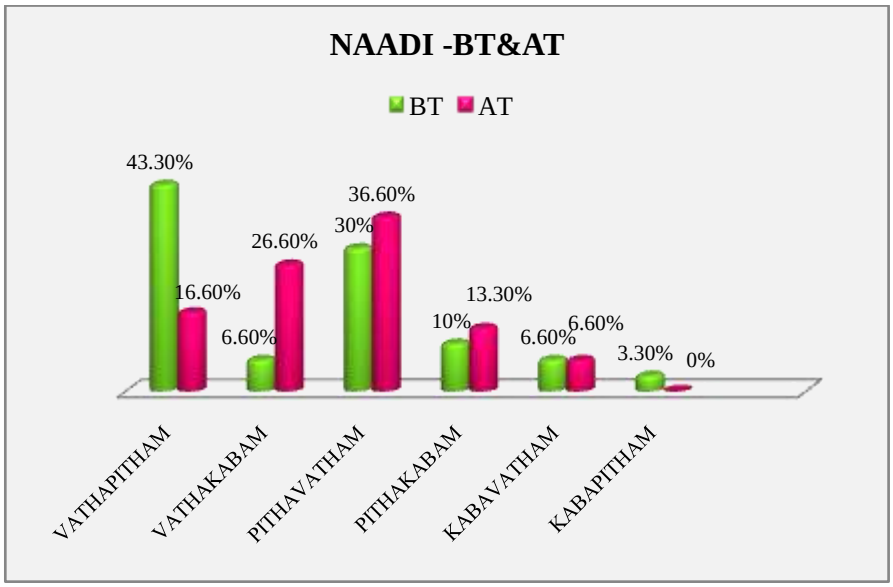


Figure: 20

Inference

Among the 30 cases, before treatment 43.3% of cases had Vatha pitha naadi, 6.6% of cases had Vatha kaba naadi and Kaba vatha naadi, 30% of cases had Pitha vatha naadi, 10% of cases had Pithakaba naadi, and 3.3% of case had Kaba pitha naadi.

After treatment 16.6% of cases had naadi nadai Vatha pitham, 26.6% of cases had Vatha pitha naadi, 36.6% of cases had Pitha vatha naadi, and 13.3% of cases had Pitha kaba naadi, 6.6% of cases had Kaba vatha naadi.

21. DISTRIBUTION OF CASES BY ENVAGAI THERVUGAL

TABLE: 21

S.NO	ENAVAI THERVU	BEFORE TRAETMENT AFFECTED %	AFTER TREATMENT AFFECTED %
1	NAA	20%	13.3%
2	NIRAM	0%	0%
3	MOZHI	0%	0%
4	VIZHI	16.6%	16.6%
5	SPARISAM	30%	16.6%
6	MALAM	10%	0%
7	MOOTHIRAM	0%	0%

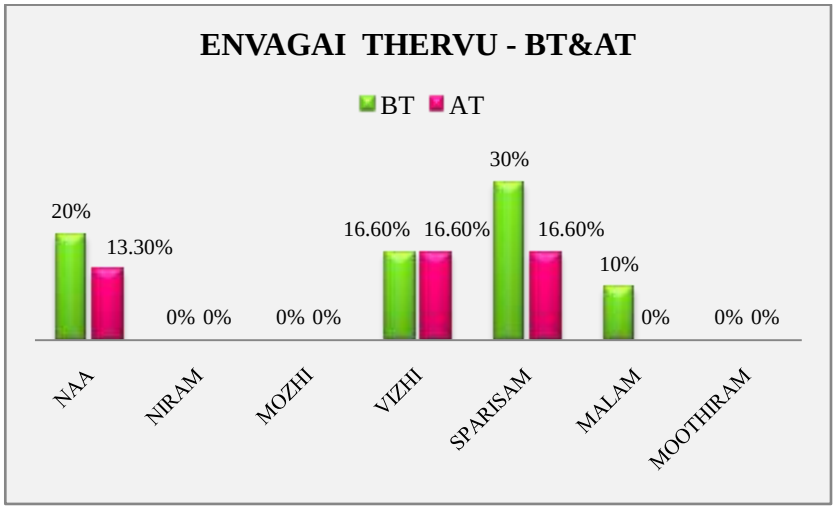


Figure: 21

Inference

Among the 30 cases, before treatment 20% of cases were affected by Naa due to coated tongue, pallor, dryness, 16.6% of cases were affected by Vizhi due to pallor, 30% of cases were affected by Sparisam due to swelling in joints with local heat, and 10% of cases were affected by Maalam due to constipation.

Cases were improved after treatment 13.3% of cases affected with Naa, 16.6% of cases were affected with Sparisam. Niram, Mozhi, Moothiram were not affected before and after treatment. No improvement was observed in Vizhi.

22. DISTRIBUTION OF CASES BY ENVAGAI THERVUGAL - NEIKURI

TABLE: 22

S.NO	NEIKURI	NO.OF.CASES AFFECTED		PERCENTAGE%	
		BT	AT	BT	AT
1	SNAKELIKE PATTERN	5	19	16.6%	63%
2	RING PATTERN	12	9	40%	30%
3	PEARLBEAD PATTERN	13	2	43%	6.6%

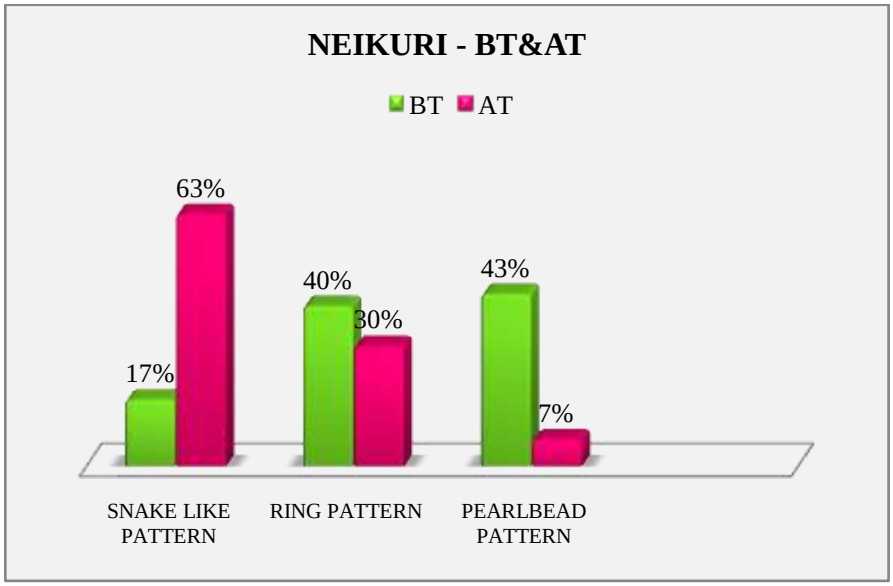


Figure: 22

Inference

Among the 30 cases, before treatment 16.6% of cases had neikuri of Snake like pattern, 40% of cases had Ring pattern, 43% of cases had Pearlbead pattern.

After treatment 63% of cases had Snake like pattern, 30% of cases had Ring pattern, 6.6% of cases had Peal bead pattern.

23. DISTRIBUTION OF CASES BY UNIVERSAL PAIN SCALE

TABLE: 23

S.NO	PAIN SCORE	NO.OF.CASES AFFECTED		NO.OF.CASES AFFECTED	
		BT	%	AT	%
1	SEVERE PAIN	9	30%	0	0%
2	MODERATE PAIN	20	66.6%	4	13.3%
3	MILD PAIN	1	3.3%	21	70%
4	NO PAIN	0	0%	5	16.6%

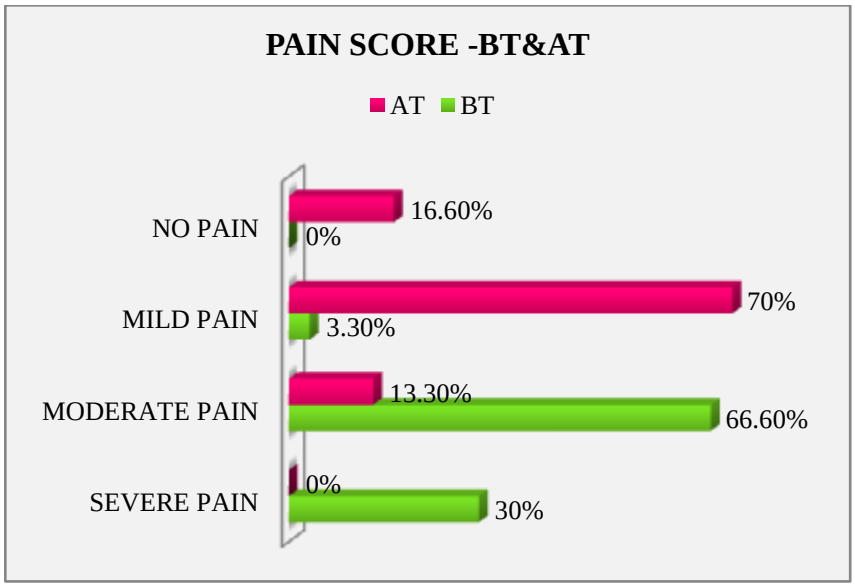


Figure: 23

Inference

Out of 30 cases, before treatment 9 (30%) cases had severe pain, 66.6% of cases had moderate pain, and 1 (3.3%) case had mild pain in all minor and major joints.

After treatment, pain completely reduced in 5 (16.6%) cases, 21(70%) cases had mild pain and 4 (13.3%) cases had moderate pain.

24. DISTRIBUTION OF CASES BY GRADATION OF MOVEMENTS

TABLE: 24

S.NO	GRADATION OF MOVEMENT	NO.OF.CASES AFFECTED		NO.OF.CASES AFFETED	
		BT	%	AT	%
1	GRADE IV	2	6.6%	0	0%
2	GRADE III	25	83.3%	1	3.3%
3	GRADE II	3	10%	22	73.3%
4	GRADE I	0	0%	7	23.3%

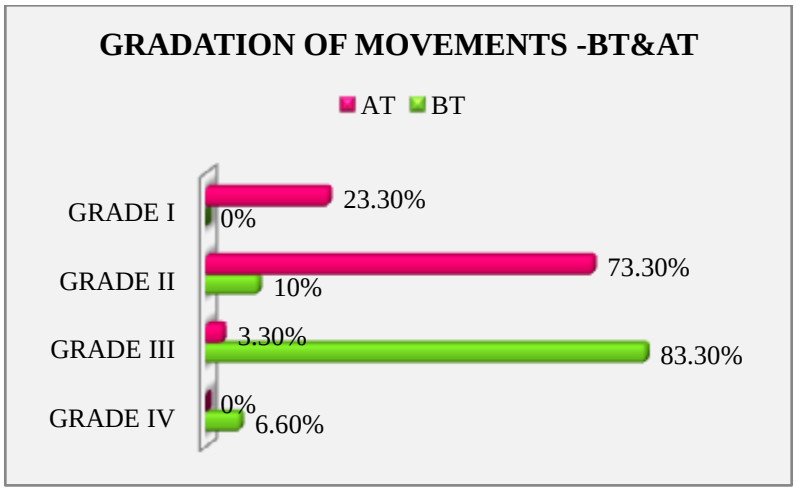


Figure :24

Inference

Out of 30 cases, before treatment 2(6.6%) cases were presented in Grade IV due to severe pain, 25(83.3%) cases were presented in Grade III due to moderate restricted movements, 3(10%) cases were presented in Grade II due to mild restricted movements .

After treatment 7(23.3%) cases were in Grade I, 22(73.3%) cases were presented in Grade II, 1(3.3%) case was presented in Grade III.

25. DISTRIBUTION OF CASES BY EULAR CRITERIA

TABLE: 25

EULAR SCORE	NO.OF.CASES AFFECTED		NO.OF.CASES AFFECTED	
	BT	%	AT	%
≥6	30	100%	13	43.3%
≤ 6	0	0%	17	56.6%

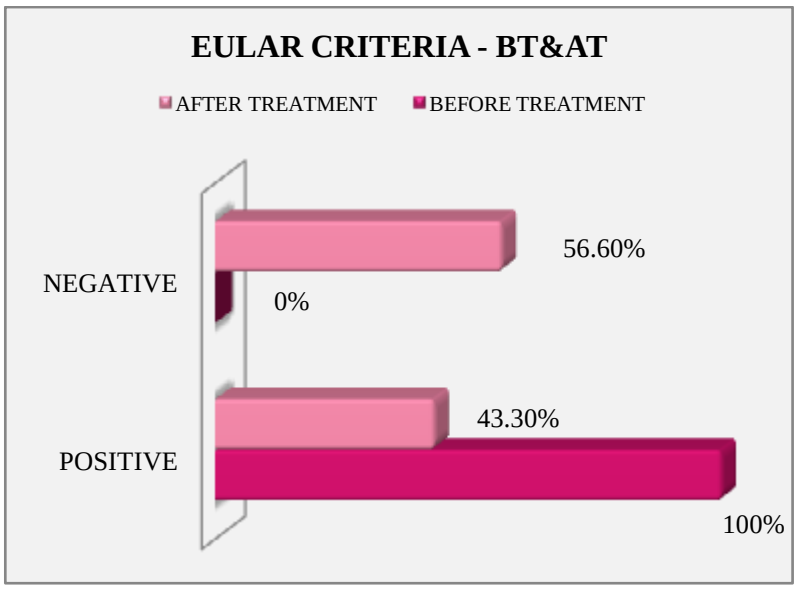


Figure: 25

Inference

Before treatment, 30 (100%) cases had positive ELUAR score (i.e.≥ 6).

After treatment, it was negative for 17 (56.6%) of the cases, remaining 13(43.3%) of the cases were found in positive category.

26. DISTRIBUTION OF CASES BY CLINICAL SYMPTOMS

TABLE: 26

CLINICAL FEATURES	BEFORE TREATMENT	AFTER TREATMENT %		
		PRESENT	REDUCED	ABSENT
PAIN	30(100%)	2 (6.6%)	24 (80%)	4 (13.3%)
SWELLING	27(90%)	1(3.3%)	18 (60%)	8 (26.6%)
TENDERNESS	30(100%)	0	21(70%)	9(30%)
MORNING STIFFNESS	30(100%)	1(3.3%)	23(76.6%)	6 (20%)
LOCAL HEAT	25(83.3%)	1(3.3%)	-	24 (80%)
RESTRICTION OF MOVEMENTS	30(100%)	1 (3.3%)	25 (83.3%)	4(13.3%)

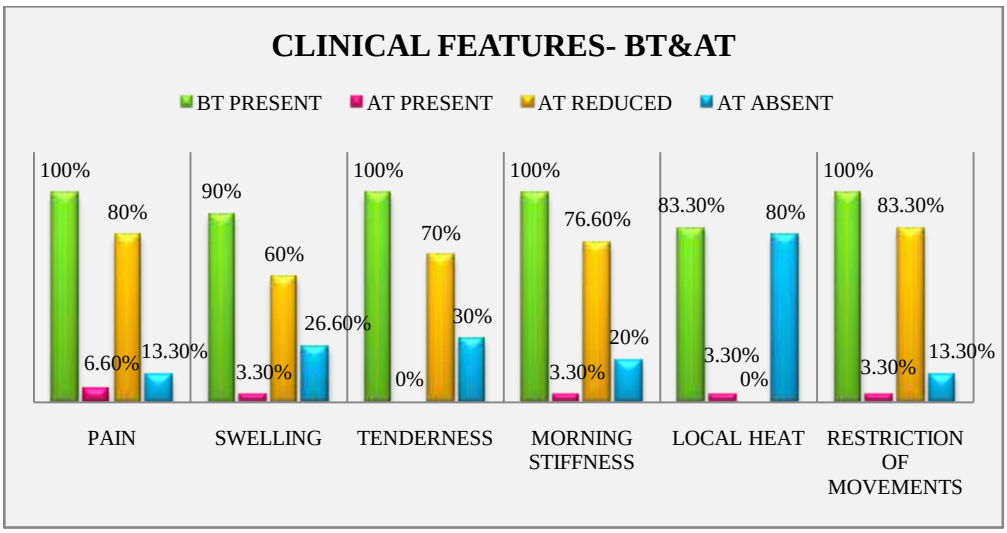


Figure: 26

Inferences

Before treatment, pain was noted in 30(100%) cases. After treatment, pain was reduced in 24(80%) cases, pain was absent in 4(13.3%) cases, pain is present in 2(6.6%) cases.

Before treatment swelling was noted in 27(90%) cases. After treatment, swelling was reduced in 18(60%) cases, absent in 8(26.6%) cases, swelling present in 1(3.3%) case.

Before treatment, tenderness was noted in 30(100%) of the cases. After treatment tenderness get reduced to 21(70%) of the cases, absent in 9(30%) of the cases.

Before treatment morning stiffness was noted in 30(100%) of the cases. After treatment it get reduced to 23(76.6%) of the cases, absent in 6(20%) of the cases, present in 1(3.3%) of the case.

Before treatment local heat was noted in 25(83.3%) of the cases. After treatment it was absent in 24(80%) of the case, present in 1(3.3%) of the case.

Before treatment restriction movement was noted in 30(100%) of the cases. After treatment it get reduced in 25(83.3%) of the cases, absent in 4(13.3%) of the cases, present in 1(3.3%) of the case.

27. DISTRIBUTION OF CASES BY ESR

TABLE: 27

ESR	BEFORE TREATMENT	AFTER TREATMENT
NORMAL	2 (6.6%)	10 (30%)
INCREASED	28 (93.3%)	-
REDUCED	-	20 (70%)

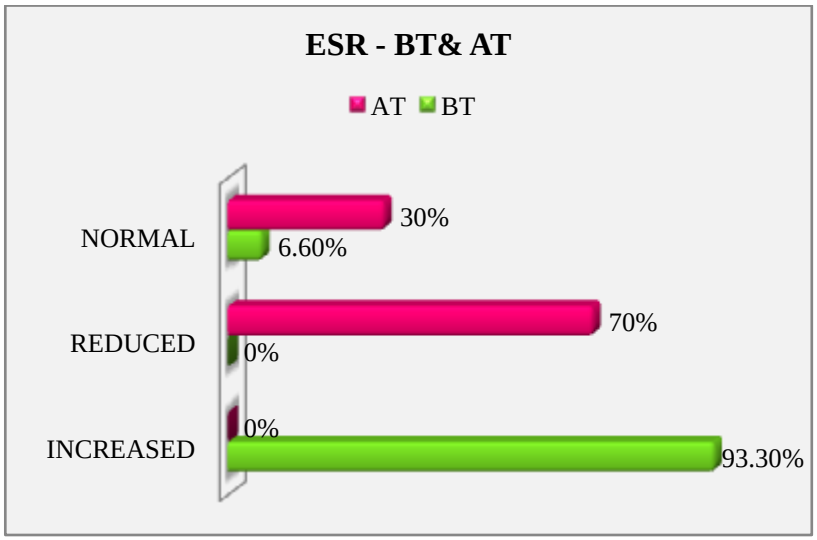


Figure: 27

Inference

Among the 30 cases, before treatment ESR increased in 28 (93.3%) cases and 2(6.6%) cases had normal ESR values.

After treatment in 20(70%) cases ESR reduced, 10(30%) cases had Normal ESR values.

28. DISTRIBUTION OF CASES BY RA FACTOR BEFORE TREATMENT

TABLE: 28

RA FACTOR	NO. OF.CASES	PERCENTAGE%
NEGATIVE	3	10%
POSITIVE	27	90%

29. DISTRIBUTION OF CASES BY RA FACTOR AFTER TREATMENT

TABLE: 29

RA FACTOR	NO. OF.CASES	PERCENTAGE%
NEGATIVE	11	36.6%
REDUCED	12	40%
INCREASED	7	23.%

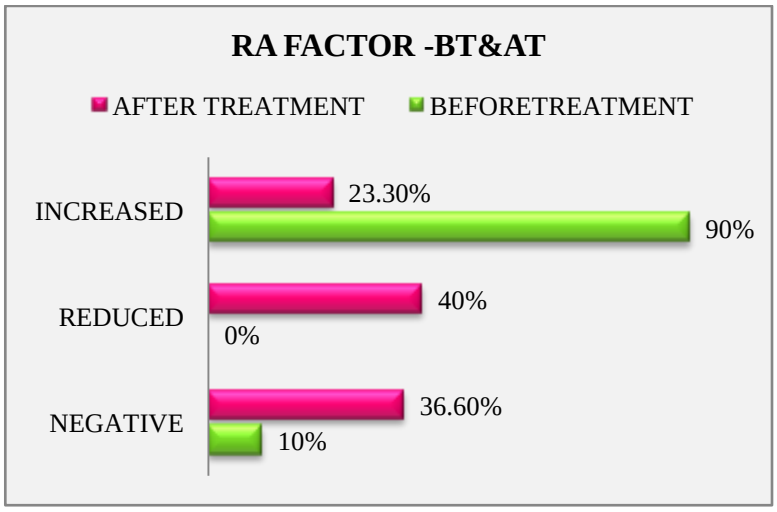


Figure: 28

Inference

Among the 30 cases, before treatment Rheumatoid factor was positive in 27(90%) cases and 3(10%) cases had negative results in RA factor.

After treatment, Rheumatoid factor was Negative in 11(36.6%) cases, reduced in 12(40%) cases and increased in 7(23%) cases.

30. DISTRIBUTION OF CASES BY C-REACTIVE PROTEIN BEFORE TREATMENT

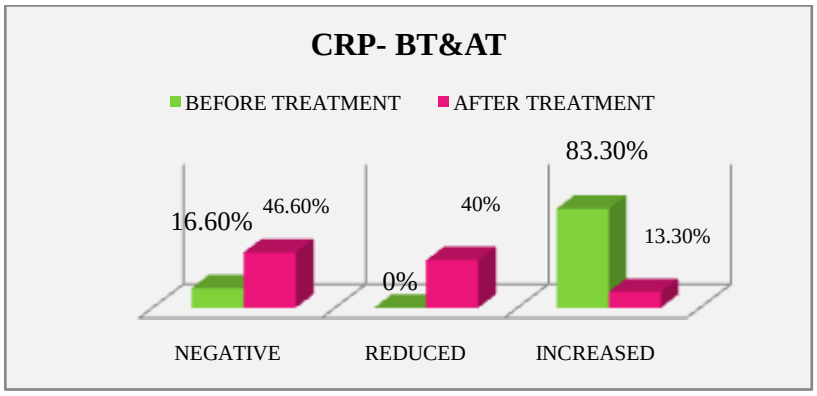
TABLE: 30

CRP	NO. OF .CASES	PERCENTAGE%
POSITIVE	25	83.3%
NEGATIVE	5	16.6%

31. DISTRIBUTION OF CASES BY C-REACTIVE PROTEIN AFTER TREATMENT

TABLE: 31

CRP	NO. OF.CASES	PERCENTAGE%
NEGATIVE	14	46.6%
REDUCED	12	40%
INCREASED	4	13.3%



Inference **Figure: 29**

Among the 30 cases, before treatment CRP was positive in 25(83.3%) cases and negative in 5(16.6%) cases.

After treatment CRP was negative in 14(46.6%) cases, reduced in 12(40%) cases and increased in 4(13.3%) cases.

32. DISTRIBUTION OF CASES BY ANTI- CCP

TABLE: 32

ANTI- CCP	BEFORE TRAETMENT	AFTER TREATMENT
POSITIVE	25 (83.3%)	26 (86.6%)
NEGATIVE	5 (16.6%)	4 (13.3%)

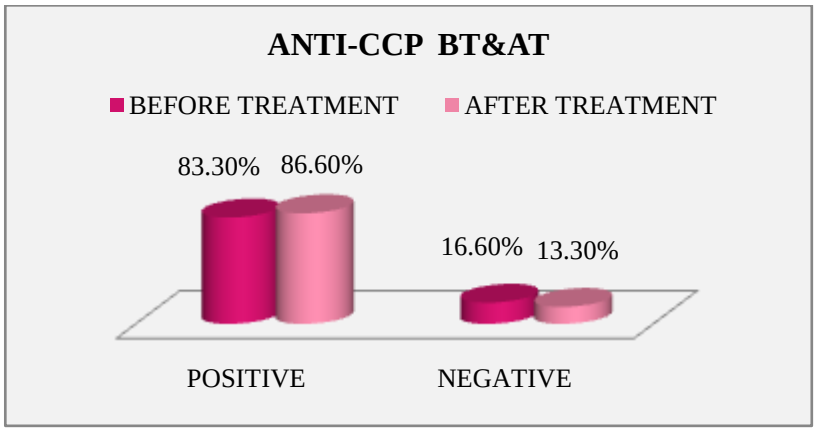


Figure: 30

Inference

Among the 30 cases, before treatment Anti-CCP was Positive in 25(83.3%) cases and Negative in 5(16.6%) cases.

After treatment, Anti-CCP was negative in 4(13.3%) cases and positive in 26(86.6%) cases.

33. DISTRIBUTION OF CASES BY ASO TITER

TABLE: 33

ASO TITER	BEFORE TRAETMENT	AFTER TREATMENT
POSITIVE	5(16.6%)	2(6.6%)
NEGATIVE	25 (83.3%)	28 (93.3%)

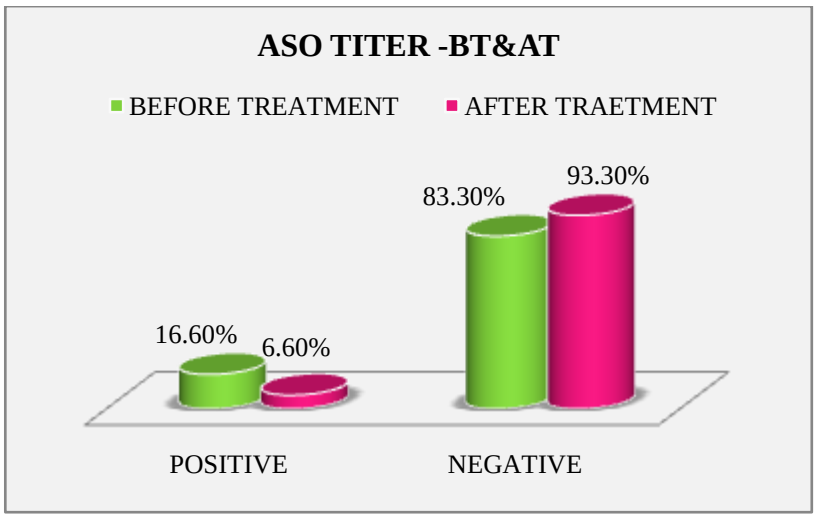


Figure: 31

Inference

Among the 30 cases, before treatment ASO titer was positive in 5(16.6%) cases, negative in 25(83.3%) cases.

After treatment ASO titer was positive in 2 (6.6%) cases and negative in 28(93.3%) cases.

	pain scale		Gradation movements		EULAR CRITERIA		ESR (mm)		CRP(r
NAME							BT	AT	BT
	BT	AT	BT	AT	BT	AT			
Prabha	2	1	3	2	9	5	100	50	13
Shafinisha	4	2	3	2	10	7	66	40	6.8
Anjomariya	3	2	3	2	10	8	40	28	7.8
chandra	4	3	4	3	9	7	48	20	7.4
Kalaiselvi	4	2	4	2	7	6	48	26	23.3
Alamelu	3	2	3	2	10	7	65	55	9
JayanthiK	3	2	3	2	9	9	18	9	3.9
Sonu	3	2	3	2	9	6	140	68	44.8
Egavalli	3	2	3	2	10	8	100	40	12.4
Meena	3	2	3	2	9	8	90	38	2.7
Revathy	4	1	3	1	6	5	90	48	39
Shajitha pr	3	2	3	2	9	6	60	30	4.7
Dhanam	3	2	3	2	10	6	43	28	4.75
Kottesh wa	4	1	3	2	10	8	49	20	20.6
Meenakshi	4	3	3	2	10	6	40	18	6
Thanga latl	3	2	3	2	10	10	42	20	8.8
Pramila .N	4	2	3	2	8	6	50	26	14.6
Kokila	4	3	3	2	9	5	46	20	9
Anitha D	3	2	3	2	8	6	90	30	17
Usha .J	4	3	3	2	10	10	46	24	11.8
KanarojaT	3	2	3	1	8	7	46	30	2.86
Sujatha V	3	1	3	1	7	5	42	20	17.9
Sumathy	3	2	3	2	7	5	12	20	8
Karthikeya	3	1	3	1	6	5	38	24	15.3
Mala.S	3	2	2	1	6	5	60	30	20.5
Saranya	3	2	3	2	7	5	50	26	90.3
Kasthuri	3	2	2	1	8	8	50	26	21.6
Prarimal.K	3	2	3	2	7	6	26	10	8
jeyanthi H	3	2	2	1	7	5	26	12	2.3
Neelavathy	3	2	3	2	10	9			

ŋg/L)		RAFACTOR (IU/ml)		Anti ccp (U/ml)		ASO titre (IU/ml)	
AT	BT	AT	BT	AT	BT	AT	
9.2	26	29	200	200	240	52.9	
10	2480	1660	200	200	54.9	52.6	
11.2	65.6	36.2	188.5	142.6	164	106	
12.9	32.6	25	200	44.5	33.6	32	
6.4	26.5	20.1	47.5	43.5	55.4	56.4	
10.2	210	160	200	200	13.9	12	
14	85	155	30	36	50	52	
2	64	26.3	11.5	44.3	55	38	
23.1	228	301	200	200	98.4	96.6	
6.3	308	260	200	200	63.6	58.2	
3	12	16	32	74	39.3	28	
26.9	62.9	84.9	200	200	98.7	96	
3.3	82.7	70.1	200	33.67	29.8	26	
3	84	114	145	136	124	106	
15.5	169	29	200	200	686	420	
6	135	198	200	200	219	280	
3	257	166	200	200	28	26	
4.3	39	26	1.3	1	244	180.6	
6	63	40	132	120	52	56	
14	728	905	200	200	73.2	76	
7.6	80.2	70.2	53.14	53	94.3	90.4	
4	21	12	29.8	20.8	30	20	
7.6	10.6	16.6	0.54	0	87.8	86	
6	192	165	134	134	17	17	
6	59	60	3.5	3.2	39	36	
12.6	64.7	46.8	0.9	0	0	0	
72.3	29.4	32.6	47.9	47.9	109	106	
15.6	32	26	158	130	0	0	
9	39	26	135	123	0	0	
3	876	636	200	200	218	198	

8.3 STATISTICAL ANALYSIS

All collected data have entered MS Excel software using different columns as variables and rows as patients. SPSS software has used to perform statistical analysis. Basic descriptive statistics include frequency distributions, and cross-tabulations have performed.

The quantity variables have expressed as Mean ± Standard Deviation and qualitative data as a percentage. A probability value of <0.05 has considered indicating statistical significance.

Paired t-test and Wilcox signed rank test has performed for determining the significance between before and after treatment. In this study, statistical analysis has done for the EULAR criteria, Universal pain scale, clinical assessment and blood investigation to find the significance of the treatment statically.

Distribution of Mean and Standard Deviation before and after treatment in Hemoglobin

Table: 8.3.1

Hemoglobin	Mean	Standard Deviation	t value	p- Value
Before Treatment	11.62	1.58	4.584	0.000
After Treatment	11.13	1.5		

INFERENCE

The mean and standard deviation of hemoglobin before treatment was 11.62 $\pm$1.58 and after treatment was 11.13$\pm$ 1.5 respectively. There is a significant improvement of Hb after treatment. ($p<0.000$)

Distribution of Mean and Standard Deviation before and after treatment in RBC

Table: 8.3.2

RBC	Mean	Standard Deviation	t value	p- Value
Before Treatment	4.49	0.48	2.836	0.001
After Treatment	4.37	0.47		

INFERENCE

The mean and standard deviation of RBC before treatment was 4.49 $\pm$0.48 and after treatment was 4.37$\pm$0.47 respectively. There is a significant improvement of RBC after treatment.($p<0.001$)

Distribution of Mean and Standard Deviation before and after treatment in Platelet count

Table: 8.3.3

Platelet	Mean	Standard Deviation	t value	p- Value
Before Treatment	3.53	0.85	-2.144	0.004
After Treatment	3.75	0.67		

INFERENCE

The mean and standard deviation of platelet count before treatment was 3.53$\pm$0.85 and after treatment was 3.75$\pm$0.67 respectively. There is significant improvement of Platelets after treatment. ($p<0.004$)

Distribution of Mean and Standard Deviation before and after treatment in ESR

Table: 8.3.4

ESR	Mean	Standard Deviation	t value	p- Value
Before Treatment	56.7	27.75	8.628	0.000
After Treatment	28.87	13.22		

INFERENCE

The mean and standard deviation of ESR before treatment was 56.7±27.75 and after treatment was 28.87± 13.22 respectively. There has been a significant reduction in ESR value after treatment which in turn resulted in the control of the inflammatory process of the disease. ($p<0.000$)

Distribution of Mean and Standard Deviation before and after treatment in CRP

Table: 8.3.5

CRP	Mean	Standard Deviation	t value	p- Value
Before Treatment	15.8	17.23	3.976	0.000
After Treatment	11.13	12.98		

INFERENCE

The mean and standard deviation of CRP before treatment was 15.8± 17.23 and after treatment was 11.13± 12.98 respectively. There has been a significant reduction in CRP value after treatment. ($p<0.000$)

Distribution of Mean and Standard Deviation before and after treatment in RA factor

Table: 8.3.6

RA factor	Mean	Standard Deviation	t value	p- Value
Before Treatment	218.74	470.24	1.288	0.21
After Treatment	180.43	339.89		

INFERENCE

The mean and standard deviation of RA factor before treatment was 218.74±470.24 and after treatment was 180.43± 339.89 respectively. There is no significant change. ($p<0.21$)

Distribution of Mean and Standard Deviation before and after treatment in Anti CCP

Table: 8.3.7

Anti- CCP	Mean	Standard Deviation	t value	p- Value
Before Treatment	125.02	82.33	1.541	0.013
After Treatment	112.92	78.79		

INFERENCE

The mean and standard deviation of Anti CCP before treatment was 125.02±82.33 and after treatment was 112.92± 78.79 respectively. There is no significant change. ($p<0.013$)

Distribution of Mean and Standard Deviation before and after treatment in ASO Titer

Table: 8.3.8

ASO TITER	Mean	Standard Deviation	t value	p- Value
Before Treatment	100.6	131.41	1.854	0.07
After Treatment	80.16	89.48		

INFERENCE

The mean and standard deviation of ASO titer before treatment was 100.6± 131.41and after treatment was 80.16± 89.48 respectively. There is no significant change. ($p<0.07$)

Distribution of Mean and Standard Deviation before and after treatment in Universal pain scale

Table: 8.3.9

UNIVERSAL PAIN SCALE	Mean	Standard Deviation	Wilcoxn signed rank t value	p- Value
Before Treatment	3.2667	0.5121	-5.064	0.000
After Treatment	1.9967	0.5467		

INFERENCES

The mean and standard deviation of Universal pain scale before treatment was 3.2667± 0.5121 and after treatment was 1.9967± 0.5467 respectively. There has been a significant reduction of pain with the trial drug. ($p<0.000$)

Distribution of Mean and Standard Deviation before and after treatment in Gradation of movement scale

Table: 8.3.10

Gradation of movement scale	Mean	Standard Deviation	Wilcoxn signed rank t value	p- Value
Before Treatment	2.9667	0.5467	-5.152	0.000
After Treatment	1.8	0.4069		

INFERENCES

The mean and standard deviation of Gradation movement scale before treatment was 2.9667$\pm$ 0.5467 and after treatment was 1.8 $\pm$ 0.4069 respectively. There has been a significant improvement in the movement of joints in the trial drug. ($p<0.000$)

Distribution of EULAR score

Table: 8.3.11

Variable	Wilcox signed rank test value	p- value
EULAR criteria	-4.506	0.000

There is a significant reduction of EULAR score before and after treatment. ($p<0.000$)

Distribution of clinical symptoms

Table: 8.3.12

Clinical Assessment	Wilcox signed rank test value	p- value
Pain	-5.013	0.000
Morning stiffness	-5.014	0.000
Aggravating factor	-4.69	0.000
Reliving factor	-3.873	0.000
Tenderness	-5.007	0.000

There is a significant reduction in clinical symptoms after treatment. ($p<0.000$)

9. DISCUSSION

Yugi classified the Vatha diseases as 80 types in the text book of Yugi vaithiya chinthamani 800.Uthiravatha suronitham is one of the Vatha disease. Uthiravatha suronitham is a systemic disorder. It's caused by deranged of vatham which manifested as pain and tenderness present in minor joints, swelling in minor and major joints, depression, stress and low grade fever. Its signs and symptoms may be correlated with the Rheumatoid arthritis in modern medicine.

Before initiating the study, a well designed protocol was prepared and presented to the Institutional Ethical Committee (IEC) of National Institute of Siddha. The date of IEC approval and IEC number is 21.12.2020 ; NIS/IEC/ 2020/D-5.The trial was registered in clinical trial registry of India with the Registration no : CTRI/2021/09/036341[Registered on : 08/09/2021].

The raw drugs were authenticated by the Botanist, National Institute of Siddha, Chennai -600047.The Siddha Herbo mineral formulation Panchathikta kirutham(Internal medicine) and Karunkozhi thylam (External medicine) were prepared as per the standard operating procedure mentioned in Siddha literature in the Gunapadam laboratory, NIS, under the guide's supervision.

Among the 60 cases screened, 30 cases were selected who satisfied the inclusion and exclusion criteria were recruited for the study. Before starting the clinical Trial, Informed consent was obtained from all the cases. All the enrolled cases were treated in Maruthuvam Out Patient Department.

The clinical trial aimed to regulate the deranged vatham and reduce clinical symptoms and reduce the joints pain (Universal pain scale).

Day -1 Purgation – Agasthiyar kuzhambu (130mg) with inji rasam (5 ml) in early morning was given for all patients.

Day-2 Oil bath in Arakku thylam was recommended for all patients.

Day -3 Rest

Day -4th onward trial drugs were administered as per protocol. In this study, the trial drug Panchathikta kirutham - kaal palam (8.5 g) was administrated orally after food, twice a day and Karunkozhi thylam was applied over the affected painful joints. The trial drug was given for 45 days. OPD patients were asked to

visit the hospital once in 7 days once. After completing the trial, patients were followed for 3 months without trial drugs. Clinical assessment and Laboratory investigations were done on 0 th and 49th day.

Most of the ingredients posses veppa veeriyam (hot potency) and Kaippu suvai (pungent taste), which balanced and rectified the deranged Vatha kutram.

The trial drugs possess Anti- inflammatory, Anti- spasmodic, Anti oxidant, Anti arthritic activity, Anti-analgesic activity. Therefore the formulations are effective in the management of Uthiravatha suronitham (Rheumatoid arthritis).

Discussion on qualitative analysis Biochemical analysis

The qualitative analysis of Panchathikta kirutham as per the standard operating procedure was done in Biochemistry Lab, NIS, Tambaram sanatorium, Chennai -600047.

Results

The biochemical analysis showed the presence of Carbonate, Iron, Calcium, Lead, Zinc, Magnesium, Starch and alkaloid in Panchathikta kirutham.

Physiochemical analysis of Panchathikta kirutham

Physiochemical analysis of Panchathikta kirutham was carried out for each extract of Panchathikta kirutham Viscosity at 50oC (Pa s) 61.95, Refractive index1.32, Weight per ml (gm/ml) 1.18, Iodoine value (mg I2/g) 90.17, Saponification value (mg of KOH to saponify 1gm of fat) 197.39, Acid Value mg KOH/g 1.17, Peroxidase Value mEq/kg 5.8.

Phytochemical analysis of Panchathikta kirutham

The phytochemical analysis showed the presence of Steroids, Triterpenoids, Coumarin, and Protein.

Pesticide analysis of Panchathikta kirutham

The result showed that there were no traces of pesticides residues such as Orgnochlorine pesticides, Organophosphorus pesticides, Organo carbamates, Pyrethroids. Hence it should be BDL as in the above analysis.

Aflatoxin analysis of Panchathikta kirutham

Aflatoxin B1, Aflatoxin B2, Aflatoxin G1, Aflatoxin G2 were absent in aflatoxin analysis of Panchathikta kirutham. Aflatoxin is toxic fungal contaminants that spoils and makes the drug contaminated for human consumption.

HPTLC fingerprinting analysis of Panchathikta kirutham

HPTLC finger printing analysis of the sample revealed that the presence of four prominent peaks corresponds to the presence of four versatile phytocomponents present within it. Rf value of the peaks ranges from 0.02 to 0.83.

Heavy metal analysis of Panchathikta kirutham

Clearly showed that the sample has no traces of heavy metals such as Arsenic, Mercury and Cadmium,where as the sample showed the presence of Lead at 0.14 ppm. Which level was below the prescribed limit.

Specific pathogen analysis of Panchathikta kirutham

Specific pathogen such as E.coli, Salmonella, Staphylococcus Aureus, Pseudomonas Aeruginosa were absent in Panchathikta kirutham. These parameters are essential for the safety of the drug from microbial contamination for human consumption.

Sterility test for Panchathikta kirutham

No growth/ colonies were observed in any of the plates inoculates in the test drug.

CLINICAL ASSESSMENT

GENDER

Auto immune disease is generally influenced by genetic, hormonal and environmental factors. Autoimmune disease is more common in females than males, hence the etiology of RA is influenced by estrogen and progesterone .It lacks in males, thus females had higher incidence of RA. 30 patients of both sexes

had selected for this study. Among them 29 cases (97%) were Females and 1case (3%) was male.

AGE

Clinically 3to 4 decade of life Rheumatoid arthritis is more common. Out of 30 cases 1 (3%) patient was affected in 20-29 years, 10(34%) patients were affected in 30-39 years, 19(63%) patients were affected in 40-50 years.

DIET

Out of 30 cases, 28(93%) patients were Non vegetarians and 2(7%) patients were vegetarians.

Uthiravatha suronitham was more frequently observed in patients with non vegetarian diet consumption. Which have pro inflammatory activity effect due to the oxidative stress. It is associated with inflammatory markers C-reactive proteins, Interlukin-6, Homocystein which produces the inflammation.

MARITAL STATUS

Out of 30 cases, 29(97%) patients were married and 1(3%) patient was unmarried.

FAMILY HISTORY

Family history plays a major role in the incidence of Uthiravatha suronitham (Rheumatoid arthritis), According to K.N.Kuppusamy mudhaliyar said to,

"Kalitharu muyakkam perror
Kadiseyal karuviyamaal"

Sabapathy kaiyedu

Out of 30 patients, 23(77%) cases had no relevant family history and 7(23%) cases had a family history of Uthiravatha suronitham.

MENSTURAL HISTORY

Estrogen and progesterone expression is altered in many female patients with autoimmune disease. This variation contributes to immune deregulations.

Out of 29 cases, 20(67%) patients had regular menstrual cycle, 1(3%) patient had irregular menstruation, 8(27%) patients had attained menopause.

BOWEL HABITS

Among the 30 cases, 2(7%) patients had an abnormal bowel habits, 28(93%) patients had a normal bowel habits.

SLEEP

Rheumatoid arthritis is associated with reduction of sleep pattern, which is likely explained by pain, mood, stress, fatigability in disease population. Among the 30 cases, 10(33%) cases had sleeping disturbances, 20(67%) cases had no sleeping disturbances.

PSYCHOLOGICAL STATE

Depression is one of the major problems in Rheumatoid arthritis; it was studied in British society of Rheumatology. Among the 30 cases, 23(77%) cases had a normal psychological status, Anxiety in 3(10%) cases, Depression in 4(13%) cases with the Uthiravatha suronitham.

SOCIO ECNOMIC STATUS

Higher incidence of rheumatoid arthritis was observed among the lower socio economic status peoples. Among the 30 cases, 3(10%) cases were in high socio economic state, 20(67%) cases were middle and 7(23%) cases were lower socio economic status.

THEGI

Among the 30 cases, Vatha thegi were 15(50%), Pitha thegi were 4(13%), Kaba thegi were 11(37%) with Uthiravatha suronitham disease.

In yugi vaithya chinthamnai 800, it was mentioned that deranged the Vatha humour is the causes of Uthiravatha suronitham.

REFERENCE OF KAALAM

Among the 30 cases, 14(47%) cases were reported in Munpani kaalam, 10(33%) cases were reported in Koothir kaalam, 2(7%) cases were reported in Kaar Kaalam & Pinpani Kaalam, and 1 (3%) case was reported in Ilavenil Kaalam &Muthuvenil Kaalam. In the Siddha text, Koothir kaalam and Munpani kaalam posses cold environment. Cold aggravates the Vatha disease in this period.

REFERENCE OF PORIPULANGAL

Before treatment 30(100%) cases were affected with Mei due to pain in all minor and major joints. Cases improved after treatment 4(13.3%) cases were normal and 26(86.6%) case were still affected with Mei.

REFERENCE OF KANMENDRIYAM

Before treatment, 30(100%) cases were affected in Kai and Kaal due to pain in the upper limb and lower limb joints. Cases improved after the treatment, 19(63.3%) cases were affected in Kai and 28 (93.3%) cases were affected in Kaal.

REFERENCE OF KOSANGAL

Before treatment, 100% of cases were affected in Vignnaamaya kosam due to pain and restricted movements in affected joints, 26.6% in Manomaya Kosam due to mental depression and sleeplessness, 23% in Annamaya Kosam due to loss of appetite, 3.3% in Pranamaya kosam due to difficulty in breathing.

In relation with vignnaamaya kosam 86.6% of cases were affected with Vignamaya Kosam, 6.6% of cases were affected in Manomaya kosam, and 3.3% of cases were affected in Pranamaya Kosam.

REFERENCE OF UDAL THATHUGAL

Saaram was affected due to general tiredness and loss of strength in all 100% cases and 87% cases were improved after treatment.

Senneer was affected due to pain in the minor and major joints and the elevation of ESR, CRP in the blood investigation in all 100% of cases and 83% cases were improved after treatment.

Oon was affected due to pain, swelling and restricted movements present in affected joints in 100% of cases and 43% of cases were improved after treatment.

Kozhuppu was affected due to difficulty in movements of affected joints in 100% of cases and 10% cases were improved after treatment.

Enbu was affected due to swelling, deformities and restricted movements in affected joints in 93% of cases and 10% cases were improved after treatment.

Moolai was affected due to swelling in the affected joints in 77% cases in before and after treatment.

REFERENCE OF UYIR THATHUGAL - VATHAM

Praanan was affected due to breathing difficulty in 3% of cases before and after treatment.

Abaanan was affected due to constipation in 3% of cases before treatment.

Udhaanan was affected due to Nausea in 3% of cases before treatment.

Viyaanan and Samaanan were affected due to pain, swelling and tenderness in the affected joints and restricted movements in 100% of cases and 10% of cases were improved after treatment.

Koorman was affected due to increased yawning in 20% of cases in before treatment. After treatment cases were improved as 20%.

Kirukaran was affected due to loss of appetite, mental depression in 43% of cases before treatment. After treatment cases 43% of cases were improved.

Devathathan was affected due to general tiredness; constipation in 87% of cases in before treatment and 74% of cases were improved after treatment.

REFERENCE OF UYIR THATHUGAL – PITHAM

Anal pitham was affected due to indigestion in 23.3% cases in before treatment. After treatment cases were improved as 100%.

Ranjaga pitham was affected due to pallor and lethargy in 30% of cases in before treatment and 20% of cases improved after treatment.

Saathaga pitham was affected due to unable to do routine works and depression in 100% of cases before treatment and 40% of cases were improved after treatment.

Prasaka pitham was affected due to redness in affected joint in 3.3% of cases in before treatment. After treatment improvement was occurred in prasaka pitham.

REFERENCE OF UYIR THATHUGAL – KABAM

Avalambagam and Santhigam was affected due to pain, swelling and tenderness, restricted movements in affected joints in 100% of cases and 20% cases were improved after treatment.

Kilethgam was affected due to loss of appetite in 3.3% of cases in before treatment. After treatment improved was occurred in kilethagam.

REFERENCE OF ENVAGAI THERVUGAL

NAADI

According to Sathaga naadi,Vathapitha naadi occured in Vathanoikal,

"Porulaana vathathil pitham sernthu

….. …….. ……

Karuvaana thegamathil ulaichal sombal

Hence vatham and pitham get altered in Rheumatoid arthritis patients. Among the 30 cases, before treatment 43.3% of cases had Vatha pitha naadi, 6.6% of cases had Vatha kaba naadi and Kaba vatha naadi, 30% of cases had Pitha vatha naadi, 10% of cases had Pithakaba naadi, and 3.3% of case had Kaba pitha naadi.

REFERENCE OF ENVAGAI THERVUGAL

Naa was affected in 20% of cases due to coated tongue, pallor, dryness and 6.6% cases were improved after treatment in coated tongue only.

Vizhi was affected in 16.6% of cases due to pallor in which no improvement was observed after treatment.

Sparisam was affected in 30% of cases due to swelling in joints with local heat and 13.3% cases were improved after treatment.

Malam was affected in 10% of cases due to constipation in before the treatment. After treatment improved was occurred.

REFERENCE OF NEIKURI

Among the 30 cases, before treatment 16.6% of cases had neikuri of Snake like pattern, 40% of cases had Ring pattern, 43% of cases had Pearl bead pattern.

After treatment 63% of cases had Snake like pattern, 30% of cases had Ring pattern, 6.6% of cases had Peal bead pattern.

LAB INVESTIGATION

Routine biochemistry such as liver function test, Renal function test and Hematology, Urine analysis parameters have found in normal limits before and after treatment.

PRIMARY OUTCOME

PAIN ASSESSMENT SCALE

Out of 30 cases, before treatment 9 (30%) of cases had severe pain, 66.6% of cases had moderate pain, 1(3.3%) of case had mild pain in all minor and major joints. After treatment, pain completely reduced in 5 (16.6%) cases, 21(70%) cases had mild pain and 4 (13.3%) cases had moderate pain.

RESTRICTED MOVEMENT ASSESSMENT

(Gradation of movements scale)

Out of 30 cases, before treatment 2(6.6%) cases were presented in Grade IV due to severe pain, 25(83.3%) cases were presented in Grade III due to moderate restricted movements, 3(10%) cases were presented in Grade II due to mild restricted movements .

After treatment 7(23.3%) cases were in Grade I, 22(73.3%) cases were presented in Grade II, 1(3.3%) case was presented in Grade III. It revealed that the trial drugs are effective in reducing the Restricted movements of affected joints.

EULAR SCORE

Before treatment, 30 (100%) cases had positive ELUAR score (i.e.$\geq$ 6).

After treatment, it was negative for 17 (56.6%) of the cases, remaining 13(43.3%) of the cases were found in positive category.

CLINICAL SYMPTOMS

PAIN

Before treatment, pain was noted in 30(100%) of the cases. After treatment, pain was reduced in 24(80%) of the cases, pain was absent in 4(13.3%) of the cases, pain is present in 2(6.6%) of the cases.

SWELLING

Before treatment swelling was noted in 27(90%) of the cases. After treatment, swelling was reduced in 18(60%) of the cases, absent in 8(26.6%) of the cases, swelling present in 1(3.3%) of the case.

TENDERNESS

Before treatment, tenderness was noted in 30(100%) of the cases. After treatment tenderness get reduced to 21(70%) of the cases, absent in 9(30%) of the cases.

MORNING STIFFNESS

Before treatment morning stiffness was noted in 30(100%) of the cases. After treatment it get reduced to 23(76.6%) of the cases, absent in 6(20%) of the cases, present in 1(3.3%) of the case.

LOCAL HEAT

Before treatment local heat was noted in 25(83.3%) of the cases. After treatment it was absent in 24(80%) of the case, present in 1(3.3%) of the case.

RESTRICTED MOVEMENTS

Before treatment restriction movement was noted in 30(100%) of the cases. After treatment it get reduced in 25(83.3%) of the cases, absent in4(13.3%) of the cases, present in 1(3.3%) of the case.

SECONDARY OUTCOME

ERYTHROCYTE SEDIMENTATION RATE (ESR)

Among the 30 cases, before treatment ESR increased in 28 (93.3%) cases and 2(6.6%) cases had normal ESR values.

After treatment in 20(70%) cases ESR reduced, 10(30%) cases had Normal ESR values.

C - REACTIVE PROTEIN (CRP)

Among the 30 cases, before treatment CRP was positive in 25(83.3%) cases and negative in 5(16.6%) cases.

After treatment CRP was negative in 14(46.6%) cases, reduced in 12(40%) cases and increased in 4(13.3%) of the cases.

Anti-CCP

Among the 30 cases, before treatment Anti-CCP was Positive in 25(83.3%) cases and Negative in 5(16.6%) cases.

After treatment, Anti-CCP was negative in 4(13.3%) cases and positive in 26(86.6%) cases.

RA FACTOR

Among the 30 cases, before treatment Rheumatoid factor was positive in 27(90%) cases and 3(10%) cases had negative results in RA factor.

After treatment, Rheumatoid factor was Negative in 11(36.6%) cases, reduced in 12(40%) cases and increased in 7(23%) ca

ASO TITER

Among the 30 cases, before treatment ASO titer was positive in 5(16.6%) cases, negative in 25(83.3%) cases.

After treatment ASO titer was positive in 2 (6.6%) cases and negative in 28(93.3%) cases.

According to Siddha literature, Most of the ingredients of trial drugs possess veppa veeriyam (hot potency) and Kaippu suvai (pungent taste), which balance and rectify the deranged Vatha kutram. As per Gunapadam mooligai text, Most of the ingredients of trial drugs have properties to reduce vatha disease. As it was proven that ingredients in the trial drugs having Anti- inflammatory, Anti-spasmodic, Anti oxidant, Anti arthritic activity, Anti-analgesic activity, Anti pyretic activity etc. As a hole the trial drug have potential effect in reducing the disease severity in Rheumatoid arthritis patients and the lab parameters like CRP, ESR, RA factor, Anti CCP.

10. SUMMARY

This study is aimed to the therapeutic efficacy of Siddha herbo mineral formulation **PANCHATHIKTA KIRUTHAM (Internal medicine)** and **KARUNKOZHI THYLAM (External medicine)** in **Uthiravatha suronitham** (Rheumatoid arthritis) cases.

The study protocol was prepared and submitted to the Institutional Ethical Committee (IEC) of National Institute of Siddha. The date of IEC approval and IEC number is 21.12.2020; NIS/IEC/ 2020/D-5.

The trial was registered in clinical trial registry of India with the Registration no: CTRI/2021/09/036341[Registered on: 08/09/2021].

The raw drugs were authenticated by the Botanist, National Institute of Siddha,Chennai 600047.

The Siddha Herbo mineral formulation Panchathikta kirutham(Internal medicine) and Karunkozhi thylam (External medicine) were prepared as per the standard operating procedure mentioned in Siddha literature in the Gunapadam laboratory, National Institute of Siddha under the guide's supervision.

The biochemical analysis was done in Biochemistry Lab, NIS, Tambaram sanatorium, Chennai -600047.The biochemical analysis showed that the presence of Carbonate, Iron, Calcium, Lead, Zinc, Magnesium, Starch and alkaloid in Panchathikta kirutham

Physiochemical, Phytochemical, HPTLC, Heavy metal analysis, Pesticide , aflatoxin analysis of the trial drug have been carried out in Noble Research Solution Pvt., Ltd.,

Physiochemical analysis of Panchathikta kirutham was carried out for each extract of Panchathikta kirutham Viscosity at 50oC (Pa s) 61.95, Refractive index1.32, Weight per ml (gm/ml) 1.18, Iodoine value (mg I2/g) 90.17, Saponification value (mg of KOH to saponify 1gm of fat) 197.39, Acid Value mg KOH/g 1.17, Peroxidase Value mEq/kg 5.8.

The phytochemical analysis showed the presence of Steroids, Triterpenoids, Coumarin, and Protein.

The result showed that there were no traces of pesticides residues such as Orgnochlorine pesticides, Organophosphorus pesticides, Organo carbamates, Pyrethroids. Hence it should be BDL as in the above analysis.

Aflatoxin B1, Aflatoxin B2, Aflatoxin G1, Aflatoxin G2 were absent in aflatoxin analysis of Panchathikta kirutham.

HPTLC finger printing analysis of the sample revealed that the presence of four prominent peaks corresponds to the presence of four versatile phytocomponents present within it. Rf value of the peaks ranges from 0.02 to 0.83.

Clearly showed that the sample has no traces of heavy metals such as Arsenic, Mercury and Cadmium,where as the sample showed the presence of Lead at 0.14 ppm. Which level was below the prescribed limit.

Specific pathogen such as E.coli, Salmonella, Staphylococcus Aureus, Pseudomonas Aeruginosa were absent in Panchathikta kirutham. These parameters are essential for the safety of the drug from microbial contamination for human consumption.

No growth/ colonies were observed in any of the plates inoculates in the test drug.

For the clinical study, 60 cases were screened based on inclusion and exclusion criteria at the OPD of Maruthuvam, NIS. Out of 60 cases, 30 cases were recruited for the clinical trial. Both Siddha and modern methodology used for clinical diagnosis of Uthiravatha suronitham.

Before initiating the clinical trial, informed consent was obtained from all the patients.

All the patients were advised for Day 1 purgation with Agasthiyar kuzhambu (130 mg) with Inji rasam (5ml) and oil bath with Arakkuthylam on Day-2 , Day-3 patients were advised to take rest, no medicine was given on the day to correct the elevated mukkutram.

Day -4th onward the trial drugs Panchathikta kirutham - kaal palam (8.5 g) were administrated orally after food twice a day and Karunkozhi thylam was

applied over the affected joints. The trial drugs were given for 45 days in all recruited Uthiravatha suronitham cases . Clinical assessment had been done during each visit in OPD patients (7 days once) and the data were noted in the Case Report Form.

Routine Hematological, Biochemistry, urine examination had been done before and after treatment.

The prognosis was recorded through Universal pain scale and Gradation movement scale and clinical symptoms on the initial day and 49 th day.

Diet restriction was strictly followed during the trial period as well as in the re dieting period, as noted in the dietary advice form.

In the clinical trial there was no adverse drug reaction noted during the treatment period.

Based on **EULAR criteria**, before treatment positive EULAR score for 100% of cases, after treatment it was negative in 56.6% of cases. There is a **significant reduction** of EULAR score before and after treatment. ($p<0.000$)

Based on **UNIVERSAL PAIN SCALE**, Out of 30 cases, before treatment 9 (30%) of cases had severe pain, 66.6% of cases had moderate pain, 1(3.3%) of case had mild pain in all minor and major joints.

After treatment, pain completely reduced in 5 (16.6%) cases, 21(70%) cases had mild pain and 4 (13.3%) cases had moderate pain. There is a **significant reduction of pain** with the trial drug. ($p<0.000$)

Before and after treatment **clinical symptoms** have been **significantly reduced**. ($p<0.000$)

Based on **RESTRICTED MOVEMENT ASSESSMENT SCALE**, Out of 30 cases, before treatment 2(6.6%) cases were presented in Grade IV due to severe pain, 25(83.3%) cases were presented in Grade III due to moderate restricted movements, 3(10%) cases were presented in Grade II due to mild restricted movements .

After treatment 7(23.3%) cases were in Grade I, 22(73.3%) cases were presented in Grade II, 1(3.3%) case was presented in Grade III. There has been a **significant improvement in the movement of joints** in the trial drug. ($p<0.000$)

Based on **ESR**, Among the 30 cases, before treatment ESR increased in 28 (93.3%) cases and 2(6.6%) cases had normal ESR values.

After treatment in 20(70%) cases ESR reduced, 10(30%) cases had Normal ESR values. There has been a **significant reduction in ESR** value after treatment. This in turn results in the control of the inflammatory process of the disease. ($p<0.000$)

Based on **CRP** Among the 30 cases, before treatment CRP was positive in 25(83.3%) cases and negative in 5(16.6%) cases.

After treatment CRP was negative in 14(46.6%) cases, reduced in 12(40%) cases and increased in 4(13.3%) of the cases. There has been a **significant reduction in CRP** value after treatment. ($p<0.000$)

Before treatment, **Rheumatoid factor** positive in 90% of cases and 10 % of cases had negative. After treatment, Rheumatoid factor was Negative in 36.6% of cases, reduced in 40% of cases and increased in 23% of cases. There is no significant change. ($p<0.21$)

Before treatment, **ASO titer** was positive 16.6% of cases, after treatment It was positive in 6.6% of cases. There is no significant change. ($p<0.07$)

11. CONCLUSION

All the results of the clinical study showed that the trial drugs are very effective in lowering the symptoms of Rheumatoid arthritis and the laboratory parameters ESR, CRP, RA factor, Anti CCP within the treatment period of 45 days.

Based on statistical analysis, before and after treatment the clinical symptoms have been significantly reduced. ($p<0.000$)

Based on statistical analysis before and after treatment the Universal pain scale, Gradation movement assessment scale and Lab investigations have been significantly reduced in all cases.($p<0.000$)

The Siddha parameters like eight diagnostic methods, Seven physical constituents, Three humours showed improvement to the trial drugs during the clinical trial.

No adverse effects were noted during the study period.

This study concludes that the trial drugs **Panchathikta Kirutham (Internal medicine) and Karunkozhi thylam (External medicine)** were safe, efficacious and cost effective in the treatment of **Uthiravatha suronitham**.

NATIONAL INSTITUTE OF SIDDHA
राष्ट्रीय सिद्ध संसथान
Ministry of AYUSH - आयुष मंत्रालय
GOVERNMENT OF INDIA-भारत सरकार
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ईमेल: nischennaisiddha@yahoo.co.in वेब www.nischennai.org

F. No: NIS/4-76/IEC/2020 Date: 28th June 2021

CERTIFICATE

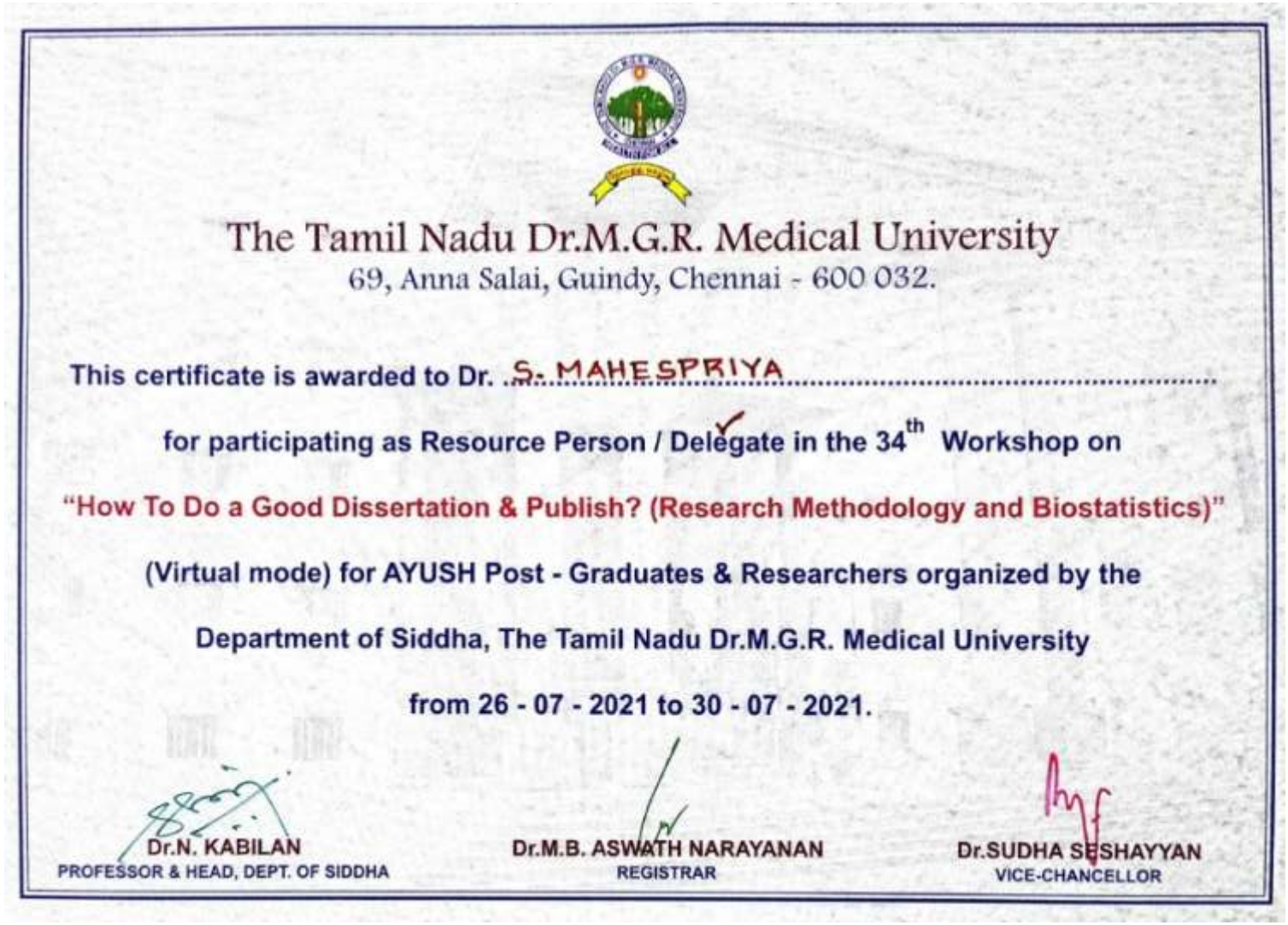
Address of Ethics Committee: National Institute of Siddha, Tambaram Sanatorium, Chennai-600047, Tamil Nadu, India	
Principal Investigator: Dr. S. Mahespriya, II Year Department of Maruthuvam - Dissertation	
Protocol title: CLINICAL EVALUATION OF *PANCHATHIKTA KIRUTHAM* (INTERNAL) AND *KARUNKOZHI THYLAM*(EXTERNAL) IN THE MANAGEMENT OF *UTHIRAVATHA SURONITHAM* (RHEUMATOID ARTHRITIS)	
Documents filed	1) Protocol 2) Data Collection forms 3) Patient Information Sheet 4) Consent form 5)SAE(Pharmacovigilance)
Clinical Trial Protocol (others- Specify)	Yes
Informed consent documents	Yes
Any other documents	-
Date of IEC approval & its number	21-12-2020;NIS/IEC/2020/D-5

We approve the clinical study to be conducted in its presented form.

The Institutional Ethics Committee expects to be informed about the progress of the study, Review periodically, any SAE occurring in the course of the study, any changes in the protocol and submission of final report.

J. Lakshmi Kantham 28/6/2021
MEMBER SECRETARY
INSTITUTIONAL ETHICS COMMITTEE
NATIONAL INSTITUTE OF SIDDHA
CHENNAI 600 047
Member Secretary

28/6/2021
CHAIRMAN / VICE-CHAIRMAN
INSTITUTIONAL ETHICS COMMITTEE
NATIONAL INSTITUTE OF SIDDHA
CHENNAI - 600 047.
Chairman



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

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

This certificate is awarded to Dr. S. MAHESPRIYA

for participating as Resource Person / Delegate in the 34th Workshop on

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

(Virtual mode) for AYUSH Post - Graduates & Researchers organized by the

Department of Siddha, The Tamil Nadu Dr.M.G.R. Medical University

from 26 - 07 - 2021 to 30 - 07 - 2021.

Dr.N. KABILAN
PROFESSOR & HEAD, DEPT. OF SIDDHA

Dr.M.B. ASWATH NARAYANAN
REGISTRAR

Dr.SUDHA SESHAYYAN
VICE-CHANCELLOR

Clinical Trial Details (PDF Generation Date :- Sun, 29 May 2022 02:35:03 GMT)

CTRI Number	CTRI/2021/09/036341 [Registered on: 08/09/2021] - **Trial Registered Prospectively**
Last Modified On	22/11/2021
Post Graduate Thesis	Yes
Type of Trial	Interventional
Type of Study	Drug Siddha
Study Design	Other
Public Title of Study	PANCHATHIKTA KIRUTHAM (INTERNAL)AND KARUNKOZHI THYLAM (EXTERNAL) IN RHEUMATOID ARTHRITIS
Scientific Title of Study	CLINICAL EVALUATION OF PANCHATHIKTA KIRUTHAM (INTERNAL MEDICINE) AND KARUNKOZHI THYLAM (EXTERNAL MEDICINE) IN THE MANAGEMENT OF UTHIRAVATHA SURONITHAM (RHEUMATOID ARTHRITIS)

Secondary IDs if Any

Secondary ID	Identifier
NIL	NIL

Details of Principal Investigator or overall Trial Coordinator (multi-center study)

Details of Principal Investigator	
Name	Dr S Mahespriya
Designation	PG Scholar
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Details Contact Person (Scientific Query)	
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Details Contact Person (Public Query)	
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	India	
	Phone	9942737718
	Fax	22381314
	Email	mahespriya237@gmail.com

Source of Monetary or Material Support

Source of Monetary or Material Support
> Ayothidosspandithar Hospital National Institute of Siddha Tambaram Sanatorium Chennai 47

Primary Sponsor

Primary Sponsor Details	
Name	National Institute of Siddha
Address	Ayothidosspandithar Hospital National Institute of Siddha Tambaram Sanatorium Chennai 47
Type of Sponsor	Research institution and hospital

Details of Secondary Sponsor

Name	Address
NIL	NIL

Countries of Recruitment

List of Countries
India

Sites of Study

Name of Principal Investigator	Name of Site	Site Address	Phone/Fax/Email
Dr S Mahespriya	Ayothidoss Pandithar Hospital	Room no 1 Department of Maruthuvam National Institute Of Siddha Chennai -47 Kancheepuram TAMIL NADU	9942737718 22381314 mahespriya237@gmail.com

Details of Ethics Committee

Name of Committee	Approval Status	Date of Approval	Is Independent Ethics Committee?
Institutional Ethics Committee	Approved	21/12/2020	No

Regulatory Clearance Status from DCGI

Status	Date
Not Applicable	No Date Specified

Health Condition / Problems Studied

Health Type	Condition
Patients	Rheumatoid arthritis with rheumatoid factor, unspecified

Intervention / Comparator Agent

Type	Name	Details
Intervention	Drug-Panchathikta kirutham (internal) Drug- Karunkozhi thylam(external)	Drug(internal)-Panchathikta kirutham Dosage-Kaal palam (8.5gm) Duration- 45 days Drug(external) Karunkozhi thylam Dosage -Required quantity of external application Duration- 45 days
Comparator Agent	NIL	NIL

Inclusion Criteria

Inclusion Criteria	
Age From	20.00 Year(s)
Age To	50.00 Year(s)
Gender	Both
Details	Age : 20 years-50 years Sex: Male ,female and transgender Insidious onset of Polyarthritis in the joints. Prolonged morning stiffness (for 6 weeks or more) Swelling of multiple joints involved for 6 weeks or more. Slow progressive signs of inflammation of joints. E.g. Pain, tenderness, warmth >6

	weeks Symmetrical joint involvement Swelling especially in interphalangeal joints. Rheumatoid factor positive or negative. Patients who are willing to attend OPD or willing for admission IPD. Patients who are willing to undergo Radiological investigation and other laboratory investigation. Patient who are willing to sign the informed consent stating that he/ she will consciously stick to the treatment during 48 days but can stop opt out of the trail of his /her own conscious discretion.

Exclusion Criteria

Exclusion Criteria	
Details	Pregnancy and lactating mother Diabetes mellitus History of trauma Any other arthritis Any other serious systemic illness like Cancer, Cardiac disease. Systemic complication of Rheumatoid arthritis. Characteristic deformities of hands and feet in Rheumatoid arthritis. (Z –deformity, Boutonniere deformity, Swan neck deformity in hands, Hammer toe)

Method of Generating Random Sequence	Not Applicable
Method of Concealment	Not Applicable
Blinding/Masking	Open Label

Primary Outcome

Outcome	Timepoints
Assessment of pain will be done by Universal pain assessment scale and other clinical signs and symptoms will be assessed by Gradation method	12 months

Secondary Outcome

Outcome	Timepoints
Laboratory investigations such as RA factor, ESR, CRP, ASO titre, Anti CCP will be assessed before and after treatment. Secondary outcome will be assessed by comparing the parameters pre and post treatment Envagaithervu, Neikuri and neerkuri , Udal thadhukkal, Uyirthadhukkal, Kaalam etc, in Uthiravatha suronitham patients.	12 months

Target Sample Size	**Total Sample Size=**30 **Sample Size from India=**30 **Final Enrollment numbers achieved (Total)=**Applicable only for Completed/Terminated trials **Final Enrollment numbers achieved (India)=**Applicable only for Completed/Terminated trials
Phase of Trial	Phase 3
Date of First Enrollment (India)	03/10/2021
Date of First Enrollment (Global)	No Date Specified
Estimated Duration of Trial	**Years=**1 **Months=**0 **Days=**0
Recruitment Status of Trial (Global)	Not Applicable
Recruitment Status of Trial (India)	Open to Recruitment

NATIONAL INSTITUTE OF SIDDHA, CHENNAI – 600047

BOTANICAL CERTIFICATE

Certified that the following plant drugs used in the Siddha formulations **"Panchathiktha kirutham"** (Internal) and **"Karunkozhi thylam"** (External) taken up for Post Graduation Dissertation studies by **Dr.S.Mahespriya** M.D.(S), II year, Department of Maruthuvam, 2021, are identified through Visual inspection, Experience, Education & Training, Organoleptic characters, Morphology and Taxonomical methods as

Azadirachta indica A. Juss. (Meliaceae), Stem Bark & Seed oil
Tinospora cordifolia (Willd.) Meirs (Menispermaceae), Stem
Justicia adhatoda Linn. (Acanthaceae), Leaves
Trichosanthes cucumerina Linn. (Cucurbitaceae), Whole plant
Solanum surattense, Burm.f (Solanaceae), Whole plant
Alpinia officinarum Hance (Zingiberaceae), Rhizome
Embelia ribes Burm. f. (Myrsinaceae), Fruit
Cedrus deodara (Roxb.) Loud. (Pinaceae), Wood
Scindapsus officinalis Schott. (Araceae), Fruit
Zingiber officinale Rosc. (Zingiberaceae), Dried rhizome
Coscinium fenestratum Colebr. (Menispermaceae), Stem
Glycyrrhiza glabra Linn. (Fabaceae), Root
Piper nigrum Linn. (Piperaceae), Fruit and Root
Saussurea lappa C.B.Clarke (Asteraceae), Root
Wrightia tinctoria (Rottler.) R.Br. (Apocynaceae), Seeds
Carum copticum Benth & Hook. f. (Apiacea), Fruit
Plumbago zeylanica Linn. (Plumbaginaceae), Root
Picrorhiza scrophulariiflora Royle ex Benth. (Scropulariaceae), Root

Nelumbo nucifera Gaertner (Nelumbonaceae), Root tuber

Acorus calamus Linn. (Araceae), Rhizome

Piper longum Linn. (Piperaceae), Root

Rubia cordifolia Linn.(Rubiaceae), Root

Aconitum heterophyllum Wall.ex Royle (Ranunculaceae), Root

Operculina turpethum (Linn.) Silva Manso (Convolvulaceae), Root

Hyoscyamus niger Linn. (Solanaceae), Seed

Shorea robusta Gaertn.f. (Dipterocarpaceae), Oleo resin

Brassica juncea (Linn.) Czern. & Coss. (Brassicaceae), Seed

Cocos nucifera Linn. (Arecaceae), grated kernel juice

Certificate No: NISMB4832021

Date: 29-07-2021

29/7/21

Authorized Signatory

Dr. D. ARAVIND, M.D.(S), M.Sc.
Assistant Professor
Department of Medicinal Botany
National Institute of Siddha
Chennai - 600 047, India

AUTHENTICATION CERTIFICATE

Certificate No: Gun/Aut/24/21 Date: 07.07.2021

Certified that the following minerals/ metals/ animal products used in the Siddha formulation ***Pancha Thikta Kirutham (Internal) & Karunkozhi thylam (External)*** taken up for the Post Graduate Dissertation study by **Dr. S. MAHESPRIYA,** Department of Maruthuvam, National Institute of Siddha, Chennai-47 are correctly identified and authenticated through visual inspection/ experience, organoleptic characters, morphology,etc.

1. ***Cow's Ghee***
2. ***Karunkozhi***
3. ***Evucharam*** **(Potassium carbonate)**

07/07/2021

Head of the Department

Chennai-47

07.07.2021

Prof. Dr. R. Meenakumari
Dean / Director
National Institute of Siddha
Tambaram, Chennai-47
Ministry of AYUSH, Govt of India

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Contact: 9710437419
Website: www.nobleresearchsolutions.com

CERTIFICATE

Date: 24.05.2022

To,

Dr.S.Mahespriya
National Institute of Siddha,
Chennai, Tamil Nadu, India

Project Id: NRS/AS/0737/09/2021

This is to certify that Dr.S.Mahespriya from National Institute of Siddha, Chennai 600047, Tamil Nadu, India has carried out the following activity at our facility for the trial drug PG

S.No	Study Description
1.	Standardization, Physicochemical & Phytochemical Evaluation of study drug PG
2.	TLC and HPTLC Analysis
3.	Heavy Metal Analysis
4.	Aflatoxin assay (B1,B2,G1,G2)
5.	Pesticide Residue Analysis Organochlorine pesticides Organophosphorus pesticides Pyrethroids
6.	Sterility Test and Test for Specific Pathogens

Note:

- *Annexure was attached as a separate enclosure along with this certificate.*

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Certificate of Appreciation

This Certificate is proudly presented to

Dr. S. MAHES PRIYA

for authoring/ ~~co-authoring~~ the poster presentation titled

PREVENTIVE MEASURES OF EYE DISEASE IN SIDDHA SYSTEM OF MEDICINE AND SCIENTIFIC REVIEW

*in the National Conference on "**Siddha Science for Preventive and Promotive Health**" on the **Third Siddha Day** organised by Central Council for Research in Siddha, National Institute of Siddha in association with Directorate of Indian Medicine and Homoeopathy held on 13th January, 2020 at Amma Arangam, Shenoy Nagar, Chennai.*

Prof. Dr. P. Parthibhan
Joint Director
Directorate of Indian Medicine & Homoeopathy

Prof. Dr. R. Meenakumari
Director
National Institute of Siddha

Prof. Dr. K. Kanakavalli
Director General
Central Council for Research in Siddha

Certificate No: ISD/Pro/Pat/ 110

National Institute of Siddha

(Ministry of AYUSH, Govt. of India)

Tambaram Sanatorium, Chennai – 600 047

Certificate

OF APPRECIATION

This is to certify that Dr. Dr. S. MAHESPRIYA, PGT Scholar, Dept of Maruthuvam

has given Oral Presentation on the topic entitled A cross sectional study on Body constitution (Dhega Prakrutham) in Urtaisuvatha Surunitham (RA) patients Reporting at APH, NIS, Chennai. in the National Seminar on

"Recent Research in Siddha System of Medicine" held on 25.03.2021 & 26.03.2021 at National Institute of Siddha, Tambaram Sanatorium, Chennai.

Prof. Dr. M. Meenakshi Sundaram
Dean i/c

Prof. Dr. R. Meenakumari
Director

Research Article

www.ijrap.net (ISSN:2229-3566)

A CROSS-SECTIONAL STUDY ON BODY CONSTITUTION (DHEGA ILAKKANAM) IN UTHIRAVATHA SURONITHAM (RHEUMATOID ARTHRITIS)

S. Mahespriya [1], H. Vetha Merlin Kumari [2]*, H. Nalini Sofia [2], T. Lakshmi Kanthan [3], R. Meena Kumari [4]

[1] PG scholar, Department of Maruthuvam, National Institute of Siddha, Chennai, Tamil Nadu, India

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2. Associate professor, Department of Maruthuvam, National Institute of Siddha, Chennai, Tamil Nadu, India

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Received on: 28/07/21 Accepted on: 09/09/21

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DOI: 10.7897/2277-4343.1205140

ABSTRACT

Background: Siddha medicine is an ancient script of medicine has been originated in South India. The concept of the Siddha system is based on fundamental principles of 96 thathuvangal which include five basic elements of the Universe, Udal thadhugal, and Uyir thadhugal etc. The physical health of the human body is maintained by three humors vatham, pitham, kabam which are the basic vital forces of humans. Udaliyal assessment is an essential tool, to diagnose any variation in the three vital forces. This study was to evaluate the body constitution in Uthiravatha Suronitham (Rheumatoid arthritis). This study was conducted in the outpatient department maruthuvam, Ayothidoss pandithar hospital, National Institute of Siddha, Chennai. 50 Uthiravatha Suronitham patients were selected to analyze the body constitution of Uthiravatha suronitham disease. The study details were collected by using the questionnaire in the data collection questionnaire. vathakaba thegi and vathapitha thegi body constitutions were more prone to Uthiravatha suronitham disease. The traits of thegu ilakkanam, can be used for the line of treatment to the Uthiravatha suronitham patients along with dietary habits, behavioural modifications etc.

Keywords: Siddha system, Body constitution, Uthiravatha suronitham, Rheumatoid arthritis.

INTRODUCTION

The Uyirthaadhu comprises vatham (vali), pitham (Azhal), kabam (iyam). These three vital forces form the individual yakkai ilakkanam (Body constitution)[1]. Udaliyal is classified into Nine types, which forms due to the dominating level of vatham, pitham, kabam influence. When the three humours are affected by lifestyle modification, seasonal variation they cause the diseases.[2]

In Yugi vaithiya chinthamani vatha diseases are classified into 80 types. In which, Uthiravatha Suronitham is one among them. Signs and symptoms of Uthiravatha Suronitham may be correlated with Rheumatoid arthritis [3]. Rheumatoid arthritis is a chronic inflammatory, destructive, and deforming symmetrical polyarthritis associated with systemic involvement. The individuals are being with HLA – DR4 and HLA- DR1 and familial aggregation. It is characterized by deforming symmetrical polyarthritis of varying extent and severity, associated with synovitis of joints and tendon sheaths, articular cartilage loss, erosion of extra-articular bone, presence of IgM rheumatoid factor in the blood, which occurring through out of the world 3 to 4 decade of life[4,5]. The prevalence of the RA is approximately 0.8-1.0% in Europe and India, with a female to male ratio of 3:1.[6]

This study was conducted to evaluate the body constitution (vatham, pitham, kabam) of Uthiravatha suronitham noi and evaluate the personal characteristics of Uthiravatha suronitham patients with personal history, family history, dietary habits etc.

MATERIALS AND METHODS

A cross-sectional study was conducted in the outpatient department of Maruthuvam in Ayothidoss pandithar hospital, National Institute of Siddha. This study was approved by IEC (Institutional Ethics Committee)-NIS/IEC/2020/MP-5. The study was also registered in CTRI (Clinical Trial Registry India)-CTRI/2020/06/026155. In this study, 50 outpatients in between 18-70 age groups were selected without any bias. The study details were collected in the pre-designed data collection questionnaire. [2,7]

OBSERVATION AND RESULT

Table 1: Gender

Gender distribution	Number of patients	Percentage
Male	8	16 %
Female	42	84 %

Table 2: Age

Age	Number of patients (%)
18-20	1 (2%)
21-30	5 (10%)
31-40	14 (28%)
41-50	15 (30%)
51-60	13 (26%)
61-70	2 (4%)

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An Official Publication of BioSci Group of Research | An UGC Approved Journal

REVIEW ARTICLE

A Systematic Review of the Prophylactic Role On Seerana Kudineer , A Traditional Siddha Therapeutic drink in Corona Virus Disease-19(Covid-19)

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ABSTRACT

COVID 19 is a life threatening diseases. That causes a significant decline in the world's population. As a result the global economy is in recession. Several companies are actively involved in the process of inverting a new vaccine. The traditional Siddha system of medicine is a gift to the mankind, which treasure innumerate prophylactic medicines & therapeutic drinks. To encounter this COVID 19 pandemic situation globally .One such therapeutic drink is Seerana Kudineer which made of green Chilly, Seeragam (cumin seed), turmeric powder and salt. The ingredients are easily available and easily to prepare, cost effective & efficacious. They are well known for their anti-oxidant, anti -viral, thermoregulatory properties.

AIM & OBJECTIVE:

To review the Siddha and scientific literatures about the individual ingredients of Seerana Kudineer for their anti- oxidant, anti- inflammatory, anti- viral activites.

MATERIALS & METHODS:

References from Various Siddha classical texts, Data bases such as Google scholar, Pub Med, Recent research articles about COVID 19 have been studied this review article.

CONCLUSION:

This review through a light on the scientific basis of the individual ingredients as their anti-oxidant, anti-inflammatory, anti-viral properties of Seerana kudineer. Thereby paves a platform and adds value to the traditional Siddha system of medicine in the war against the COVID 19 globally.

KEYWORDS
Siddha system, Seerana Kudineer, Prophylaxis, COVID 19.

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DISSERTATION PROTOCOL

CLINICAL EVALUATION OF PANCHATHIKTA KIRUTHAM (INTERNAL MEDICINE) AND KARUNKOZHI THYLAM (EXTERNAL MEDICINE) IN THE MANAGEMENT OF UTHIRAVATHA SURONITHAM (RHEUMATOID ARTHRITIS)

PRINCIPAL INVESTIGATOR:

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Chennai – 47

1. TITLE OF THE PROJECT:

Clinical evaluation of Panchathikta kirutham(Internal) and Karunkozhi thylam(External) for the management of Uthiravatha suronitham (Rheumatoid arthritis) .

2. NAME OF THE INSTITUTION:

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Telephone no: 044-22411611
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6. BACKROUND:

Siddha system is an ancient system of medicine; it is originated from South India. Siddha medicine has the ability to cure the long standing disease. Siddhars classified the diseases into 4448 types based on Mukkutra theory [vatham, pitham, kapam]. Importance of three humours in human body is well explained in Thiruvalluvar's work, i:e the increase or decrease of three humours causes diseases.

Yugi classified diseases based on sign and symptoms. In his text book of Yugi vaithiya chinthamani, he classified the vatha diseases into 80 types. One among them is Uthiravatha suronitham. Its sign and symptoms maybe correlated with the Rheumatoid arthritis in modern medicine.

Rheumatoid arthritis is a common chronic multisystem disease of unknown etiology. It is an Autoimmune disease in which musculoskeletal system of our body undergoes inflammatory changes in articular and extra articular structures resulting in pain, disability. Its peak incidence rate is in 3^{rd} and 4^{th} decade of life and more frequently in female than male. Its 50% of major genetic contribution is susceptibility to the HLA region, in which HLA-DR4 is more common and HLA-DR1 is most important in Indians.

The world wide prevalence of Rheumatoid arthritis has been estimated as 0.24% based upon the Global Burden of Disease 2010 study. Prevalence of Rheumatoid arthritis is believed to be 1-2% and worldwide 1%. In India local survey in Delhi shows prevalence of this disease affecting 0.75% population. The life time risk of developing Rheumatoid arthritis is 3.6% in women and 1.7% in men.

The formulation selected for this dissertation study is Panchathikta kirutham (internal) and Karunkozhi thylam (external) from the text book of Chikicharathana deepam (vaithiya nool) .Which is indicatied for Narambu, Asthi majjai thathuvil samanthapatta vayu, Vatharaktham, mudakku vatham.

Most of the herbs in the medicines that have anti-inflammatory, anti-arthritic, immnuomodulatory, anti-spasmodic activities. So I have chosen the medicines for the management of Uthiravatha suronitham.

7. AIM:

To study the efficacy of **Panchathikta kirutham** internally and **Karunkozhi thylam** externally in Uthiravatha suronitham (Rheumatoid arthritis) patients and document the study outcome through the scientific approach.

8. OBJECTIVES:

A) Primary Objectives:

To evaluate the therapeutic efficacy of PANCHATHIKTA KIRUTHAM (internal medicine) and KARUNKOZHI THYLAM (External medicine) in UTHIRAVATHA SURONITHAM (Rheumatoid arthritis).

B) Secondary objectives:

- To study the Siddha basic principles like Envagaithervu, Neikuri and neerkuri , Udal thadhugal, Uyirthadhugal, Kaalam etc,in Uthiravatha suronitham patients.
- To study the co – morbid factors and age, sex , family history, personal history and other clinical symptoms etc.

9. LITERATURE REVIEW:

வைகிதமாய்க் **கணைக்காலு முழங்கால் தானு**
மற்கடஞ் சந்துபுற வடியும் வீங்கிச்
செய்கிதமாய் **சிறுவிரல்கள் மிகவு நொந்து**
சிந்தைதடு மாறியே சலிப்புண் டாகும்
பைகிதமாம் பயித்தியத்தில் வாத மிஞ்சிப்
பாரமா **யுற்பவித் தழலுண் டாகும்**
உய்கிதமாய் மசனமது தானும் வேண்டா
உதிரவாதச் சுரோணிதத்தி னுணர்ச்சியாமே.

யூகி வைத்திய சிந்தாமணி 800.

Symptoms:

கணைக்கால் முழங்கால் சந்து வீக்கம்	Swelling of major and minor joints
சிறுவிரல்கள் மிகவும் நொந்து	Pain and tenderness of minor joints
சிந்தை தடுமாற்றம்	Depression, Stress
உற்பவித் தழலுண் டாகும்	Fever

10. STUDY DESIGN AND CONDUCT OF STUDY:

10.1 STUDY TYPE : Open clinical study

10.2 STUDY PERIOD : 12 months

10.3 SAMPLE SIZE : 30 Patients

10.4 STUDY PLACE :

OPD of Ayothidoss Pandithar Hospital,
National Institution of Siddha
Tambaram sanatorium,
Chennai – 47 .

10.5 JUSTIFICATION FOR THE CONDUCT OF STUDY:

The formulation of PANCHATHIKTA KIRUTHAM (Internal medicine) and KARUNKOZHI THYLAM (External medicine) is a sashthric preparation, described in Siddha text book, Chikicha rathna deepam (Vaithiyanool).

The Panchathikta kirutham and Karunkozhi thylam are a Siddha formulation . Most of the ingredients in the preparations are known to cure Vatha disease. Most of the ingredients posses veppa veeriyam (hot potency) and Kaippu suvai (pungent taste), which will balance and rectify the deranged Vatha dhosam.

Several studies have proved the Anti inflammatory activities of the Vembu pattai, seenthil kodi, adathodai,peipudal, kandangaththiri. Therefore the formulation will be effective in the management of UTHIRAVATHA SURONITHAM (RHEMATOID ARTHRITIS).The trial drugs has not under gone for clinical trial.

So I have chosen the medicines clinical trial and standardization for the dissertation as a part of partial fulfillment of post graduation degree.

11. TREATMENT PLAN:

According the Siddha line of treatment, before administrating the medicine purgation should be given to Vatha diseased patients to neutralize the deranged Vatham.

Purgative medicine: AGASTHIYAR KUZHAMBU

Dosage : 1 kundri (130 mg)

Adjuvent : Injirasam (Ginger juice)

12. DRUG FORMULATION:

INTERNAL MEDICINE:

Drug : Panchathikta kirutham

Dosage : Kaal palam (8.5gm)

Duration : 45 days

Reference : Chikicharathana deepam (Vaithiya nool), 2007

Author : C.Kannusami pillai

Page no : 217

Publication : B.Rathina Nayakkar and Sons,

No.26 Venkatrama street, Kondithoppu, Chennai.

EXTERNAL MEDICINE:

Drug : Karunkozhi thylam

Dosage : Required quantity of external application

Duration : 45 days

Reference : Chikicharathana deepam (Vaithiya nool), 2007

Author : C.Kannusami pillai

Page no : 205

Publication : B.Rathina Nayakkar and Sons,

No.26 Venkatrama street , Kondithoppu, Chennai

DIETARY ADVICE: (இச்சாபத்தியம்)

உலகிலிச்சா பத்தியங்கண் டீர்கூர மாங்க
யலகினமைக் காய்கொத் தவரை – கலகமுனி
மந்தவகை கூழ்ப்பாண்ட மாகடுகெள் ளென்றோது
மிந்தவகை யீத்துண்ப தே.

தேரையர் வெண்பா.

பாகற்காய்,மாங்காய்,கத்தரிக்காய்,கொத்தவரைக்காய், கல்யாணப்பூசணிக்காய், அகத்திக்கீரை,மந்தமுள்ள பதார்த்த வகைகள்,கடுகு,எள் முதலியவற்றை நீக்கிப்பிறவற்றைக் கொள்வது இச்சாபத்தியமாகும். காடை,வெள்ளாட்டுஇறைச்சி, பசும்பால்,நெய்,மோர்,எலுமிச்சம் சேர்த்து கொள்ளலாம்.

13. STANDARD OPERATING PROCEDURE FOR PANCHATHIKTA KIRUTHAM:

Source of Raw drugs:

The required raw drugs will be purchased from a well reputed country shop and fresh leaves will be collected from kancheepuram District. This drug will be authenticated by the Assistant professor of Medicinal Botany, NIS. The raw drug will be purified and then the study drug will be prepared as per SOP in Gunapadam laboratory, National Institute of Siddha.

INGREDIENTS:

NAME OF PLANT/MINERAL	USED PART	BOTANICAL NAME	WEIGHT	WEIGHT IN GRAMS
Vembu pattai	Bark	*Azadirachta indica.A.Juss*	10 palam	350 grams
Seenthil kodi	Whole plant	*Tinospora cordifolia Miers ex Hook.f. &Thoms*	10 palam	350 grams
Adathodai	Whole plant	*Justica adathoda.L*	10 palam	350 grams
Peipudal	Whole plant	*Trichosanthes curcumerina.Lin*	10 palam	350 grams
Kandangaththiri	Whole plant	*Solanum surattense, Burm.f.*	10 palam	350 grams
Chittaratai	Root	*Alpinia officinarum.Hance*	½ varagan	2.1 gram
Vaivilangam	Seed	*Embelia ribes.Burm.f*	½ varagan	2.1 gram
Devadaru	Bark	*Cedrus deodara G.Don*	½ varagan	2.1 gram
Anaittippili	Fruit	*Scindapsus officinalis,schott*	½ varagan	2.1 gram
Evaacharam		*Potassium carbonate*	½ varagan	2.1 gram
Chukku	Rhizome	*Zingiber officinale,Rosc*	½ varagan	2.1 gram
Maramanjal	Rhizome	*Coscinium fenestratum.Colebr*	½ varagan	2.1 gram
Adhimaduram	Root	*Glycyrrhiza glabra,Linn*	½ varagan	2.1 gram
Cheviyam	Root	*Piper nigrum*	½ varagan	2.1 gram
Kottam	Root	*Costus speciosus J.E.Smith*	½ varagan	2.1 gram
Milagu	Seed	*Piper nigrum.Linn*	½ varagan	2.1 gram
Vetpalaiyarisi	Seed	*Wrightia tinctoria.R.Br*	½ varagan	2.1 gram
Omam	Seed	*Carum copticum.f*	½ varagan	2.1 gram
Kodiveliverpattai	Root bark	*Plumbago indica.Linn*	½ varagan	2.1 gram

Kadugurohini	Root	*Picrorhiza scrophulariiflora Pennell*	½ varagan	2.1 gram
Thamarai kilangu	Tuber	*Nelumbo nucifera.Gaertn*	½ varagan	2.1 gram
Vasambu	Root	*Acorus calamus.Linn*	½ varagan	2.1 gram
Thippili ver	Root	*Piper longum.Linn*	½ varagan	2.1 gram
Manjitti	Root	*Rubia cordifolia.Linn*	½ varagan	2.1 gram
Atividayam	Root	*Aconitum heterophyllum Wall ex Royle*	½ varagan	2.1 gram
Shivadai	Root	*Operculina turperthum.Linn*	½ varagan	2.1 gram
Kurosani omam	Seed	*Hyoscymus niger. Linn*	½ varagan	2.1 gram
Kungiliyam	Pisin	*Shorea robusta,Gaertn.f*	5 palam	175 grams
Cow ghee			½ padi	650 ml

Purification of raw drugs:

The following raw drugs will be purified as per the Siddha text.

Ref: Chikicharathna deepam , Kannusamy pillai,Edition 2007,Pg no:28-34.

1. Vembu pattai :

   Clean by white cloth and peal the outer skin.

2. Seenthil kodi :

   Peal the outer skin.

3. Adathodai :

   Without washing in water, clean it with white cloth then remove the rotten and ripen leaves.

4. Peipudal :

   Without washing in water, clean it with white cloth then remove the rotten and ripen leaves.

5. Kandangaththiri :

Without washing in water, clean it with white cloth then remove the rotten and ripen leaves

6. Chittaratai :

Peal of the outer skin, make into small pieces and dry it under the sunlight.

7. Vaivilangam:

Dry it under the sunlight and fry it.

8. Devadaru :

Clean by white cloth and peal the outer skin.

9. Anaittippili:

Soak in vinegar for three hours and then dry it out.

10. Evaacharam :

Dissolve it with goat's urine and then dry it out in sunlight.

11.Chukku :

Soak in lime stone separated water for three hours, outer layer will be removed.

12. Maramanjal :

Soak in vinegar for three hours and then dry it out.

13.Adhimaduram:

Wash with clean water, Skin is pealed and made into small pieces.

14. Cheviyam:

Soak in vinegar for three hours and then dry it out.

15.Kottam :

Clean and dry it under the sunlight.

16.Milagu :

Soak in buttermilk for one hour fifteen minutes and then roast it.

17.Vetpalaiyarisi :

Dry it under the sunlight.

18.Omam :

Dip in lime stone water after then dry it.

19.Kodiveliverpattai :

Inner nerve root of the bark will be removed and the bark alone will be powder. The above said powder will be subjected to steaming process in Cow's milk for three hours.

20.Kadugurohini:

Soak in neem leaf juice in 3 hours and dry it under sunlight.

21.Thamarai kilangu :

Peal the outer skin, nerve roots and then clean it.

22.Vasambu :

Take the shot charcoal.

23.Thippili ver :

Clean and dry it.

24.Manjitti :

Dry it under the sunlight.

25. Atividayam :

Soak in vinegar for three hours and then dry it out.

26. Shivadai:

Remove the veins of the root, boil it out in milk and then dry it out in sunlight

27.Kurosani omam :

Clean and dry it.

28. Kungiliyam :

Soak in liquor for one day.

Preparation:

First 5 drugs will be crushed and kept in mudpot. Water will be added eight times in the weight of the drugs and boiled until it becomes to the ratio 1/8 then1/2 padi ghee will be added to the above. Then the other drug will be grinded finely with milk and mixed with above mixture and boiled until it becomes ghee consistency.

KARUNKOZHI THYLAM:

Ingredients:

1. Karunkozhi(Adequate quantity)

2. Kadugu (Adequate quantity) (*Brassica juncea .czeen & coss)*

3. Neem oil- 1/4Padi (325 ml) (*Azadirachta indica.A.Juss)*

4. Coconut milk -1/4 padi (325ml) (Cocos nucifera.*Linn*)

Preparation:

The adult Karunkozhi which is going to lay its first egg will be taken and its skin, head, lower extremities and intestinal parts will be removed. Mustard seeds will be kept inside stomach and crushed in Ural. Then each 325 ml of neem oil and coconut milk will be added to above mixture and boiled until the flesh become red and oil get separated from it. Then the oil will be filtered and collected.

14. SUBJECT SELECTION:

The patients reporting at OPD of Ayothidoss Pandithar Hospital with symptoms of Inclusion criteria will be subjected to a screening test and documented using screening proforma.

15. SELECTION CRITERIA:

INCLUSION CRITERIA:

- Age : 20-50 years
- Sex: Male ,female and transgender
- Insidious onset of Polyarthritis in the joints.
- Prolonged morning stiffness (for 6 weeks or more)
- Swelling of multiple joints involved for 6 weeks or more.
- Slow progressive signs of inflammation of joints. E.g. Pain, tenderness, warmth >6 weeks
- Symmetrical joint involvement
- Swelling especially in interphalangeal joints.
- Rheumatoid factor positive or negative.
- Patients who are willing to attend OPD or willing for admission IPD.
- Patients who are willing to undergo Radiological investigation and other laboratory investigation.
- Patient who are willing to sign the informed consent stating that he/ she will consciously stick to the treatment during 48 days but can stop opt out of the trail of his /her own conscious discretion.

EXCLUSIONCRITERIA:

- Pregnancy and lactating mother
- Diabetes mellitus
- History of trauma
- Any other arthritis
- Any other serious systemic illness like Cancer, Cardiac disease.
- Systemic complication of Rheumatoid arthritis.
- Characteristic deformities of hands and feet in Rheumatoid arthritis.
  (Z –deformity, Boutonniere deformity, Swan neck deformity in hands, Hammer toe)

WITHDRAWAL CRITERIA:

A) Intolerance to the drug and development of any serious adverse effects during the trial (If ADR is reported the patients will be directed to RPC) Increase in severity of symptoms.

B) The patient who will not take the medication regularly.

C) Patient turning unwilling to continue in the course of clinical trial.

16. ASSESSMENT AND INVESTIGATION:

A) Clinical assessment

B) Siddha assessment

C) Routine investigation

a) Modern parameters

b) Siddha parameters

A) CLINICAL ASSESSMENT:

- Arthritis involving three or major joints
- Symmetrical joint involvement
- Morning stiffness
- Anorexia
- Spindle shape appearance of fingers
- Depression
- Swelling of small joint of hands and foot.
- Rheumatoid nodules

B) SIDDHA ASSESSMENT:

THINAI (LIVING PLACE):

1. Kurinji (Hill areas) :
2. Mullai (Forest) :
3. Marutham(Fertile land) :

4. Neithal(Costal area) :
5. Paalai(Desert) :

PARUVA KAALAM(SEASON) :

1. Karkaalam (Avani &Purataasi) :
2. Koothir kaalam(Iyappasi &Karthigai) :
3. Munpanikaalam(Margazhi &Thai) :
4. Pinpani kaalam(Masi&Panguni) :
5. Elavenil kaalam(Chithirai &Vaigasi) :
6. Muthuvenil kaalam(Aani&Aadi):

IYMPORIKAL:

1. Mei (Skin) :
2. Vaai (Tongue) :
3. Kan(Eye) :
4. Mooku(Nose) :
5. Sevi(Ear) :

IYMPULANKAL:

1. Ooru(Thoduthalai arivadhu) :
2. Suvai(Arusuvai arivadhu) :
3. Oli(Kaanapaduvathu) :
4. Naatram(Vasani arivathu) :
5. Osai(Ketkapaduvathu) :

KANMENTHIRIYANGAL:

1. Vaai(Buccal cavity) :
2. Kaal(Lower limb) :
3. Kai(Upper limb) :
4. Eruvaai(Anorectal region) :
5. Karuvaai(Uro genital region) :

KANMAVIDAYAM:

1. Vasanam(Vaarthayadal) :
2. Kamanam(Nadappadhu) :
3. Dhaanam(Koduthal,Vangal) :
4. Visarkam(Malam viduthal) :
5. Aanantham(Magilthal) :

KOSANGAL:

1. Paru udambu(Annamayakosam) :
2. Valiu dambu(Pranamaya kosam) :
3. Mana udambu(Manomaya kosam) :
4. Arivu udambu (Vingnaamaya koam) :
5. Inba udambu (Aanantha mayakosam) :

PATHU NAADIGAL:

1. Edakalai :
2. Pingalai :
3. Suzhumunai :
4. Sinkuvai :
5. Purudan :
6. Kanthari :
7. Aththi :
8. Alampudai :
9. Sanguni :
10. Kugu :

EZHU UDAL KATTUGAL:

1. Saram :
2. Senneer :
3. Oon :

4. Kozhuppu :
5. Enbu :
6. Moolai :
7. Sukkilam/ Suronitham:

MUKKUTRA IYAL:

VATHAM:

1. Praanan :
2. Abaanan :
3. Samaanan :
4. Udhanaan :
5. Viyaanan :
6. Naagan :
7. Koorman :
8. Kirukaran
9. Devathathan :
10. Dhananjeyan :

PITHAM:

1. Anarpitham :
2. Prasakam :
3. Saathakam :
4. Aalosakam :
5. Ranjakam :

KABAM:

1. Avalambagam :
2. Kilethegam :
3. Santhigam :
4. Tharpagam :
5. Pothagam :

ENNVAGAI THERVUGAL :

1. Naadi(Pulse perception) :
2. Naa(Tongue) :
3. Niram(Complexion) :
4. Mozhi(Voice) :
5. Vizhi(Eyes) :
6. Sparisam
   (Palpatory perception) :
7. Malam(Bowel habits) :
8. Moothiram(Urine) :
   (Neerkuri&Neikuri)

ROUTINE INVESTIGATION:

HEMATOLOGY:

- Hb :
- Total WBC count :
- Differential count :
  a) Polymorphs :
  b) Lymphocytes :
  c) Eosinophils :
  d) Monocyte :
  e)Basophils :
- ESR : ½ HR
  1HR
- Blood sugar :
  Fasting :

  PP :

- Lipid profile :

  a) Serum Total cholesterol

  b) Serum triglycerides

  c) HDL cholesterol

  d) LDL cholesterol

  e) VLDL cholesterol

- Renal function test :

  a) Blood Urea

  b) Serum creatinine

- Liver function test :

  a) Serum Total bilirubin

  b) Serum Direct bilirubin

  c) Serum Indirect bilirubin

  d) SGOT

  e) SGPT

  f) Serum Alkaline phospatase

- Other test:

  a) Uric acid

  b) Serum Calcium

- URINE:

  a) Sugar (F) (PP)

- SPECIFIC INVESTIGATION:
  a) CRP
  b) RA factor
  c) ASO Titer
  d) Anti CCP

17. STUDY ENROLLMENT:

In this clinical trial, patients reporting at OPD of Ayothidoss Pandithar Hospital, NIS with the clinical symptoms of UTHIRAVATHA SURONITHAM will be enrolled in the study based on the inclusion and exclusion criteria.

The patients enrolled in this study will be informed about the objective of the study, trial drug, possible outcomes in their own language and terms understandable to them.

After ascertaining the patient's willingness, informed consent will be obtained in the consent form.

All these patients will be given unique registration card which will contains information regarding patients' Registration number, Address, Phone number, and Doctors phone number, etc. It can help to report easily if any adverse reactions arise.

Complete clinical history, complaints, and duration, examination findings-- all will be recorded in the prescribed case record form. Screening Form- I will be filled up; Form II will be used for recording the patients' history, clinical examination of signs and symptoms and Form III will be used for laboratory investigations. Patients will be advised to take the trial drug with appropriate dietary advice.

18. CONDUCT OF THE STUDY:

On 1 day the patient will be advised to take oil bath with Arakku thylam (required quantity).

On 2 nd day the patient will be advised to take purgative medication

Agasthiyar kuzhambu- 1 kundri (130 mg) with Inji surasam (Ginger juice) in early morning.

On 3 rd day patient will be asked to take Rest.

On 4th day onwards the trial drug **PANCHATHIKTA KIRUTHAM -** kaal palam (8.5 g) will be administrated orally after food twice a day and **KARUNKOZHI THYLAM** will be applied over the affected joints.

The trial drug will be given for 45 days. OPD patients will be asked to visit the hospital once in 7 days. At each clinical visit clinical assessment will be done and prognosis will be recorded. For IPD patients the clinical assessment will be recorded daily.

The results will be compared at the end of the study. Laboratory investigations will be done on the 0th day and 49th day of the trial.

19. OUTCOME OF THE STUDY

a) PRIMARY OUTCOME:

Assessment of pain will be done by Universal pain assessment scale and other clinical signs and symptoms will be assessed by Gradation method.

b)SECONDARY OUTCOME:

Laboratory investigations such as RA factor, ESR, CRP, ASO titre, Anti CCP will be assessed before and after treatment.

Secondary outcome will be assessed by comparing the parameters pre and post treatment Envagaithervu, Neikuri and neerkuri , Udal thadhukkal, Uyirthadhukkal, Kaalam etc, in Uthiravatha suronitham patients.

ACR (*American college of Rheumatism*) / EULAR (*Europian League against Rheumatism*) criteria

Symptoms duration	**Points**
< 6 weeks	**0**
> 6 weeks	**1**

Joints Distribution	**Points**
• 1 Large joint	**0**
• 2-10 Large joint	**1**
• 1-3 Smaller joints (with or without involvement of large joints)	**2**
• 4-10 Smaller joints (with or without involvement of large joints)	**3**
• > 10 joints at least 1 smaller joint)	**5**

Serology	**Points**
• RF negative and anti CCP negative	**0**
• Low RA factor positive (or) Anti CCP positive	**2**
• High RA factor positive (or) Anti CCP positive	**3**

Acute phase reaction ● Normal ESR or CRP ● Abnormal ESR (or) CRP	**Points** **0** **1**

REQUIREMENT

Patient who have at least one swollen joint and not better explained by another disease to be applied.

A score ≥6 points is required for classification as definite RA.

Reference:

John A. A. Hunter, Davidson's principle and practice medicine.

20. ADVERSE EFFECT/SERIOUS EFFECT MANAGEMENT:

If the trial patient develops an adverse reaction, he/she will be referred to the pharmacovigilance of NIS. The members of this department will assess the adverse event and recorded in the prescribed adverse reaction form. For any AE the patients will be treated with proper management at NIS, OPD.

21. DATA MANAGEMENT:

After enrolling the patient in the study, a separate file for each patient will be opened and all forms will be filed in the file. Study No. and OPD/ IPD No. will be entered on the top of the file for easy identification. Whenever the study patient visits OPD during the study period, the respective patient file will be taken and necessary recordings will be made at the CRF or other suitable forms.

The screening forms will be filed separate.

The Data recordings will be monitored for completion by Guide, HOD, Department of Maruthuvam, SRO and the adverse event will be monitored by the

members of –Pharma co vigilance of NIS. All forms will be further scrutinized in presence of an investigator by Senior Research Officer for logical errors and incompleteness of data to avoid any bias. No modification in the results is permitted for unbiased reports.

22. STATISTICAL ANALYSIS:

All the data will be entered into the computer using MS Access software with macro for logical errors and manually cross-checked for data entry error. Then the data will be exported to STATA/SPSS Software for univariate multivariate analysis. Student ‘t' test and Paired ‘t' test and Mantel-Haenszel chi-square test will be performed for determining the significance of a particular effect variable.

23. ETHICAL ISSUES:

1. To prevent any infection, while collecting a blood sample from the patient, only disposable syringes, disposable gloves, with proper sterilization of lab equipment will be used.

2. No other external or internal medicines will be used. There will be no infringement on the rights of the patient for this particular indication.

3. The data collected from the patient will be kept confidentially. The patient will be informed about the diagnosis, treatment, and follow-up.

4. After the consent of the patient (through consent form), they will be enrolled in the study.

5. Informed consent will be obtained from the patient explaining in the understandable language to the patient.

6. Treatment would be provided free of cost.

7. In conditions of treatment failure, adverse reactions, patients will be given alternative treatment at the OPD of Ayothidoss Pandithar hospital, National Institute of Siddha with full care throughout the end.

8. The patients who are excluded [as per the exclusion criteria] will be given proper treatment at Ayothidoss Pandithar hospital of National Institute of Siddha.

9. The Anti CCP test will be done NABL certified laboratories and the charges will be borne by the investigator.

ASSESSMENT FORMS:

Form - I	Screening and Selection Proforma
Form - II	Clinical assessment form
Form - III	Laboratory investigation form
Form – IV	Drug Compliance form
Form - V	Patient Information sheet
Form – VI	Informed Consent form
Form -VII	Withdrawal form
Form- VIII	Pharmacovigilance form
Form- IX	Dietary Advice sheet.

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NATIONAL INSTITUTE OF SIDDHA

AYOTHIDOSS PANDITHAR HOSPITAL , CHENNAI-600047.

Clinical evaluation of Panchathikta kirutham (Internal) and Karunkozhi thylam (External) in Uthiravatha suronitham(Rheumatoid arthritis)

FORM 1 SCREENING & SELECTION PROFOMA

1. SI NO: ……. 2.OP/IP NO: …….. 3. NAME: ……

4. RELIGION: H/C/M/O 5.AGE: …….. 6. GENDER: …….

7. OCCUPATION: ……. 8.INCOME: ……..

INCLUSION CRITERIA	YES/NO	EXCLUSION CRITERIA	YES/NO
1.Age(17-60)		Diabetes mellitus	
2.Sex M/F		Systemic complication of Rheumatoid arthritis	
3.SYMPTOMS PRESENT Arthritis of three or more joint		Hypertension	
Symmetrical joint involvement		Pregnancy and lactation	
Swelling especially in inter phalangeal joints		Osteoarthritis	
Prolonged Morning stiffness of joints(for 6 wks/longer) Symptoms of Low grade fever, Anorexia, mental stress		Any other serious illness like cancer	
Willingness to undergo Radiological & Laboratory investigations		cardiac diseases	
Willing to sign the informed consent		Tubercular Arthritis	
Rheumatoid Factor- Positive		Psoriatic Arthritis	
		Characteristic deformities of hands and feet in RA	
		Gouty Arthritis	
		History of trauma	
		Use of narcotic drugs	

ADMITED TO TRAIL: YES/NO If yes serial No:

Date:

Signature of the Investigator:

Signature of the Guide:

Signature of the HOD:

NATIONAL INSTITUTE OF SIDDHA, CHENNAI – 47

AYOTHIDASS PANDITHAR HOSPITAL

DEPARTMENT OF MARUTHUVAM

CLINICAL EVALUATION OF PANCHATHIKTA KIRUTHAM (INTERNAL MEDICINE) AND KARUNKOZHI THYLAM (EXTERNAL MEDICINE) IN THE MANAGEMENT OF UTHIRA VATHA SURONITHAM (RHEUMATOID ARTHRITIS)

FORM II-CLINICAL ASSESSMENT FORM

1.Serial No : _____ **2. OP/IP No: ----------**

3.Name : _____ **4. Gender: Male / Female**

5.Age(years): _____ **6.DOB :**

7.Address : _____

_____

8. A) Occupation : **B)Nature of work:**

9. Educational status: A) Illiterate ☐ **B) Literate** ☐

10.Height : cms Weight : kg:

BMI : Underweight ☐ Normal weight ☐
Over weight ☐ Obesity I ☐
Obesity II ☐ Obesity III ☐

Date of Trial Drug Initiation _____ **Date of Trial Drug Cessation**_____

11. **COMPLAINTS AND DURATION**:

_____

_____

_____

12**. HABIT OF**

A) Smoking : Yes / No duration _____ years Number-

B) Tobacco cheawing : Yes / No duration _____ years

C) Betel chewing : Yes / No duration _____ years

D) Alcoholism Yes / No duration _____ years; Quantity-

13. DIETARY STYLE:

A. Pure vegetarian ☐ B. Non-vegetarian ☐

14. DRUG HISTORY:

Had the patient been treated before with allopathic drug A) Yes ☐ 2) No ☐

15. MARITAL STATUS:

1.Married ☐ 2.Unmarried ☐

No of children: ☐ Male: ☐ Female: ☐

16. FAMILY HISTORY:

Whether this problem runs in family? 1. Yes ☐ 2.No ☐

If yes, mention the relationship of affected person(s) ----------

17. MENSTRUAL HISTORY:

18. BOWEL HABITS & MICTURITION: Normal 1.Yes ☐ 2.No ☐

19. SLEEP: Sleep disturbance : Yes ☐ No ☐

If yes: ……..

20. PSYCHOLOGICAL STATE:

Normal ☐ Occupational stress ☐ Anxiety ☐ Depression ☐

21. SOCIO ECONOMIC STATUS:

FORM-II B

GENERAL EXAMINATION:

1. Body weight [Kg] :
2. Height [Cms] :
3. Body Temperature [F] :
4. Blood Pressure (mm/Hg) :
5. Pulse Rate/Min :
6. Heart Rate/min :
7. Respiratory Rate/min :

		Yes	No
8. Pallor	:		
9. Jaundice	:		
10. Clubbing	:		
11. Cyanosis	:		
12. Pedal Edema	:		
13. Lymphadenopathy	:		
14. Jugular venous pulsation	:		

SYSTEMIC EXAMINATION

Cardiovascular system :

Gastro-intestinal system :

Central Nervous system :

Urogenital system :

Endocrine system :

Locomotors system :

SIDDHA SYSTEM OF EXAMINATION

1. THEGI (BODY CONSTITUTION):

1. Vali Udal
2. Azhal Udal
3. Iya Udal
4. Thontha Udal

2. NILAM (LAND WHERE THE PATIENT LIVED MOST):

1. Kurinji (Hilly terrain)
2. Mullai (Forest range)
3. Marutham (Plains)
4. Neithal (Coastal belt)
5. Paalai (Aridregion)

3.KAALAM:

1.Kaar kaalam (Aavani-Purattasi)
2. Koothir kaalam (Ippasi-Kaarthigai)
3. Munpani kaalam (Maargazhi-Thai)
4. Pinpani kaalam (Maasi-Panguni)
5. Ilavenil kaalam (Chithirai -Vaigasi)
6. Muthuveni kaalam (Aani-Aadi)

4. GUNAM:

1. Sathuvam ☐
2. Rasatham ☐
3. Thamasam ☐

5. PORIPULANGAL (SENSORY ORGANS):

	BEFORE TREATMENT	AFTER TREATMENT
Mei (Skin)	Normal / Affected	Normal / Affected
Vai (Tongue)	Normal / Affected	Normal / Affected
Kann(Eye)	Normal / Affected	Normal / Affected
Mooku (Nose)	Normal / Affected	Normal / Affected
Sevi (Ear)	Normal / Affected	Normal / Affected

6. KANMENDRIYAM (MOTOR ORGANS):

	BEFORE TREATMENT	AFTER TREATMENT
Kai (Upper Limb)	Normal / Affected	Normal / Affected
Kaal (Lower limb)	Normal / Affected	Normal / Affected
Vai (Oral cavity)	Normal / Affected	Normal / Affected
Eruvai (Anal reg.)	Normal / Affected	Normal / Affected
Karuvai (Uro-genital region)	Normal / Affected	Normal / Affected

7. KOSANGAL (SHEATH):

	BEFORE TREATMENT	AFTER TREATMENT
Annamaya kosam	Normal / Affected	Normal / Affected
Pranamaya kosam	Normal / Affected	Normal / Affected
Manomaya kosam	Normal / Affected	Normal / Affected
Vignanamaya kosam	Normal / Affected	Normal / Affected
Ananthamaya kosam		

	Normal / Affected	Normal / Affected

8. SEVEN UDAL THAATHUKKAL (SEVEN SOMATIC COMPONENTS)

SEVEN UDAL THAATHUKKAL	BEFORE TREATMENT	AFTER TREATMENT
Saaram (Chyme)	Normal / Affected	Normal / Affected
Senneer(Blood)	Normal / Affected	Normal / Affected
Oon(Muscle)	Normal / Affected	Normal / Affected
Kozhuppu(Fat)	Normal / Affected	Normal / Affected
Enbu (Bones)	Normal / Affected	Normal / Affected
Moolai (Bonemarrow)	Normal / Affected	Normal / Affected
Sukkilam / Suronitham(Genital discharges)	Normal / Affected	Normal / Affected

9. UYIR THAATHUKKAL : [THREE HUMORS] (VALI/AZHAL/IYYAM)

A) **VALI**

	BERORE TREATMEMT	AFTER TREATMENT
Praanan		
Abaanan		
Samaanan		
Udhaanan		
Viyaanan		
Naagan		
Koorman		
Kirukaran		
Devathathan		
Dhananjeyan		

B) AZHAL

	BEFORE TREATMENT	AFTER TREATMENT

Analakam		
Ranjakam		
Saathakam		
Prasakam		
Aalosakam		

C) IYYAM

	BEFORE TREATMENT	**AFTER TREATMENT**
Avalambagam		
Kilethagam		
Pothagam		
Tharpagam		
Santhigam		

10. ENVAGAI THERVU :(EIGHT TYPES OF EXAMINATION)

I. NAADI: (PULSE PERCEPTION)

		0^{th} day	**5^{th} day**	**10^{th} day**
	DATE			
KAALAM	VATHAM			
	PITHAM			
	IYYAM			
MAATHIRAI	VATHAM			
	PITHAM			
	IYYAM			
NAADI				

Mathirai Alavu:Vatham-1,Pitham -1/2,Iyyam-1/4

II. SPARISAM: (PALPATORY PERCEPTION)

BEFORE TREATMENT	**AFTER TREATMENT**
Warmth/Cold/Normal/Sweat	Warmth/Cold/Normal/Sweat

III. NAA: (TONGUE)

NAA	BEFORE TREATMENT	AFTER TREATMENT
Colour	normal/Red pale/yellow	normal/ Red pale/yellow
Taste	Sweet/Sour/ Pungent/ Bitter/None	Sweet/Sour/ Pungent/ Bitter/None
Coating	Present/ Absent	Present/ Absent
Fissure	Present/ Absent	Present/ Absent
Saliva	Normal/ Increased/ Decreased	Normal/ Increased/ Decreased
Dryness	Present/ Absent	Present/ Absent
Glossitis	Present/ Absent	Present/ Absent
Baldness	Present/ Absent	Present/ Absent

IV. NIRAM (COMPLEXION)

BEFORE TREATMENT	AFTER TREATMENT
Dark/Yellow tinted/ Whitish brown/ Pale	Dark/Yellow tinted/Whitish brown/ Pale

V.MOZHI (VOICE)

BERORE TREATMENT	AFTER TREATMENT
High / Medium / Low Pitched	High / Medium / Low Pitched

VI. VIZHI : (EYES)

BERORE TREATMENT	AFTER TREATMENT
Yellow/Red/ Pale/Normal	Yellow/Red/ Pale/Normal

VII. MALAM : (BOWEL HABITS /STOOLS)

	Before Treatment	After Treatment
Colour	Drak/yellow/pale/others	Drak/yellow/pale/others
Consistency	Solid/Semisolid/Watery	Solid/Semisolid/Watery
Stool bulk	Normal/Reduced	Normal/Reduced
Constipation	Present/Absent	Present/Absent
Diarrhoea	Present/Absent	Present/Absent

VIII. MOOTHIRAM (URINE EXAMINATION)

NEERKKURI:

Neerkkuri	Before Treatment	After Treatment
Niram (Colour)	White /Yellowish/Strawcoloured/Crystal Clear	White /Yellowish/Strawcoloured/Crystal Clear
Manam (Odour)	Present/Absent	Present/Absent
Edai (Sp.gravity)	Nil Reduced/Increased	Nil Reduced/Increased
Nurai (Froth)	Normal/Increase/Reduced	Normal/Increase/Reduced
Enjal (Deposits)	Present/Absent	Present/Absent
Volume	Normal/Increased/Decreased	Normal/Increased/Decreased

NEERKURI:

Neikuri	Before Treatment	After Treatment
Aravena neendathu/ Snake like pattern (FS/SS/NS)		
Aazhipol paraviyathu annular/ ringed pattern (FS/SS/NS)		
Muththothu ninrathu/Pearlbead pattern (FS/SS/NS)		
Mixed patterns (FS/SS/NS)		
Other patterns		

FS-Fast Spreading; SS-Slow Spreading; NS-Not Spread

CLINICAL EXAMINATION

I. INSPECTION:

	0th day	4th day	11th day	18th day	25th day	32nd day	39th day	46th day	48th day
Attitude									
Swelling									
Skin over the Affected joint									
Muscle wasting									

II. PALPATION

	0TH day	4th day	11th day	18th day	25th day	32th day	39nd day	46th day	48th day
TENDERNESS									
CREPITATION									
LOCAL HEAT									

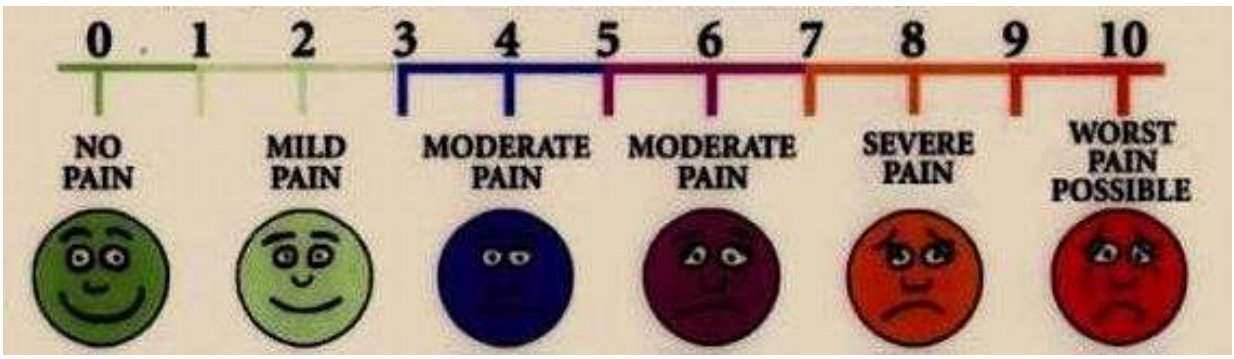
III. MOVEMENTS

	0th day	4th day	11th day	18th day	25th day	32nd day	39th day	46th day	48th day
Flexion									
Extension									

IV. CLINICAL ASSESSMENT:

	0th Day	4th day	11th day	18th day	25th day	32nd Day	39th day	46th Day	48th day
A. Pain									
B.Early Morning Stiffness (Present/Absent)									
C. Nature Of Pain									
D.Aggravating Factor - Movement (Yes/No)									
E.Relieving Factor - Rest (Yes/No)									
Tenderness (Present/Absent)									
Restriction of Movements (Fully/Partial/No) Affected joints									

UNIVERSAL PAIN ASSESMENT SCALE:



Grade 0 : No Pain

Grade 1-3 : Mild pain

Grade 4-6 : Moderatepain

Grade 7-10 : Severe pain

- Ref: Clinical Manual for Nursing Practise (National Institute of Health Warren Grant Magnuson Clinical Center)

UNIVERSAL PAIN SCALE	**BEFORE TREATMENT GRADE**	**AFTER TREATMENT GRADE**

2. **RESTRICTED MOVEMENT ASSESSMENT**

SCALE: Gradation of movements:

- Grade I – Fit for all activities, do their work without support.
- Grade II- Mild Pain present in three or more joints, mild restricted movements.
- Grade III – Pain present in three or more joints, moderate restriction of movements
- Grade IV – Severe pain, bed ridden.

(Ref: Clinical manual for nursing practice (National Institute of Health Warren Grant Magnuson Clinical Centre)

GRADATIONOF MOVEMENTS	**BEFORE TREATMENT GRADE**	**AFTER TREATMENT GRADE**

Date:

Station:

Signature of the Investigator:

Signature of the Guide: **Signature of the HOD**

NATIONAL INSTITUTE OF SIDDHA

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DEPARTMENT OF MARUTHUVAM

CLINICAL EVALUATION OF PANCHATHIKTA KIRUTHAM (INTERNAL MEDICINE) AND KARUNKOZHI THYLAM (EXTERNAL) IN THE MANAGEMENT OF UTHIRAVATHA SURONITHAM (RHEUMATOID ARTHRITIS)

FORM III-LABORATORY PARAMETERS FORM

Principal Investigator: Dr.S.Mahespriya

1. SERIAL NO: **2. OP /IP NO:**

3. NAME: **4. AGE/GENDER:**

A. HAEMATOLOGY

PARAMETERS		NORMAL VALUES	BEFORE TREATMENT(WITH DATE)	AFTER TREATMENT(WITH DATE)
Hb(gm/dl)		M:13-18; W:11-16		
T.RBC(millions cells /Cu.mm)		M:4.5-6.5 ; W:3.5-5.5		
HCT/PCV(%)		M-36-51 ; W:35-48		
MCV (%)ft		M:78-98 ; W-78-98		
MCH (pg)		M:26-34 ;W:26-34		
MCHC (gm/dl)		M;31-37 ; W-31-37		
PLATELET COUNT (Lakhs /cu cells)		M:1.5-4.5 ; W:1.5-4.5		
ABSOLUTE EOSINOPHIL COUNT(cells /cu.mm)		40-440		
BLEEDING TIME(per min)		1-3		
CLOTTING TIME(per min)		3-8		
ESR (mm)	½ hr.	-		
	1 hr.	M:0-10 ;W:0-20		
T.WBC (Cells /Cu.mm)		4000-11000		
Differential Count (%)	Polymorphs	40-75		
	Lymphocytes	20-35		
	Monocytes	2-10		
	Eosinophils	1-6		
	Basophils	0-1		

B.BIOCHEMISTRY:

BLOOD INVESTIGATIONS		NORMAL VALUES	BEFORE TREATMENT	AFTER TREATMENT
Blood glucose (mg/dl)	**Fasting**	**70-110**		
	PP	**80-140**		
RFT (mg/dl)	**Blood urea**	**16-50**		
	Serum creatinine	**0.6-1.2**		
LIPID PROFILE(mg/dl)	**Serum Total Cholesterol**	**150-225**		
	Serum Triglycerides	**<160**		
	HDL Cholesterol	**30-63**		
	LDL Cholesterol	**<130**		
	VLDL Cholesterol	**<40**		
LFT	**Total bilirubin(mg/dl)**	**0.2-1.2**		
	Direct bilirubin(mg/dl)	**0.1-0.2**		
	Indirect bilirubin(mg/dl)	**0.2-0.7**		
	SGOT (IU/L)	**0-40**		
	SGPT (IU/L)	**0-35**		
	Alkaline phosphatase(IU/L)	**80-290**		
OTHER TESTS	**Serum calcium(mgm/dl)**	**8.5-10.5**		
	Serum Uric acid(mg/dl)	**M:3-9 W: 2.5-7.5**		

C.URINE INVESTIGATIONS

PARA METERS	BEFORE TREATMENT (WITH DATE)	AFTER TREATMENT (WITH DATE)
Sugar (Fasting) (PP)		

D.Special Investigations:

	Before TMT(With date)	After TMT(With date)
RA FACTOR		
Anti CCP		
ASO TITRE		
CRP		

X-RAY:

X-ray changes	Before TMT(With date)	After TMT(With date)

Date: **Station:**

Signature of the Investigator:

Signature of the Guide: **Signature of the HOD**

NATIONAL INSTITUTE OF SIDDHA

AYOTHIDOSS PANDITHAR HOSPITAL CHENNAI – 600047.

DEPARTMENT OF MARUTHUVAM

CLINICAL EVALUATION OF PANCHATHIKTA KIRUTHAM (INTERNAL MEDICINE) AND KARUNKOZHI THYLAM (EXTERNAL MEDICINE) IN THE MANAGEMENT OF UTHIRAVATHA SURONITHAM (RHEUMATOID ARTHRITIS)

PRINCIPAL INVESTIGATOR: DR.S.MAHESPRIYA

FORM – IV - DRUG COMPLIANCE FORM

PATIENTNAME: DRUG NAME :			SERIAL NO:
On 0th day – DATE :	Drugs issued :	(gms)	
On 4th day – DATE :	Drugs issued :	(gms)	
On 11th day – DATE :	Drugs issued :	(gms)	
On 18th day – DATE :	Drugs issued :	(gms)	
On 25th day – DATE :	Drugs issued :	(gms)	
On 32th day – DATE :	Drugs issued :	(gms)	
On 39th day – DATE :	Drugs issued :	(gms)	
On 46th day – DATE :	Drugs issued :	(gms)	
On 48th day – DATE :	Drugs issued :	(gms)	

DAYS	DAY	NIGHT	DAYS	DAY	NIGHT
DAY 01			DAY 25		
DAY 02			DAY 26		
DAY 03			DAY 27		
DAY 04			DAY 28		
DAY 05			DAY 29		
DAY 06			DAY 30		
DAY 07			DAY 31		
DAY 08			DAY 32		
DAY 09			DAY 33		
DAY 10			DAY 34		
DAY 11			DAY 35		
DAY 12			DAY 36		
DAY 13			DAY 37		
DAY 14			DAY 38		
DAY 15			DAY 39		
DAY 16			DAY 40		
DAY 17			DAY 41		
DAY 18			DAY 42		
DAY 19			DAY 43		
DAY 20			DAY 44		
DAY 21			DAY 45		
DAY 22			DAY 46		
DAY 23			DAY 47		
DAY 24			DAY 48		

AYOTHIDOSS PANDITHAR HOSPITAL

DEPARTMENT OF MARUTHUVAM

FORM V - INFORMATION SHEET

CLINICAL EVALUATION OF PANCHATHIKTA KIRUTHAM (INTERNAL MEDICINE) AND KARUNKOZHI THYLAM (EXTERNAL MEDICINE) IN THE MANAGEMENT OF UTHIRAVATHA SURONITHAM (RHEUMATOID ARTHRITIS)

Name of the Principal Investigator: Dr.S. Mahespriya

Name of the Institution: National Institute of Siddha

Tambaram Sanatorium

Chennai- 47.

* Dr. S.Mahespriya studying M.D (Siddha) in department of maruthuvam,National Institute of Siddha, Chennai. Uthira VathaSuronitham(Rheumatoid arthritis) is one of the rheumatic disease commonly affecting the joints. It includes the symptoms like, painful and swelling of the joints especially fingers and toes, fever. In chronic stage the disease affect the daily activities. This condition is being treated in NIS with many Siddha formulations. As a part of M.D(S) course in developing new efficacious medicine for dissertation .I propose to study the Panchathikta kirutham (Internal) and Karunkozhi thylam (External) formulation for treating the uthira VathaSuronitham(Rheumatoid arthritis). The cleaned flesh part is added in the medicated karunkozhi thylam which is externally used for Rheumatoid arthritis. This formulation is mentioned in Siddha literature and empirical evidence with contemporary tools is required for documentation. You can receive medicines free of cost. The duration of treatment period is 48 days. You have to visit NIS every week and collect drugs for 7days. The diagnosis tests will be carried out free of cost. We will assess the effect of treatment after completion of 48 days of treatment using clinical and lab parameters.

* In this regard, we need to ask you few questions. We will maintain confidentiality of your comments and data obtained from you. There will be no risk of disclosing your identity and no physical, psychological or professional risk is involved by taking part in this study. Taking part in this study is voluntary. No compensation will be paid to you for taking part in this study. You can choose not to answer any specific question. There is no specific benefit for you if you take part in the study, but you will be under our clinical monitoring and specific attention will be given for your health. Taking part in the study may be of benefit it to the community, as it may help us develop medicine for Uthira

VathaSuronitham. In case of any adverse symptoms produced during the treatment such as severe pain in the joints, with nausea, vomiting, difficulty in breathing, high fever, rashes necessary care will be given in NIS for relief. You can withdraw from the study at the midst of treatment period, if you are not interested to continue and you will receive our usual treatment without condition.

* The information we will collect in this study, will remain between you and the principal investigator. We will ask you a few questions through questionnaire. We will not write your name on different forms which sent to different investigating/analysis sections and we will use a code instead given by the principal investigator. Only the principal investigator will know the key to this code which will be kept in safe custody. If you agree to be a participant in this study, you will be screened as per the study protocol.

* If you wish to find out more about this study before taking part, you can ask me all the questions you want or contact Dr.S.Mahespriya, PG scholar, principal investigator of this study, National Institute of Siddha, Chennai. (Mobile phone no: 9942737718) You can also contact the Chairman/Member-secretary of Ethics committee, National Institute of Siddha, Chennai - 600047, Tel no: 91-44-22411611, for rights and participation in the study.

அயோத்திதாசர் பண்டிதர் மருத்துவமனை

தேசிய சித்த மருத்துவ நிறுவனம்,சென்னை-47.

உதிர வாதசுரோணிதம் நோய்க்கான சித்த மருத்துவ மருந்து பஞ்சதிக்தக் கிருதம் மற்றும் கருங்கோழித் தைலம் பரிகரிப்புத் திறனைக் கண்டறியும் மருத்துவ ஆய்விற்கான தகவல் படிவம்

முதன்மை ஆராய்ச்சியாளர் பெயர்: மருத்துவர்.சீ.மகேஸ்பிரியா.

நிறுவனத்தின் பெயர்: தேசிய சித்த மருத்துவ நிறுவனம்

தாம்பரம் சானட்டோரியம்

சென்னை-47.

மருத்துவர்.சீ.மகேஸ்பிரியா ஆகிய நான் தேசிய சித்த மருத்துவ நிறுவனத்தில் மருத்துவத் துறையில் பட்ட மேற்படிப்பு பயின்று வருகிறேன். உதிர வாதசுரோணிதம் என்னும் நோயானது ஒரு வகையான மூட்டு நோய். இது கை,கால் வீக்கம், வலி முதலியவற்றை உண்டாக்கி நாம் அன்றாட வேலைகளை செய்ய முடியாதவாறு முடக்கி வைக்கும். நாள்பட படுக்கையில் கிடத்தும். இதன் குறிகுணங்கள் காலையில் ஒரு மணி நேரத்திற்கும் அதிகமாக கை விரல்களில் வீக்கம் , கை கால் விறைப்புதன்மை ,சிறுசுரம் முதலியவற்றை உண்டாக்கும். இந்நோய்க்கு தேசிய சித்த மருத்துவனையில் பல மருந்துகள் பயன்படுத்தப்பட்டு வருகிறது. சித்த மருத்துவ பட்ட மேற்படிப்பின் ஒரு பகுதியாக உதிர வாதசுரோணிதம் நோய்க்கான சித்த மருத்துவ மருந்து பஞ்சதிக்தக் கிருதம் மற்றும் கருங்கோழித் தைலம் என்னும் புதிய மருந்தின் பரிகரிப்புத் திறனைக் கண்டறியும் மருத்துவ ஆய்வினை தேர்வு செய்துள்ளேன். இந்த மருந்தின் செய்முறை அளவு அனுபானம் மற்றும் மருத்துவப்பயன் அனைத்தும் அங்கீகரிக்கப்பட்டசித்த மருத்துவ நூலில் கூறப்பட்டுள்ளது. வெளிபிரயோகத்திற்கு வழங்கப்படும் கருங்கோழித்தைலத்தில் சுத்தம்செய்யப்பட்ட கருங்கோழியின் சதை சேர்க்கப்படுகிறது. எந்தவித கட்டணமின்றி இம்மருந்தினை பெற்றுக்கொள்ளலாம். இந்த ஆய்வில் மருந்து உட்கொள்ளும் காலம் 45 நாட்கள் ஆகும். வாரம் ஒரு முறை தேசிய சித்த மருத்துவனைக்கு நேரில் வந்து 7 நாட்களுக்கான மருந்தினை பெற்றுக் கொள்ள்லாம். இந்த ஆய்வு சம்பந்தமாக ஆய்வக பரிசோதனைகள் அனைத்தும் கட்டணமின்றி செய்யப்படும். நோய்க்கு மருந்து உட்கொள்ளும் காலம் முடிவுற்ற பிறகு நோய்க்கான குறிகுணங்கள் மற்றும் ஆய்வக முடிவுகள் அடிப்படையில் மருந்தின் பரிகரிப்புத்திறன் கண்டறியப்படும்.

இந்த ஆய்வு சம்பந்தமாக சில கேட்விகள் தங்களிடம் கேட்கப்பட்டு தங்களது அனைத்து விவரங்களும் ரகசியமாக வைக்கப்படும் என உறுதி அளிக்கின்றேன். இந்த ஆய்வில் பங்கேற்கவும் இந்த ஆய்வில் கேட்கப்பட்டும் கேட்விகளுக்கு பதில் கூறவும் முழுசுகந்திரம் அளிக்கப்படுகிறது. இந்த ஆய்வில் பங்கேற்பதற்கு பயணப்படி முதலிய எந்த உதவித்தொகையும் வழங்கபட மாட்டாது.

தங்கள் உடல் நலன் குறித்து மேற்கொள்ளப்படும் உதிர வாதசுரோணிதம் நோய்க்கான ஆய்வு முழுவதும் புதிய மருந்துகளின் பரிகரிப்புத்திறன் கண்டறிய மேற்கொள்ளப்படும். இந்த மருந்து உட்கொள்ளும் காலத்தில் சிலருக்கு அதிகமான சுரம்,வாந்தி, மூச்சு விடுவதில்சிரமம் ,அரிப்பு,தாங்கமுடியாத வலியுடன் குமட்டல் , வாந்தி போன்ற மாறுப்பட்ட குறிகுணங்கள் தொடர்ந்து இருக்கும் பட்சத்தில் முதன்மை ஆராய்ச்சியாளர் என்னிடம் தெரிவிக்கலாம். தங்களுக்கு தேசிய சித்த மருத்துவனையில் அதற்கான தீர்வு வழங்கப்படும். இந்த ஆராய்ச்சியில் தங்களை உட்படுத்திய பிறகு உங்களுக்கு விருப்பம் இல்லையெனில் எப்போது வேண்டுமானாலும் விலகி கொள்ள முழு உரிமை உள்ளது.

இந்த ஆய்வில் சேகரிக்கப்பட்ட விபரங்கள் அனைத்தும் தங்களுக்கும் முதன்மை ஆராய்ச்சியாளருக்கும் இடையில் ரகசியமாக வைக்கப்படும். இந்த ஆய்வில் பங்கேற்கும் முன் இந்த ஆய்வினைப் பற்றிய விபரங்களுக்கு மற்றும் நோயின் தன்மை பற்றிய அறிய முதன்மை ஆராய்ச்சியாளர் மருத்துவர் சீ.மகேஸ்பிரியா (பட்ட மேற்படிப்பாளர்- மருத்துவ பிரிவு) கைபேசி எண்: 9942737718 தொடர்பு கொள்ளலாம். மேலும் இந்த ஆய்வில் உங்களது பங்கேற்பு மற்றும் உரிமை பற்றி தெரிந்து கொள்ள தேசிய சித்த மருத்துவனை தலைவர் செயற்குழு உறுப்பினர் அவர்களையும் 91-44-22411611 என்ற எண்ணில் தொடர்பு கொள்ளலாம்.

NATIONAL INSTITUTE OF SIDDHA,

AYOTHIDOSS PANDITHAR HOSPITAL CHENNAI -47

DEPARTMENT OF MARUTHUVAM

CERTIFICATE OF CONSENT

CLINICAL EVALUATION OF PANCHATHIKTA KIRUTHAM (INTERNAL MEDICINE) AND KARUNKOZHI THYLAM (EXTERNAL MEDICINE) IN THE MANAGEMENT OF UTHIRAVATHA SURONITHAM (RHEUMATOID ARTHRITIS)

CERTIFICATE BY THE INVESTIGATOR

I certify that I have disclosed all details about the study in terms readily understand by the patient.

Date: Name: Dr.S.Mahespriya,

Station: Signature of the investigator

CONSENT BY PATIENT

"I have read the foregoing information or it has been read to me. I have had the opportunity to ask question about it and any questions. I have asked have been answered to my satisfaction.

I consent voluntarily to participate as a participant in this study and understand that I have the right to withdraw from the study at any time without in any way it affecting my further medical care.

"I have received a copy of the consent form / information sheet."

Date:

Signature of the participant Signature of the investigator

In case of illiterate participant

"I have witnessed the reading of the consent form to the potential participant, and the individual has had the opportunity to ask question. I confirm that the individual has given consent freely."

Date:

Place:

Signature of a witness: (Left thumb impression of participant)

(Selected by the participant bearing no connection with the project team)

Date:

Place:

அயோத்திதாசர் பண்டிதர் மருத்துவமனை

தேசிய சித்த மருத்துவ நிறுவனம்,சென்னை-47.

உதிர வாதசுரோணிதம் நோய்க்கான சித்த மருத்துவ மருந்து "பஞ்சதிக்தக் கிருதம் மற்றும் கருங்கோழித் தைலம் பரிகரிப்புத் திறனைக் கண்டறியும் மருத்துவ ஆய்விற்கான ஒப்புதல் படிவம்

ஆய்வாளரால் சான்றளிக்கப்பட்டது

நான் உதிர வாதசுரோணிதம் என்னும் நோயின் ஆய்வைக் குறித்து அனைத்து விபரங்களையும் நோயாளிக்குப் புரியும் வகையில் எடுத்துரைத்தேன் என உறுதியளிக்கிறேன்.

தேதி:

இடம் கையொப்பம்:

<u>பங்கேற்பாளரின் ஒப்புதல்</u>

நான்..... என்னுடைய தேர்வு செய்யும் உரிமையைக் கொண்டு இங்கு தலைப்பிடப்பட்ட உதிர வாதசுரோணிதம் நோய்க்கான சித்த மருத்துவ மருந்து "பஞ்சதிக்தக் கிருதம் மற்றும் கருங்கோழித் தைலம் பரிகரிப்புத் திறனைக் கண்டறியும் மருத்துவ ஆய்விற்கு என்னை உட்படுத்த ஒப்புதல் அளிக்கிறேன்.

என்னிடம் இந்த மருத்துவ ஆய்வின் காரணத்தையும் மருந்தின் தன்மை மற்றும் மருத்துவ வழிமுறை பற்றியும் தொடர்ந்து எனது உடல் இயக்கத்தைகண்காணிக்கவும் அதனை பாதுகாக்கவும் பயன்படும் மருத்துவ ஆய்வுக்கூட பரிசோதனைகள் பற்றி திருப்தி அளிக்கும் வகையில் ஆய்வு மருத்துவரால் விளக்கி கூறப்பட்டது. நான் இந்தமருத்துவ ஆய்வின் போது எப்பொழுது வேண்டுமானாலும் இந்த ஆய்விலிருந்து என்னை விடுவித்துக் கொள்ளும் உரிமையைத் தெரிந்திருக்கின்றேன்.

தேதி : பங்கேற்பாளரின் கைரேகை :

கையொப்பம் :

ஆய்வாளரின் கையொப்பம்:

NATIONAL INSTITUTE OF SIDDHA, CHENNAI – 47

AYOTHIDASAR PANDITHAR HOSPITAL

DEPARTMENT OF MARUTHUVAM

A CLINICAL EVALUATION OF PANCHATHIKTA KIRUTHAM (INTERNAL MEDICINE) AND KARUNKOZHI THYLAM (EXTERNAL MEDICINE) IN THE MANAGEMENT OF UTHIRAVATHA SURONITHAM (RHEUMATOID ARTHRITIS)

FORM VII- WITHDRAWAL FORM

Reg No:		
Serial No:	OP/IP No:	
Name:	Age:	Gender: M/F

DATE OF TRIALCOMMENCEMENT:

DATE OF WITHDRAWAL FROM TRIAL:

REASONS FOR WITHDRAWAL:

Long absence at reporting: Yes / No

Irregular treatment: Yes / No

Shift of locality: Yes / No

Increase in severity of symptoms: Yes / No

Development of severe adverse drug reactions: Yes / No

PHARMACOVIGILANCE OF AYURVEDA, SIDDHA, UNANI and HOMOEOPATHY (ASU & H) DRUGS

Reporting Form for Suspected Adverse Reactions

Note:

i. Personal information of the consumers / patients / ADR reporter's will be kept confidential.

ii. All suspected reactions are to be reported with relevant details.

iii. All completed forms are to be submitted to the program coordinator of nearby centre.

A / U / S / H	
Code	**Ay-NIA/Code of Peripheral Centre/ADR Number/Year**
	Ay-IPGT/Code of Peripheral Centre/ADR Number/Year
	Un-NIUM/Code of Peripheral Centre/ADR Number/Year
	Si-NIS/Code of Peripheral Centre/ADR Number/Year
	Ho-NIH/Code of Peripheral Centre/ADR Number/Year

1. Patient / consumer identification (please complete or tick boxes below as appropriate)

Name		Patient Record Number (PRN)
Place of Birth	IPD / OPD	
Address Village / Town Post / Via District / State		Age: Sex: Male / Female
Diagnosis:	Constitution and Temperament:	

2. Description of the suspected Adverse Reactions

Date and time of initial observation	
Description of reaction	

3. Whether the patient is suffering with any chronic disorders?

Hepatic Renal Cardiac Diabetes Any Others

4. Addictions, if any? If yes, please specify:

5. H/O previous allergies / Drug reactions, if any: If yes, please specify:

6. List of all ASU & H drugs used by the patient during the period of one month:

Name of the drug	Manufacturer / Batch no.	Dose	Form / Route of administration	Date of		Reason for use	Any unwanted occurrences
				Starting	Stopped / Continued		

7. List of other drugs used by the patient during the period of one month:

Name of the drug	Manufacturer / Batch no.	Dose	Form / Route of administration	Date of		Reason for use	Any unwanted occurrences
				Starting	Stopped / Continued		

8. Details of the drug suspected to cause ADR:

a. Name of the drug:
b. Manufacturing date and Expiry date (if available):
c. Remaining pack / label (if available):
d. Consumed orally along with (water / milk / honey / or any other)
e. Whether any dietary precautions have been prescribed?
   If yes, please specify :

f. Whether the drug is consumed under medical supervision or used as self medication.
g. Any other relevant information associated with drug use:

9. Management provided / taken for suspected adverse reaction

10. Please indicate outcome of the suspected adverse reaction (tick appropriate)

Recovered:	Not recovered:	Unknown:	Fatal:	If Fatal Date of death:
Severe: Yes / No.	Reaction abated after drug stopped or dose reduced:			
	Reaction reappeared after re administration of drug:			
Was the patient admitted to hospital? If yes, give name and address of hospital				

11. Any abnormal findings of relevant laboratory investigations related to the episode done pre and post episode of ADR:

12. Particulars of ADR Reporter:

Please tick:	Patient / Attendant / Nurse / Doctor / Pharmacist / Health worker / Drug Manufacturer / Any others (please specify)
Name:	
Address:	
Telephone / E - mail:	

Signature of the reporter: **Date:**

Please send the completed form to: The centre from where the form is received or to

The Coordinator, National Pharmacovigilance Centre
All India Institute of Ayurveda, Sarita Vihar,
New Delhi - 110 076
Email: pharmacovigilanceayush@gmail.com

The ADR Probability Scale

(Program Coordinator has to fill this scale**)**

	Questions	**Yes**	**No**	**Don't Know**
1	Are there previous conclusive reports on the reactions?	+1	0	0
2	Did the ADR appear after the suspected drug was administered?	+2	-1	0
3	Did the ADR improve when the drug was discontinued a specific antagonist was administered ?	+1	0	0
4	Did the adverse reaction reappear when the drug was re-administered?	+2	-1	0
5	Are there alternatives causes that could solely have caused the ADR?	-1	+2	0
6	Was the drug detected in the blood (or other fluids) in a concentration known to be toxic?	+1	0	0
7	Was the reaction more severe when the dose was increased, or less severe when the dose was decreased?	+1	0	0
8	Did the patient have a similar reaction to the same or similar drugs in any previous exposure?	+1	0	0
9	Was the adverse event confirmed by objective evidence?	+1	0	0
	Total Score			

Score: > 9 = Certain; 5-8 = Probable; 1-4 = Possible; 0 = Unlikely

Signature
Program Coordinator

தேசிய சித்த மருத்துவ நிறுவனம்

அயோத்திதாஸ் பண்டிதர் மருத்துவமனை சென்னை- 47

உதிர வாதசுரோணிதம் நோய்க்கான சித்த மருத்துவ மருந்து பஞ்சதிக்தக் கிருதம் மற்றும் கருங்கோழித் தைலம் பரிகரிப்புத் திறனைக் கண்டறியும் மருத்துவ ஆய்வு

FORM IX - உணவுமற்றும்அறிவுரைபடிவம்

சேர்க்க வேண்டியவை:

கத்திரி பிஞ்சு முருங்கை பிஞ்சு

அவரை பிஞ்சு பொன்னாங்கண்ணி

தண்டுக் கீரை முடக்கறுத்தான்

எளிதில் செரிக்கும் உணவுகள்

காடை கௌதாரி

பசும்பால் நெய் மோர்

வெள்ளாட்டுஇறைச்சி ஆகியவை சேர்க்க வேண்டும் .

நீக்க வேண்டியவை:

பாகற்காய் மாங்காய்

கத்தரிக்காய் கொத்தவரைக்காய்

கல்யாணப்பூசணிக்காய் அகத்திக்கீரை

மந்தமுள்ள பதார்த்த வகைகள்

கடுகு எள்

கைப்புச் சுவை சுரைக் காய்

பூசணி பீர்க்கு உளுந்து

கொள்ளு சோளம்

புளி காபி டீ

புகையிலை மற்றும் சாராயம் முதலியவற்றைநீக்கவேண்டும்.

மருத்துவஅறிவுரை

- குளிர்ந்ததரையில்படுப்பதைத்தவிர்க்கவும்.குளிர்க்காற்றில் உலவுதல் மற்றும்படுப்பதைத் தவிர்க்கவும்.
- நீண்ட தூரம்பயணம் செய்வதை தவிர்க்கவும்.
- நீண்டநேரம் நடப்பதைதவிர்க்கவும்
- போதுமானஓய்வுஎடுக்கவும்

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