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A STUDY ON UTHIRAVATHASURONITHAM

(DISSERTATION SUBJECT)



For the partial fulfillment of the requirements to the Degree of

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CERTIFICATE

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INTRODUCTION.

INTRODUCTION

“நிலம்தீ நீர் வளி விசும்போடைந்தும்
கலந்த மயக்க உலகம் ஆதலில்
இருதிணை ஐம்பால் இயனெறி வழா அமைத்
திரிவில் சொல்லொரு தழாஅல் வேண்டும்”

(தொல்காப்பியம் பொருள் அகராதி)

The poem cited above, the poet maintains harmonious relationship with the world about him attains the perfect knowledge, merges with the absolute. The ordinary man lacks the knowledge and sensitivity, which would permit him to maintain such harmonious relationships. To avert misfortune, one must examine the knowledge made available by our ancestors those who had greater wisdom; such ancestors are called “siddhars” who attained perfection and supernatural energy by yogam and gnanam. They found ways and means to prevent and cure them from disease, a system later called integral part of civilization of the people who lived in the lemurian continent of prehistoric era.

Siddha is more than a system of physical medicines, because its underlying ideas have permeated religion and ritual .An analysis of these concepts must begin with the fundamental principles of siddha, which include five basic elements of the universe, three thathus, three humours and seven thathu (components of the body).

The five elements are ether, wind, fire, water and earth .The five elements are constituents of all life and such also make up the three humours and seven components .The body elements are produced by successive transformation of the refined food substances into juice (saaram) blood (senneer), flesh (oon), fat(kozhuppu), bone (enbu), marrow(moolai) and semen(sukkilam).

Physical health is maintained when the three humours are in harmonic balance, but when they are upset they become kuttrams or troubles of the organs which predominate some diseases.

Siddha system is based on three kuttrams (humour-vali, azhal, iyam) which are the fundamental units of normal physiological function. They exist in a ratio 1:1/2:1/4 respectively in normal condition. Derangement of these three kuttram causes the diseases. Most of the current modern scientist says about the etiology of the diseases as incoherent life style. This idea is not newer one just a relation of our siddhar's thought.

Yugi munivar is the first siddhar who classifies disease based on clinical signs and symptoms along with the humoral pathology. His classification of diseases in “*Yugi vaidhya chindhamani*” are very clear could be compared with the classification of diseases in modern medicine of now a days.

Yugi has classified vatha diseases into 80types and *Uthiravathasuronitham* is one of them.

“வைகிதமாய்க் கணைக்காலு முழங்கால் தானும்
மற்கடஞ் சந்து புற வடியும் வீங்கிச்
செய்கிதமாற் சிறுவிரல்கள் மிகவும் நொந்து
சிந்தை தடுமாறியே சலிப்பண்டாகும்
பைகிதமாம் பயித்தியத் தில்லாத மிஞ்சிப்
பாரமாய் உற்பவித்து அழலுண்டாகும்
உய்கிதமாம் அசனமது தானும் வேண்டா
உதிரவாதத் சுரோனிதத்தி னுணர்ச்சியாமே.”

From the above verse it is noted that swelling of the ankle joint , knee joint and other joint, severe pain in smaller joints, psychological distress, vitiation of vali, azhal kuttrams and loss of appetite are the clinical features of the *Uthiravatha suronitham*.

Uthiravatha suronitham is such a disease caused by the upset of three humours classified under vatha diseases, by saint Yugi munivar who classified the diseases under three humoral basis, signs and symptomological basis and etiological basis in comprehensive chapters.

The diseases *Uthiravatha suronitham* has a very close relevance to Rheumatoid arthritis, the aetiopathogenesis of which is well described by above said saint Yugi. According to modern science Rheumatoid arthritis is an entity with genetical susceptibility affects 1% of the populations. The genetic factor HLA-DR4, HLA-DR1 plays important role. The disease

Uthiravathasuronitham involving multiple systems of the body. Especially musculoskeletal system is the first and foremost system affected. So, single drug therapy is not much useful to conquer the disease. The author selected a multiple combination of therapy included internal medicines as well as external applications.

The principle drugs are *kalakandamega narayana chenduram* which is useful in chronic multisystem involved diseases and *lahuvidamuttythylam* is an external application reducing inflammatory conditions of musculo skeletal system contains bark of Ayil (*Holoptelea integrifolia*), seeds of Etti(*Strychnos-nux-vomica*), garlic(*Allium sativum*) and gingely oil.

All the above drugs are found very effective in *uthiravathasuronitham*, which I selected for dissertation.

AIM AND OBJECTIVES.

AIM AND OBJECTIVES

Ancient siddha medicine with its evolution many centuries ago has always fascinated practitioners and researchers for the depth of analytical research and practical application. This medicine emphasizes health as the perfect state of physical, psychological, social and spiritual component of a human being. Its fundamental principles successfully eliminate harmful side effects without losing beneficial medicinal properties.

Although there has been considerable progress in the medicinal field, there remain many diseases where we cannot effect any cure. Siddha medicines are able to cure many diseases that are not amenable to treatment by other systems of medicine.

Nature is the foremost physician and abuse of nature's law upsets the human system leading to occurrence of diseases like *Uthiravathasuronitham* affecting 15% of population. This disease varies greatly in the manner and degree to which it may affect a patient's general health, ability to work and quality of life. It is the duty of the medicinal community to provide perfect and complete solution to such patients.

I have been very much interested in musculoskeletal disorders caused by immune alterations like *Uthiravathasuronitham*. Many patients have progressive, gradual decrease in functional capacity, with increasing

duration of disease. I also witnessed proper drug, exercises and yoga rehabilitate the loss of joint and tendon function and prevent exacerbation of disease.

An extensive research, literature and guidance of academicians inspired me to do research in this topic.

The principle aim of the present work is to study *Uthiravathasuronitham* in various aspects, with modern comparison and to find the relief that could give to the patients with siddha medicines.

Kalakandameganarayanachenduram and *Lahavidamutty* thylam has been tried in the Dept. of Maruthuvam, Ayothidhas pandithar hospital, National Institute of Siddha, Chennai-600047 to asses its clinical efficacy.

The main objective of the present study is to enlighten the efficacy of siddha medicines and to create awareness in treating such miserable disorders like *Uthiravathasuronitham* among people.

The basic objectives are,

- To collect various siddha literature and modern text regarding the diseases *Uthiravathasuronitham* and clinically related Rheumatoid arthritis.

- To know the extend of correlation of etiology, classification, symptomatology, diagnostic methods and the line of treatment etc.
- To study *Uthiravathasuronitham* on the basis of mukkutram, Pori, pulangal, udalkattugal, envagaithervugal etc.,in order to evaluate the pathology.
- To have a detailed clinical investigation to confirm the diagnosis and make clinical trial on *Uthiravathasuronitham* with *kalakanda megarayana chenduram* and *laguvidamutty thylam*.
- To study biochemical, chemical, pharmacological standards for possible extend to evaluate trial drugs.
- To conduct a clinical trial with a well defined proforma on identified patients of *Uthiravathasuronitham*.

REVIEW OF LITERATURES.

REVIEW OF LITERATURE

SIDDHA ASPECTS

The things exist in the universe also exists in the human being. Any adverse changes of these two, even a minute change will be reflected on the other.

Uthiravathasuronitham the disease taken for study has been described by various siddhars. Yugi dealt it among eighty types of vatha diseases.

DEFINITION (IYAL):

Vatham is a clinical condition characterized by pain, swelling, pricking sensation and loss of function due to vitiated vatha which is the principal humour of the body.

AETIOLOGY (NOI VARUM VAZHI):

According to Theran karisal:

“நோயினுற்பத்தி கேள் நோன்மை கூர் மைந்தனே
நோயாளி யென்பதனு நோயாளி முன்னே
நோய்கள் வினை காதரமு நோய்கள் வரவேது
நோணாமையால் வேகுளி நோனாத பசியால்
நோனாத நீர்பருகல் நோனாத உணவால்
நோக்கமரு னமதாக நோக்கயொழி தொழியதலால்
நோக்கரென நடமாடி நோக்கி நடமிடலால்
நேர்ட காரரி நாடி நோட்டமொழி குரலாய்
நோவையர் மாதரொடு நோவ மருவுதலால்
நோன்பு விரதாதி பல நோற்கவரு மெலிவால்
நோஞ்சையென வணுகுணவு நோவ வயிலுதலால்

நோண்டவரி தெனவேரை நோண்டியே ருதலால்
நோனாத வீரமடி நோனமணி குதலால்
நோய்கள் உற்பத்தி வழு நோய்கள் வினை விதையாய்
நோய்கள் வினை வயலாய் மெய்நோய்கள் வளர்பயிராய்
நோயுதவு பலனாகி நோய்கள் வெகுமேலாம்
நோதக உரைத்தனமின் நோய்களற மேலே
நோயினிக லாளர் நோன்மை யிதினியே.”

-சித்தமருத்துவாங்க சுருக்கம்

According to the above poem, it was stated that due to excessive intake of water, food, rhizomes and root, excessive intake of water, food, rhizomes, roots, excessive starvation, sexual indulgence with diseased individual are the main cause for the disease and also the uncharitable activities results in psychosomatic disturbances leading to disease.

According to Yugi vaidhya chinthamani the disease is caused by various factors.

“என்னவே வாதம்தா னெண்பதாகும்
இகத்திலே மனிதர்களுக் கெய்யுமாறு
பின்னவே பொன்தனைய சோரஞ் செய்து
பெரியோர்கள் பிராமனரை துஷ்னித்தும்
வன்னதே வற்சொத்திப் சோரஞ் செய்து
மாதா பிதா குருவை மறந்த பேர்க்கும்
கன்னவே வேதத்தை நிந்தை செய்தால்
காயத்திற் கலந்திடுமே வாதந் தானே.
தான் என்ற கசப்போடு துவர்ப்பு றைப்பு
சாதகமாய் நெஞ்சுகினுன் சமைத்த வண்ணம்
ஆனன்ற வாறினது பொசித்தலாலும்
ஆகாயத் தேறளது குடித்த லாலும்

பானென்ற பகலுக்க மிரா விழிப்பு
பட்டினியே மிகடவறுதல் பாரமெய்தல்
தேனென்ற மொழியார் மேற் சிந்தை யாதல்
சீக்கிரமாய் வாதமது செனிக்கும் தானே.”

- யூகி வைத்திய சிந்தாமணி.

Excessive sexual indulgence and unholy activities like stealing properties of siva temple, insulting laureates, parents and teachers.

Over consumption of bitters, astringents, and savories rancid foods, drinking rainy water, daytime sleep, night time work, starvation, lifting over weight will initiate and aggravates the vatha.

Para rasa sekaram describes the factors for vitiation of vatham:

“தொழில் பெறு கைப்பு கார்த்தல் துவர்த்தல் விஞ்சுகினுந் சோறும்
பழையதாம் வரகு மற்றைய பைந்தினை யருந்தினாலும்
எழில்பெறப் பகலுரங்கி இரவினி லுறங்காததாலும்
மழை நிகர் குழலினாளே வாதம் கோபிக்கும் காணே”

Consumption of excessive bitters, astringent, savouries, cereals, rancid food, daytime sleep, and lacking night sleep and vitiating vatham.

Characteristics of vatha disease:

“வாதவீறு அன்னமிறங்காது கடுப்புண்டாம் வண்ணமுண்டாம்
மோதுகட்டு ரோகம் சுரமுண்டா மிருமலுமா முறங்காதென்றும்
ஓதுகுரிய வாத மனலாகு நடுக்க முண்டாம் பொருள்களாய்க்
தீதனவே நரம்பிசித்து சந்துகள் தோறுங் கடுக்குந் தினமும்தானே.”

-தேரன்வாகடம்.

Loss of appetite, pain and redness, fever and cough, insomnia, shivering, pain in all joints of the body.

“சந்திரவாதமுடன் குளிர்ந்தெழுந்தே நடுக்குந் சீதவாய்வாம்
முந்திய குத்தி சிவாந் சந்துகள் தோறும் குடைந்து மொளிகள் வீங்கும்
வந்திய தொந்தவாதம் வீக்க முண்டா முடலிற்றி முரண்டாமே.”

-தேரன்வாகடம்.

Chillness of the body, rigor and spasm, pain and tenderness of joints, swelling of joints.

VATHA SURONITHAM

As per the description of T.V.Sambasivam pillai and kadirvelu pillai, suronitham is mentioned as blood, red and menstruation.

Jeevarakshamirtham dealt suronitham as sonitham which means blood, red and yellow. Yugi vaidhya chinthamani classified vatha suronitham into 7 types. They are,

1. Vatha suronitham
2. Uthiravatha suronitham
3. Sithuvatha suronitham
4. Vaihithavatha suronitham
5. Paithiya vatha suronitham
6. Slethuma vatha suronitham
7. Udharavatha suronitham.

1. Clinical features of vatha suronitham:

“அறிந்திட்ட அங்கமெல்லா மெலிவ மாகி
அசைவான தவ்விடங்கள் வீக்கமாகி
நறிந்திட்ட நடைகொடா தானிருத்தல்
வலியாகி மொழி மொழிய வீக்கமாகச்
சொறிந்திட்ட தேகமெங்கு மசைவு காணல்
சோற்றின்மே னினையின்றித் தூக்கமாதல்
வறிந்திட்ட வாயதனி னீர்தா னூறல்
வாத சுரோனிதத் தாலும் வகுத்த வாரே.”

Emaciation, swelling of joints, restricted movement, pain and tenderness, discomfort, loss of appetite, excessive salivation.

2. Clinical features of uthiravatha suronitham

“வைகிதமாய்க் கணைக்காலு முழங்கால் தானும்
மற்கடஞ் சந்து புற வடியும் வீங்கிச்
செய்கிதமாற் சிறுவிரல்கள் மிகவும் நொந்து
சிந்தை தடுமாறியே சலிப்பண்டாகும்
பைகிதமாம் பயித்தியத் தில்லாத மிஞ்சிப்
பாரமாய் உற்பவித்து அழலுண்டாகும்
உய்கிதமாம் அசனமது தானும் வேண்டா
உதிரவாதத் சுரோனிதத்தி னுணர்ச்சியாமே.”

Pain in both ankle joints, knee joints and all small joints of the hands and feet depression, loss of appetite.

3. Clinical features of paithiyavatha suronitham.

“உணர்ச்சியாய்ச் சுரோனிதந்தான் மிகவே தும்பி
ஊக்கமாய்த் தேகமெங்கு மிகவே நொந்து
முணர்ச்சியாய் முழங்கால்கள் முழங்கை யொக்க

முனையான சிறுவிரல்கள் கன்னம் நெற்றி
தணர்ச்சியாய்ச் சந்துசரு வாங்க மெங்கும்
தாட்டிக் மாய்க்குடைந்து சரமு முண்டாம்
பணாச்சியாய்ப் பாண்டதுபோன் மேனி யாகும்
பயித்தியவா தசரோணிதத்தின் பண்பு தானே.”

Pain all over the body, pain in elbow joints, knee joints, fingers,
cheeks, forehead, hyper pyrexia, anaemia.

4. Clinical features of slethuma vatha suronitham:

“பண்பாக வுடல்குளிர்ந்து ஏறு வீங்கிப்
பதைப்பான விடந்தொட்டாற் பார நோவாம்
திண்பான சிரசுநெற்றி நோக்கா டுண்டாம்
சிலேட்டுமமாய்க்கட கோழையொடு சுவாச மாகும்
மண்பாக மயக்கமொடு கனவு முண்டாம்
வாய்வரண்டு ருசியில்லா வருத்த மாகும்
நண்பாக நாடியுமே படப டக்கும்
நற்சேட்ப சுரோணிதமாம் நாடுங் காலே.”

Chillness of the body, head ache, cough with dyspnoea, disturbed
sleep, dryness of the mouth, loss of taste, palpitation.

5. Clinical features of uthara vatha suronitham

“நாடுமே சுரம்வந்து நடுக்க லுண்டாம்
நாவரண்டு தலைநொந்து உடம் பழுத்தி
வாடுமே தேகமெல்லா மனிச்சம் பூப்போல்
மகாவருத்த முண்டாகி மயக்க மாகும்
சாடுமே யடிக்கடிதான் பேதி தானும்
தவிக்குமே தண்ணீர்தா னாட்ட மாகித்
தேடுமே சோற்றின்மேல் நினைவு தானும்
செய்வுதர வாதசுரோ ணிதந்தா னென்னே.”

Fever with rigor, dryness of the mouth, head ache, analgia, giddiness, passing loose stools, thirst, and excessive appetite.

6. Clinical features of sithu vatha suronitham

“வாறான சரீரமெல்லா நுழைந்து ஊதல்
மாசற்ற தோல்தானும் திரைந்து போகும்
நாறான நாறுபோல் நரம்பு சுக்கும்
நாக்குத்தான் வழவழத்துக் கோழை யாகும்
தூறான நெருப்புத்தான் பட்டர் போல
நொந்துமே சடமெல்லாங் கொப்ப ளிக்கும்
வீறான வுரிந்துபின்னை வெதும் பீங்கும்
மிக்கசித்து வாதசுரோ ணிதமா மாமே.”

Wrinkled skin, accumulation phlegm in the throat, vesicles all over the body, exfoliation, anasarca.

7. Clinical features of vaihitha vatham:

“ஆமென்ற வீங்கினதோர் விடத்தில் ரத்தம்
அழுத்தமாய்த் திரண்டுமே எங்கும் பாய்ந்து
ஓமென்று ஓட்டியே திரண்டிருக்கும்
உறுதியாய்த் தொட்டுடனே மெத்தென்றாகும்
தேமென்ற தேகமெங் கணுமு சுக்கும்
சீறியதோ ரிருமலொடு காச்சலுண்டாகும்
பாமென்ற படந்தனிலே திமிருண் டாகும்
பாரமாய் வைகிதமாம் வாதந் தானே.”

Swelling, hematoma, cough, hyperpyrexia, numbness in soles, pain all over the body.

Pararasa sekaram describes suronitham as,

“விழ்பெறு சுரோணிதந்தான் மிகவுடன் மெலிவுமாகித்
தாழ்வில் சந்துகளே வீங்கித் தகை பெற நடை கொடாமல்
வாழ்வுறு கையுங்காலும் வசமின்றி யழன்று நோவாம்
பாழ்பெறு மணங்கினாளே பயனூறப் பகர்ந்திட்டோமே.”

Debility in raktha thathu(anaemia), swelling of peripheral joints, deformed movement of joints, pain in upper and lower limb.

Uthira vatham in pararasa sekaram:

“பக்கமும் மார்பும் கூடப்பற்றியே இழுத்துக் கொண்டு
நெக்கியே மார்பிளைத்து நோதாய் நரம்பிழுத்து
ஒக்கவே சயித்தியங்கள் உயர்ந்துடன் மேலும் காலம்
மிக்குமே உதிரவாதம் என்றிது விளம்பலாமே.”

Pain and tenderness of chest and axilla, emaciation, pain and swelling of upper and lower limb.

The term suronitha vatha is also mentioned is Aathma Ratchamirtham, Anubava vaithya deva ragasivayam handled the term Uthiravathasuronitham as sonitha vatha rogam.

Our text book siddha maruthuvam handle the term *Uthiravathasuronitham* as vali azhal keelvayu as per literature sabhabathi kaiyedu.

Dhanvanthri vaithyam quotes the clinical features of sonitha vatha rogam as:

“காணுமே எலிவிடம் போல் கனப்புடன் தடிப்புமாகி
புணுடம் புளையும் குத்தும் சொறி கனப்புதந்

தோணிநுந் துடிப்புத் தேகம் கிள்ளினாற் சோதியது
மானில முலையாய் சுரோணித வாதமாமே.”

“கையினிற் கறண்டை தண்ணீர் கட்டுடுஞ் சதைதோல் வீங்கு
மையறு கருமை செம்மை பெயடுத் தெறிந்தழலும் வீக்கம்
மெய்யினைப் பிளக்கும் வாதம வியாபிக்கும் உடம்பதாக்கு
மையலர் உடம்பு தம்புக்கும் வாத சுரோணித மிதென்னே.”

Pyrexia and swelling of the body as in rat poison intoxication, pain and tenderness, twitching of muscles, loss of sensation, swelling of wrist and phalanges, black and redness of swelling due to vascular failure, hyperaemia.

Pararasa sekarams classifies vatha suronitham into five headings:

1. Clinical features of vathasuronitham:

“பகர்ந்திடும் வாதந் தன்னிற் சுரோணிதம் பகரும் காலைப்
புகுந்துடலெங்கும் நொந்நு போதவே தோல் திரைந்து
புகைந்திடு நெருப்பு பட்டாற் போலவே கொப்பளித்து
மிகுந்திட வெரிந்து பின்னை வெதும்பியே வீக்கமாகும்.

Pain and tenderness, exfoliation, eruption as in burns, swelling of joints.

“வீங்கிய வடத்திற்தானே மிகத்திரண்டேகி முட்டி
ஆங்கதை விரலாற் தொட்டே யழுத்திற் மெத்தென்றிருக்கும்
ஓங்கிய வலிப்பு முண்டா முடலினிற் கடுப்பு முண்டாம்
கோங்கெலு முலையினாளே கூறிய குணங் கடேரே.”

swelling soft on touch, severe pain with pricking.

2. Clinical features of seetha vathasuronitham:

“சொற்சீத வுதரவாத சுரோணித முழங்கால் தானும் பொற்கனைக் காலும் சந்தும் புறவடி தானும் வீங்கி நற்கோணு விரல்க நொந்து நடுபைத்திய வாதத்தில் உற்பவ குணமுண்டா மூறு நூலில் சொன்னதாமே.”

Swelling of the knee joint, ankle joint and feet, pain and swelling over the phalanges.

3. Clinical features of paithiya vatha suronitham:

“சொன்னதோர் பயித்திய வாத சுரோணிதம் வெதும்பிச் சார்ந்து வின்னமாய் குடைந்து மின்னே விரல்களி னிறைகளெல்லாம் தன்னிகப் பொருத்து நோகுஞ் சந்துகளெல்லாம் வீங்கும் மன்னிய தலையு நொந்து விரிவிழி நெறியுந் தோன்றும்.”

Pain and swelling of the metacarpo phalangeal joints.

Proximal interphalangeal joints, head ache.

4. Clinical features of silethuma vatha suronitham

“நோற்றிய சேற்பவாத சுரோணித முடல் குளிர்ந்தே ஏற்றமாய் வீங்கியந்த விடந்தொட்டான் மிகச்ட சிக்கென்றும் மாற்றுறப் பொருத்துச் சிக்கும் விரிவிழி மடநல்லாளே சாற்றிய நல்லோர் வேதத்தினினுரைத் திட்டவாரே.”

Chillness of the body, tenderness and swelling of the joints

5. Clinical features of udharatha vatha suronitham

“உரைபெறு உதரவாத சுரோணித முறைக்கும் காலைத்
தரைபெறு வாதத்தூற்றே சுரோணித குணமும்தக்க
விரிவுறு பலித்துவாத சுரோணிதக் குணமுமிக்க
சுரைபெறு உதரவாத சுரோணித குணமு முண்டாம்.”

Vitiation of vatha aggravates the the signs and symptoms of vatha suronitham.

Jeeva rakshamirtham classifies their diseases into two types

1. Pitha sonitha vatha rogam, which is soft and cause emaciation.
2. Slethuma sonitha vatha rogam has polyarthralgia and spindled shaped swelling in the phalanges.

MUKKUTRA VERUPADUGAL

“வளிமிகு வபான வியான வாயுகளதிகரிக்கும்

இனமிக மலநீர்க் கட்டும் இயம்பிய வபானன் செய்யும்
வளிவிலா வியானன் கீலின் விளங்குறு புழைகடோறும்

ஒளியுறு குற்றமெல்லா மொன்றி லொன்றுலவச் செய்யும்”

சபாபதி கையேடு.

Vatha is said to be the phenomenon responsible for movement of the parts involved in locomotor systems and hence it is responsible for the articulation of the joints, tendons and muscles. The bones and lower abdomen are considered to be the places of vatha. kabham is said to be the phenomenon responsible for the normal maintenance of the synovial fluids provides nutrition for articular cartilage disc and meniscus, and act as a lubricant for the smooth articulation of the joints.

The pathology lies in the enbu thathu (one of the entity in seven thathus) which is one among the part (kooru) of vatha in the mukkutram.

When the seven thathus and mukkutram are in equilibrium, a normal structural and physiological state of the body is ensured. As the thathus are affective by the extrinsic and intrinsic causative factors there will be distortion in the structural and functional status of the body, when the causative factors take hold of thathus separately or in a combined form it results in co-ordination of functions. There by the disease manifest and exposes its clinical features.

In *Uthiravathasuronitham*, the factors related to diet, habit, environment etc. adversely influence vatha thathu and pitha thathu in mukkutram.

The involvement of viyana vayu and abaana vayu plays a prime role in the manifestation of signs and symptoms. Viyanan is responsible for the motor and sensory functions of the body and the nutrition of its tissues. Abaanan is responsible for the assimilation of the nutritional factors from the gastrointestinal tract distribution to various thathus and expulsion of waste products through faeces, urine etc.

The pitha is responsible for the healthy maintenance of every tissue of the body and its vitiation results in inflammatory changes in the bone and other accessory structures by producing warmth, redness and immobilization in the affected joints.

The deterioration of the two main kuttrams may also accompany kabha kuttram. This leads to structural changes in the bones and the fluids of the joints, which are mainly controlled by the factors of santhigam.

Disturbance in mukkutram produce different clinical manifestations.

They are

- Swelling of the joints, pain, stiffness and restriction of movement due to disturbed vatham.

- Inflammatory changes of the joints like redness, hyperaemia and warmth due to disturbed pitham.
- Erosions of bone margin, increased synovial fluid due to disturbed kabham.

NAADI NADAI:

Naadi is the first and foremost diagnostic parameter of the siddhars. Naadi manifests the body's vital energy and regularize integrates the bodily activities.

The deranged trithathus in Uthiravathasuronitham is manifested as increased vali associated with other two thathus as per following quotations,

“திருத்தமாம் வாதத்தோடே தீங்கொடு பித்தஞ் சேரில்
பொரத்துகள் தோறும் நொந்து.”

குணவாகடம் - நோயின்சாரம்.

“காணப்பா வாத மீறில்
கால் கைகள் பொருத்து நோகும்”

காவியநாடி

Vitiation of vatha and pitha produce joint pain.

“வாதத்தின் குணமே தென்னில்
வயிறது பொருமி கொள்ளும்
தாதத்தின் மேனி கைகால்
சந்துமே கடுப்புத் தோன்றும்.”

-குறியடையாள நாடி

Increase vatha results in abdominal distension and pain in the joints.

DIFFERENTIAL DIAGNOSIS (NOI NITHANAM)

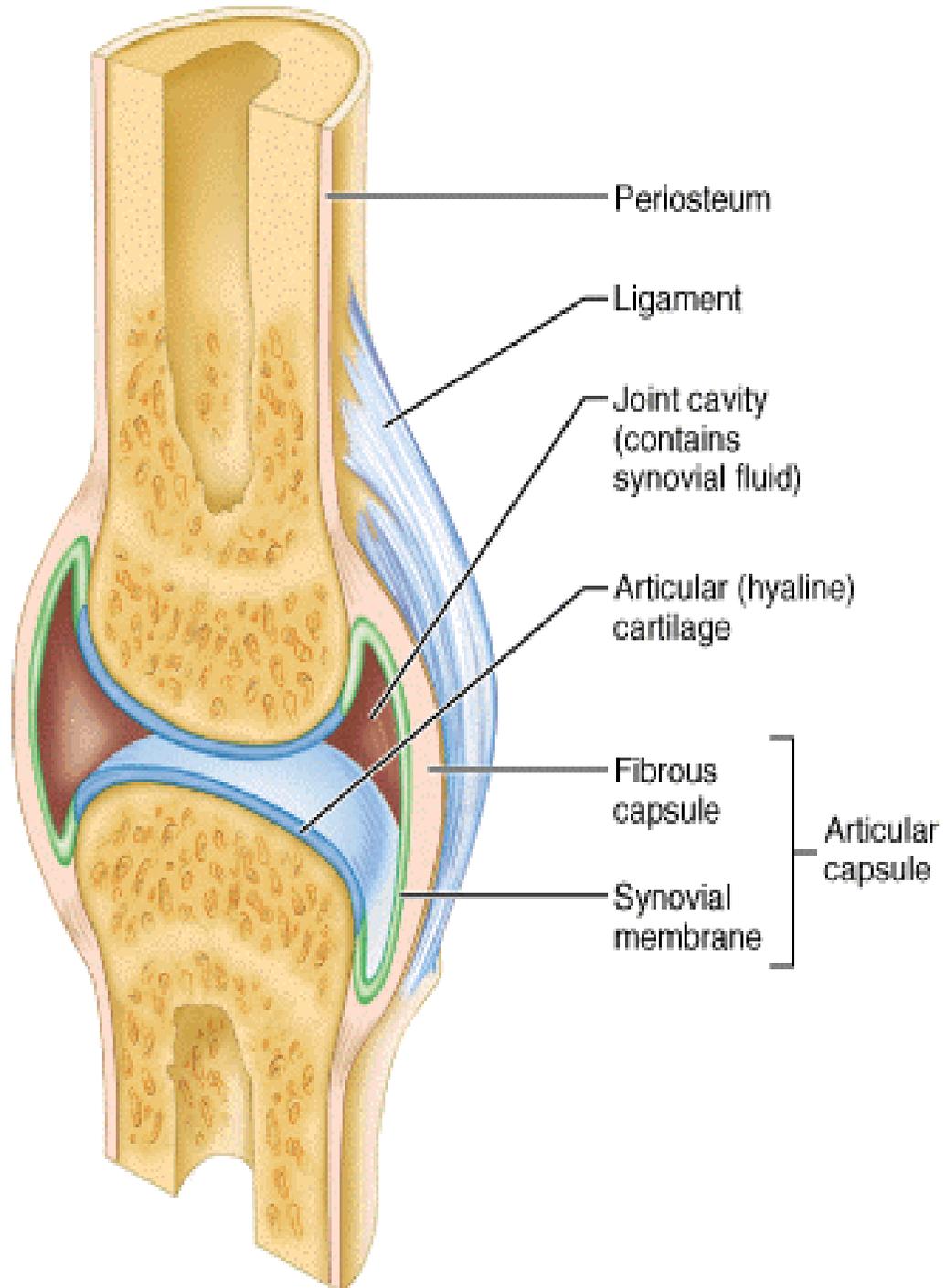
Uthiravathasuronitham is differential from others types of vatha suronitham as follows

S.no	DISEASES	SIGNS AND SYMPTOMS
	Uthiravatha suronitham	<ol style="list-style-type: none">1.swelling of ankle joints, hip joints and knee joints2.pain and tenderness of minor joints especially phalanges3.depression4.loss of appetite5.increased vatha in pitha
DIFFERENTIAL DIAGNOSIS		
1	Vatha suronitham	<ol style="list-style-type: none">1.Emaciation2.swelling of joints3.restricted movements4.joint pain5.discomfort6.Excessive salivation

		7.loss of appetite
2	sithuvatha suronitham	1.anasarca 2.wrinkles 3.neural pain 4.glossy tongue 5.sialorrhoea 6.bullous eruptions as in burns 7.exfoliation,swelling and warmthness
3	Vaigitha vatha suronitham	1.swelling with hyperaemia 2.soft on touch 3.cough with pyrexia 4.irritability
4	paithyavatha suronitham	1.hyperaemia 2.tenderness in knee,elbow and smaller joints 3.polyarthralgia 4.pyrexia 5.anaemia
5	slethumavatha suronitham	1.chillness with abdominal distension 2.severe pain and headache 3.syncope and hallucination 4.dryness of mouth and anorexia 6.tachycardia
6	utharavatha suronitham	1.fever with rigor 2.dryness of mouth 3.pain all over the body 4.head ache,giddiness 5.diarrhoea 6.excessive thirst 7.hungry

SYNOVIAL JOINT.

SYNOVIAL JOINT



RHEUMATOID ARTHRITIS

Definition:

Rheumatoid arthritis is a subacute or chronic non suppurative inflammatory polyarthritis affecting mainly the peripheral joints, usually in asymmetrical patterns, running prolonged course of exacerbation and remission often accompanied by signs of systemic and extra articular manifestation.

Aetiology:

Although the cause of Rheumatoid arthritis remains obscure there is increasing evidence that the disease is triggered by T-lymphocyte in genetically predisposed individuals with defined HLA class II haplotypes. HLA DR4 is the major susceptibility haplotype in most ethnic groups but DR1 is more important in Indians. HLA-DR4 subtypes result from only a few amino acid differences in the third hypervariable region of the amino acid sequence. Although several other HLA alleles that have more recently been associated with Rheumatoid arthritis in some populations.

Pathology and pathogenesis:

The pathogenic hallmark of Rheumatoid arthritis is synovial membrane proliferation and outgrowth associated with erosion of articular cartilage and subchondral bone often linked to proliferating

inflammatory tissue (pannus) may lead subsequently to destruction of intellectual and periarticular structures and may result in joints deformities and dysfunction seen clinically.

The earliest finding includes microvascular injury and proliferation of synovial cells accompanied by interstitial oedema and perivascular infiltration.

In synovial fluid, immune complexes activate the complement system. Kinins, phagocytic cells and the release of lysosomal enzyme and oxygen free radicals.

Mediators produced in this process stimulate synovial cells to proliferate and to produce proteinases and prostoglandins. These products cause dissolutions of the connective tissue macromolecules as well as articular cartilage. The ultimate destruction of cartilage, bone, tendons and ligaments probably result from a variety of proteolytic enzymes metalloproteinases and soluble mediators. Collagenase produced at interface of pannus and cartilage is probably largely responsible for the typical erosions.

Properties of synovium and cartilage that predisposes to Rheumatoid Arthritis.

A.Synovium;

- 1.Site of immune complex deposition.
2. Migration of monocyte precursors of type A cells that carry exogenous antigens.
3. Local production of factors that inhibit apoptosis.
4. Local release of proinflammatory tachykinins by sensory and autonomic nerves.

B.Cartilage;

- 1.Retention of antigens and pro-inflammatory cytokines.
2. Autonomous production of inflammatory mediators.
3. Limited capacity for regeneration.
4. subject to repeated mechanical injury.

Possible role of microorganism in rheumatoid arthritis pathogenesis:

1. Synovial or lymphoid transformation by viruses.
2. Deposition of bacterial antigens or super antigens in synovium.
3. Induction of anti immunity to cryptic or stress proteins by molecular mimicry.

Auto antibodies in Rheumatoid arthritis:

Auto antibodies	Target	Possible pathogenic role	% positive patients
Rhematoid factor	Self IgG	Generation of immune complexes	70
Antinuclear antibodies	Various nuclear components	Reaction with dead cells	4-6
Antihistones	Histones-I-IV	Vasculitis and uveitis	10-30
Antiribonuclear protein	Ribonuclear proteins	Polyclonal b-cell activation	30
Antiperinuclear factors	Perinuclear granules	Viral infection	70
Antikeratin	Keratin	Disease severity	95
Anti cardiocipin	Diphosphate dyl glycerol	Effect on PGI2 release,platelet aggregation.	10
Anti collagen	Type II collagen	Complement fixation joint damage	25
Antigliadin	Intestinal mucosa	Intestinal permeability to bacterial antigen triggers	25

1988 Revised American Rheumatic association criteria for classification of Arthritis.

Criteria	Definition
Morning stiffness	Morning stiffness in and around joints, lasting at least one hour before maximal improvement.
Arthritis of 3 or more joints	At least one joints are as simultaneously have soft tissue swelling of fluids (not bony overgrowth alone) the 14 possible are (right or left) PIP, MCP, wrist, elbow heel, ankle, and MTP joints.

Arthritis of hand joints	At least one joint area swollen in wrist, MCP OR PIP joints
Symmetric arthritis	Simultaneous involvement of the same joint areas (as in item 2 above) on both sides of the body (PIP, MCP OR MTP joints as acceptable without absolute symmetry)
Rheumatoid nodules	Subcutaneous nodules over bony prominence or extensor surfaces or in juxta articular region observed by the physician.
Serum rheumatoid factor	Demonstration of abnormal amounts of serum rheumatoid factor by any method that has been positive in less than 5% of normal control subjects.
Radiographic changes	Radiographic changes typical of rheumatoid arthritis on rheumatoid arthritis hand wrist x-rays include erosions or unequal bony decalcification.

A patient is said to have Rheumatoid arthritis if he or she has satisfied at least four of the above seven criteria.

THE ASSESSMENT OF FUNCTIONAL CAPACITY

Grade I - Fit for all activities - no handicap

Grade II – moderate restriction – independent despite some limitation of joint movement

Grade III – marked restriction – limited self care. Some assistance required.

Grade IV – confined to chair – or bed bound – largely incapacitated and dependent.

Differential diagnosis:

Acute onset is more difficult to diagnose than the typical established case. Therefore a complete medical evaluation often including synovial fluid analysis is indicated in all patients with significant joint manifestations.

Articular manifestations:

Most commonly involved joints are small joints of the hands, wrist, knees and feet, elbows, shoulders, sterno clavicular joints, hips and ankles. The temporo mandibular and cricoarytenoids joints are less frequently involved. Spinal involvement is limited to the upper cervical articulations.

Hand:

Swelling of PIP joints giving a fusiform or spindle shaped appearance to the fingers. Bilateral and symmetrical swelling of the MCP joints is also frequent.

Swan neck deformities develop from hyper extension of the PIP joints in conjunction with flexion of DIP joints.

Buttonhole deformity results from flexion contract of the PIP joints associated with hyperextension of the DIP joints.

Wrists:

The wrists are almost invariably involved and demonstrate palpable boggy synovium and thenar muscle wasting may be evident.

Knees:

Synovial proliferation and effusion are common ballotment on the patella or bulge sign may due to effusion popliteal cysts [Baker's cyst] may form owing to effusion or synovial proliferation into semimembranous bursa.

Feet and ankles:

Subluxation of the metatarsal head into soles often with valgus deformities of the toes.

Neck:

Neck pain and stiffness are common .Atlanto axial subluxation [C1 on C2] can be seen in upto radiographically in 30% of cases.

Spinal compression may lead to bladder or bowel incontinence or quadriplegia.

Elbows:

Proliferation synovitis into the elbow.

Hip:

Pain in the groin, lateral buttock lower back may indicate hip involvement.

EXTRA ARTICULAR MANIFESTATION:

Skin:

Subcutaneous nodules, palmar erythema and fragility of the skin, rheumatoid vasculitis.

Cardiac manifestation:

Pericarditis, conduction system block, coronary vasculitis, myocarditis, endocarditis, paricarditis, pericardial fluid shows low glucose level, elevated lactate dehydrenase.

Pulmonary manifestation:

Pleurisy, pleural effusion, nodules in lung parenchyma, chronic interstitial fibrosis, irreversible respiratory insufficiency.

Neurological manifestation:

Peripheral neuropathy produced by proliferating synovium causing compression of nerves carpal tunnel syndrome often associated with wrist or foot drop.

Ophthalmic manifestation:

Siogrens syndrome cause corneal damage with dryness of the eyes scleritis may result in visual impairment.

Felty's syndrome:

Triad of chronic rheumatoid arthritis, splenomegaly, and neutropenia is associated with lymphadenopathy.

Prognosis:

The patients with disease of such severity 25% will have complete remission of symptoms and remain fit for all activities 40% will have only moderate impairment of function. 25% will be more severely disabled. 10% will be severely crippled. The overall prognosis is much better if the many patients in the community are considered whose symptoms are never of such severe and require admission in hospital. Prognosis is poor may be associated with high titre of Rheumatoid factor insidious onset, extra articular manifestation.

Therapeutic management:

1. Relief of pain and stiffness
2. Reduction of inflammation
3. Minimizing undesirable drug side effects.
4. Preservation of muscle strength and joint functions.
5. Maintenance of as normal life style possible.

Disease modifying therapy:

Gold salts produce remissions in many cases an oral gold salt, auranofin appears to be therapeutically effective and less toxic.

Investigations:*I. Rheumatoid factor:*

Normal values

1. Non reactive for Rheumatoid factor 0-39/10ml, based on rate nephelometry or latex agglutination.
2. Weakly reactive 40-79/10ml reactive: 40-79/10ml
3. Reactive : >80/10ml.

Clinical implication:

1. Where a patient who tests positive improves, subsequent tests also remain positive.
2. A positive rheumatoid factor test often support a tentative diagnosis of early age onset of Rheumatoid arthritis.
3. An absence of rheumatoid factor doesn't exclude the diagnosis of existence of Rheumatoid arthritis.
4. Rheumatoid factor frequently occurs in lupus erythematosus, endocarditis, tuberculosis, syphilis, sarcoidosis, cancer.

II C-reactive protein:

Normal value : <0.8mg/dl by rate nephelometry.

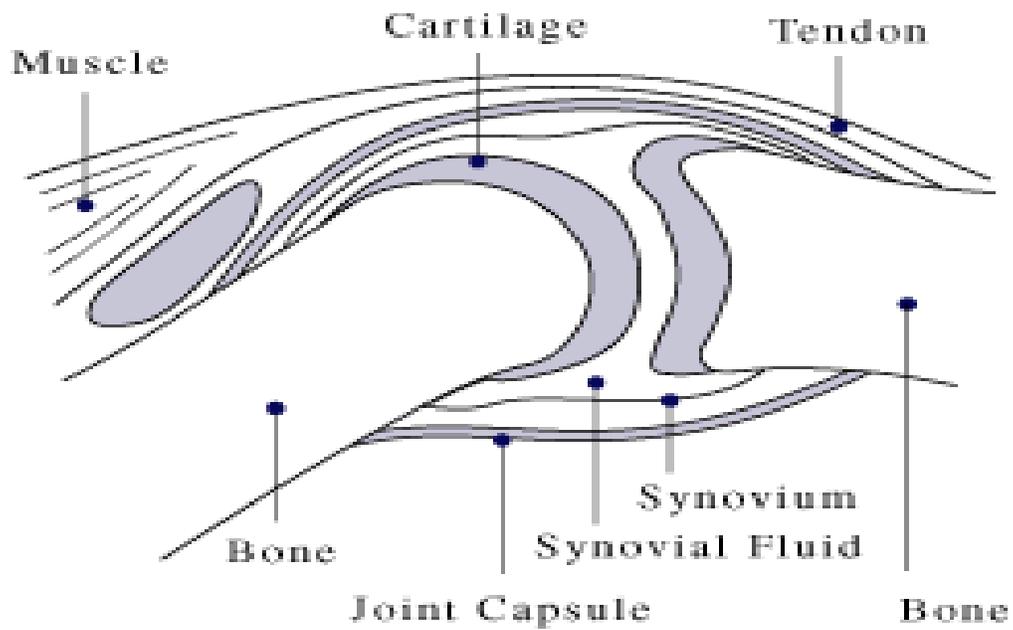
Clinical implications:

- 1) CRP is positive in
 - a) Rheumatic fever
 - b) Rheumatoid arthritis
 - c) Myocardial infarction
 - d) Malignancy
 - e) Bacterial and viral infection.

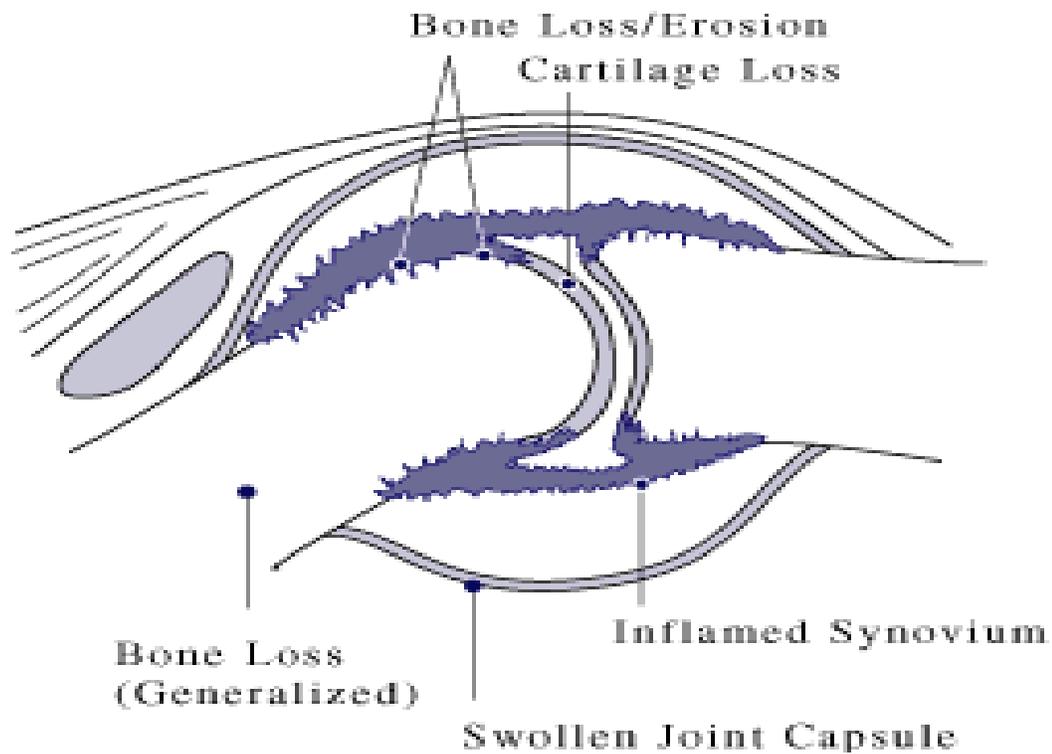
- 2) The presence of CRP has added significance over and above elevated erythrocyte sedimentation rate.

- 3) The CRP level tends to increase before rises in antibody titres and ESR level occurs.

Normal Joint



Joint Affected by Rheumatoid Arthritis



IV: SYNOVIAL FLUID ANALYSIS:

Synovial characteristics	Rhematoid arthritis	Gout	Septic arthritis	Osteo arthritis
Colour	Yellow	Yellowish white	White	Clear pale yellow
Clarity	Cloudy	Cloudy opaque	Opaque	Transparent
Viscosity	Poor	Poor	Poor	Good
Mucin clot	Poor	Poor	Poor	Good
WBC/mm ³	3000-50000	3000-50000	50000-300000	Below 3000
Poly morpho nuclear leukocytes	>70	>70	>90	>25
Total protein	>3gm/dl	>3gm/dl	>3gm/dl	>1.8-3gm/dl
Glucose level < serum	10-25%	10-25%	70-90%	5-10%
Microscopic features	RA cells	Uric crystals	Microbes	Cartilage fibres
Cultre	-	-	+	-

PINIYARI MURAIMAI (DIAGNOSIS)

Pinyari muraimai is the methodology of diagnosing in siddha science which are based on three main principles porial arithal, pulanaal artithal, and vinaathal.

Porigal are considered as the five organs perception mainly nose, tongue, eye, skin and ear, whereas the pulangal are functions of the sensory organ. They are smell, taste, touch, vision and hearing.

Vinaathal is gathering the information regarding the history of the disease, clinical feature etc. It is the focal point of the “physician-patients” relationship and establishes the bonding necessary for patient care.

The above principles correspond to the methodology of inspection, palpation, percussion and interrogation of modern medicine in arriving clinical diagnosis of the disease.

“நாடி ஸ்பாசம் நாநிறம் மொழி விழி
மலம் மூத்திர மிவை மருத்துவராயுதம்”

-தேரன்.

“மெய்க்குறி நிறம், தொனி, விழி, நா, இருமலம் கைக்குறி”

-அகத்தியர்.

Siddhars have developed a unique method of diagnosing the disease by 'En vagai thervugal'.

Hence the diagnosis is made based on the following of,

1. Naadi
2. Sparisam
3. Naa
4. Niram
5. Mozhi
6. Vizhi
7. Malam
8. Moothiram

I. Naadi

Naadi is the seat anchor of energy. It is the binding force between soul and body. Naadi is felt as vali, azhal, iyam respectively with the tips of index, middle and ring fingers over the lower end of the radius.

The three uyir thathukkal are formed by the combination of,

Edakalai + Abanan-Vali(vatham)

Pinkalai+Piranan-Azhal(pitham)

Suzhumunai+Samanan-Iyam(kabam)

The ratio between vatham,pitham and kabam is 1:1/2:1/4 respectively.In *Uthiravathasuronitham* the following types of naadi are seen commonly,

1. Vathapitham
2. Vathakabam
3. Kabavatham

II.Sparisam (palpation)

Skin examination can be made out by inspection, touch (palpation) and reveals about the warmthness/chillness, dry/weeping skin, rough/smooth, soft/hard, tenderness, presence of ulcers, fissures, swelling, wrinkles etc.

In case of *Uthiravathasuronitham*, pain, tenderness, swelling, subcutaneous nodules can be noticed.

III.Naa (tongue examination)

In the case *Uthiravathasuronitham* glossy, coated, redness of the tongue is noted in some cases.

IV.Niram (colour changes)

There was no abnormality noted in *Uthiravathasuronitham*.

V.Vizhi (eye)

Burning sensation of eye, lacrimation, irritation, and colour are also noticed under this heading.

In the case of *Uthiravathasuronitham* no abnormalities seen in eyes.

VI.Malam.

Vatha type-black colour stools with constipation.

Pitha type-loose stools with yellowish red colour.

Kaba type-white coloured stools with mucous.

Thontha type posses some of the features of two dhoses.

Other examinations like diarrhea presence of blood, undigested matters in the stool and the odour should be studied.

In *Uthiravathasuronitham* constipation is noted in some cases.

VII.Moothiram

It consist of neerkuri (niram,manam,edai,nurai,enjal) and neikuri.

Neerkuri:

“அருந்துமாறிரதமும் அவிரோதமதாய்
அ.கல் அலர்தல் அகாலவுள் தவிர்ந்தழற்
குற்றளவருந்தி உறங்கி வைகறை
ஆடிக்கலசத் தாவியே காது பெய்
தொரு முகூர்த்தக் கலைக்குட்படு நீரின்
நிறக்குறிழ நெய்க்குறி நிருபித்தல் கடனே.”

Prior to day of urine analysis the patients were adviced to take a balanced diet and good sleep.Urine for examination should be collected in the early morning after the patient got up from bed. The first flow of urine is

discarded because it may contain extraneous material, the middle flow is then collected in a clear glass vessel. The examination involves two stages

Niram indicates the colour of the urine

Manam indicates the smell of the urine

Edai indicates the specific gravity of urine

Nurai indicates the frothy nature of urine

Enjal indicates the quantity of urine

In addition frequency of micturation, sedimentation of urine is noted.

In *Uthiravathasuronitham* there are no abnormalities in the above said features.

Neikuri:

The examination takes place in the sun light. The urine is examined by dropping sesame oil into it without shake. The spreading of oil is observed.

Character of vatha neer:

“அரவென நீண்டின.:தே வாதம்”

When the drop of oil spreads like a snake it indicates vatha neer.

Character of pitha neer:

“ஆழி போல் பரவின.:தோ பித்தம்”

When the drop of oil spreads like a ring it indicates pitha neer.

Character of kabha neer:

“முத்தொத்து நிற்கின் மொழிவதன் கபமே.”

When drop of oil remains as that of pearl it indicates kabhaner.

Character of thontha neer:

“அரவிலாழியும் ஆழியில் அரவும்
அரவின் முத்தும் அழியில் முத்தும்
தோற்றில் தொந்த தோடங்களாமே.”

When the drop of shows two shapes enclosed into the urine, it indicates mukkuttra neer.

In *Uthiravathasuronitham*, the neikuri spreads like a snake.

The facts regarding envagai thervugal suggest that they are the mostly used diagnostic implements in siddha system of medicine.

Besides envagai thervugal, a disease can also be diagnosed by means of other methods namely thinaigal, paruvakalangal, uyir thathukkal, udal thathukal and pori pulangal. A combination of all these diagnostic criteria is helpful to attain a proper diagnosis with complete entity based principles of siddha science.

Five types of lands:

Nilam is classified into five types, depending on the surrounding vegetation, landscape and ecological state. Study of the five places is very much necessary, as few disease are common in particular lands.

S.No	Land type	Synonym	Common disease
1	Kurinji	Hilly tract	Liver disease flourosis
2	Mullai	Forest	Pitha diseases, liver diseases
3	Marutham	Agriculture	Ideal place for health living
4	Neithal	Seashore land	Liver diseases
5	Paalai	Parched wasteland	Vatha, pitha, kaba diseases.

PARUVA KAALAM:

Siddhars have classified a year into six seasons each constituting two months. They are,

S.No	Kaalam	Synonym	Kuttram	Suvai
1.	Kaarkaalam (august16- october 15)	Early rain	Vatham ++ pitham+	Inippu pullipu uppu
2.	Koothirkaalam (october16-december15)	Late rainy	Vatham – Pitham++	Inippu kappu thubarpu
3.	Munpanikaalam (December 16 - February 15)	Early dew	Pitham -	Inippu pulippu uppu
4.	Pin pani kaalam (February 16- april15)	Late dew	Kabham+	Inippu pulippu thubarpu
5.	Elavenirkaalam (april16- january15)	Early summer	Kabham++	Kaippu karpu thubarpu
6.	Muthuvenirkaalam	Late summer	Vatham + kabham-	Inippu
++ →vetrunilai valarchi, +→thannilai valarchi, - →thanillai adaithal.				

Some of the diseases are more prevalent during a particular paruvakaalam and study of it will be of much use for diagnosis.

In case of *Uthiravathasuronitham* the prevalence of the disease in kaarkaalam due to the vitiation of vatha.

UDAL VANMAI :(BODY IMMUNITY)

The vanmai is classified into three kinds, they are,

1. Iyarkai vanmai
2. Seyarkai vanmai
3. Kaala vanmai

IYARKAI VANMAI:

Natural immunity of the body exists from birth.

SEYARKAI VANMAI:

Improving the health by intake of nutritious food materials, activities and medicines.

KAALAVANMAI:

Development of immunity according to age and environment. When udal vanmai is affected they may be possibility of *Uthiravathasuronitham*.

MUKKUTRANGAL:

“மிகினும் குறையினும் நோய் செய்யும் நூலோர்

வளி முதலா எண்ணிய மூன்று”

திருவள்ளுவர்.

Vali, azhal, iyam are known as mukkutram.

I. VALI:

Vali is the kinetic energy, which influences all motions.

Vali is located in the abanan, motion, edakalai, spermatic cord, iliac bone, skin, nerves, joints, hair follicles, muscles, bones and thigh.

S.no	Name	Function
1.	Piranan	Respiration, digestion
2.	Abanan	Expels stool,urine ,semen foetus
3.	Viyanan	Nourishes whole body
4.	Uthanan	Speech,expels vomitus,hiccup
5.	Samaanan	Assimilation of end products regulates other forces.
6.	Nagan	Blinking of eyes
7.	Koorman	Vision,lacrimation
8.	Kirugaran	Nasal,oral secretions
9.	Devadhathan	Sleep,fatigues
10.	Thananjayan	Oedema,hyperacusis

In case of *Uthiravathasuronitham*:

1. Abanan:

Constipation, scanty micturition, polyurea.

2. Viyanan:

Pain and tenderness over the affected joints

3. Samanan:

Affected due to other vayus are affected

4. Koorman:

Burning sensation of eyes, insomnia, cataract.

5. Kiruهران:

Polyphagia, polydypsia

Above vayus are mainly affected, other vayus commonly not affected.

II.AZHAL:

Azhal is the charge for all transformation. Azhal is classified into 5 types, they are

S.No	Name	Location	Function
1.	Analam	Stomach,small intestine	Dissolvent and digestive
2.	Ranjaham	Liver,spleen,stomach	Colouring,pleasing,glastifying
3.	Sathagam	Heart	Effective, efficient
4.	Alosagam	Eyes	Seeing,consideration
5.	Prasagam	Skin	Complexaion of skin

In case of *Uthiravathasuronitham*:

1. Ranjaham:

Raised ESR, swelling.

2. Sathaham:

Unable to carry out regular works properly.

3. Prasaham:

Redness, hyperpigmentation.

III.IYAM:

It stabilizes, maintains and lubricates all movements. Iyam is located insamanan, semen, head, tongue, fat, bonemarrow, blood, nose, chest, nerves, brain, intestine, eye, stomach and pancreas.

Iyam is classified into 5 types.They are

S.No	Name	Location	Function
1.	Avalambagam	Heart	Supports all the others
2.	Kilethagam	Stomach	Moisture and nourishes food
3.	Pothagam	Tongue	Take care of perception
4.	Tharpagam	Head	Gives satisfaction
5.	Santhiham	Joints	Connects, stability, lubrication and movement to joints

In case of *Uthiravathasuronitham*,

1. Avalambaham:

Affected due to the other iyams are affected.

2. Tharpaham:

Insomnia, burning sensation of the eyes.

3. Kilethaham:

Loss of appetite.

4. Santhiham:

Joints are mainly affected. Generally other kabhas are not affected.

Abnormal functions of vali:

Pain in the whole body, fasciculation, inflammation, redness and roughness of the skin, hardness of limbs, astringent taste in the mouth, tastelessness, sweating, sleep contraction and numbness or paralysis of the limbs, tremors, muscular wasting, decreased excretion of stools and urine, thirst, blackish discolouration of skin, stools, urine and conjunctival discolouration.

Abnormal functions of azhal:

Indigestion, acidity, burning sensation in the heart, throat and stomach.

Abnormal functions of Iyam:

Whiteness of complexion, cold, itching, dullness, oiliness, loss of sensation, a sense of sweetness in the mouth.

	Vali	Azhal	Iyam
Increased features	Wasting, blackish discolouration, tremors, distended abdomen, constipation, weakness, Insomnia, lack of inspiration	Yellowish discolouration of the eyes, skin, urine, motion, polyphagia polydypsia	Loss of appetite excessive salivation diminished activity bulky feeling cough dyspnoea excessive sleep
Decreased feature	Body pain feable voice, diminished capability of brain, syncope	Decreased appetite pallor, derangement of kabha	Giddiness, crepitus in the joints, prominence of bone dry cough, excessive sweating, palpitation

Relation between suvai, panchabootham and mukkutram

S.No	Suvai	Panchabootham	Mukkutram
1.	Enippu	Prithvi+Appu	Kabham↑Vatham↓Pitham↓
2.	Pulippu	Prithvi+Theyu	Kabham↑Vatham↑Pitham↓
3.	Uppu	Appu+Theyu	Kabham↑Pitham↓Vatham↓
4.	Kaippu	Vayu+Ahayam	Vatham↑Kabham↑Pitham↓
5.	Kaarpu	Vayu+Theyu	Vatham↑Kabham↓Pitham↓
6.	Thuvarppu	Prithvi+Vayu	Vatham↑Kabham↓Pitham↓
Valarchi-↑, Samapaduthal-↓.			

Udalkattugal(Seven physical constituents):

1. Saram (chyle)

It is responsible for the growth and development. It keeps the individual in good spirit and nourishes the blood.

2. Chenneer (blood)

Blood imparts colour to the body and nourishes the muscles responsible for the ability, intellect of individual.

3. Oon (muscle)

It gives shapes of the body according to the requirement for the physical activity, nourishes fat and gives plumbness.

4. Kozhuppu (fat)

It helps in lubricating the different organs and maintains oily matter of the body.

5. Enbu (bone)

Supports the system and responsible for the posture and movement of the body.

6. Moolai (marrow)

It fills the bone cavity, nourishes semen, and imparts strength, endurance and shining appearance.

7. Sukkilam or suronitham(sperm or ovum)

It is responsible for the reproduction.

S. no	Udalkattugal	Increased conditions	Decreased condition
1	Saaram	Leads to diseases identical to the increase in kabha like loss of appetite, excessive salivation, depression etc.	Loss of weight, tiredness, laziness, dryness of the skin, diminished activity of the sense organs
2.	Chenneer	Boils and tumours in different parts of the body, splenomagaly, colic pain, increased blood pressure, redness of eyes, skin, jaundice, haematuria	Tiredness, lassitude, anemia
3.	Oon	Tumours, extra growth around the neck, face, abdomen, thigh, genitalia	Muscle wasting
4.	Kozhuppu	Identical to that of increased oon association with dyspnoea and loss of activity	Pain
5.	Enbu	Bigger in size and excessive dentition	Weak bones and nails
6.	Moolai	Heaviness, swollen eyes swollen phalanges, oligurea, non-healing ulcers	Osteosporosis and shrunken eyes
7.	Sukkila or suroni	Increased sexual activity and signs identical to urinary calculus	Failure to reproduction, pain in genitalia

GNANENDHIRIYAM:

1. Mei- feels all type of sensation.
2. Vaai- for identifying taste
3. Kan-meant for vision
4. Mooku-for identifying the smell
5. Sevi-for hearing

In case of *Uthiravathasuronitham*:

1. Mei-pain and tenderness of the joints
2. Vaai-excessive salivation

KANMENDIRIYAM:

1. Mai-majority of normal works done by hands
2. Kaal-for walking
3. Vaai-for speaking
4. Eruvai for defecation
5. Karuvai-for reproduction.

In the case of *Uthiravathasuronitham*

Kai, Kaal-difficulty to use the limbs, others are mostly normal.

LINE OF TREATMENT:

In siddha system, the main aim of the treatment is to whittle down,udarpini(due to mukkutram) and manapini (due to alteration in mukkutram). Treatment is given not only for complete healing but also for the prevention and rejuvenation.

This is said as follows,

Kaapu (prevention)

Neekam (treatment)

Nirappu (restoration)

Kaapu:

Prevention and cure of diseases are the basic aims of any medical system,but has been the corner stone of siddha system siddhars had followed a rational and scientific way of prevention of illness.They had described general preventive measures and special measures that were applicable to diseases of certain organs.

Neekam:

The three uyir thathukkal which are the organisation, regularization and integration of the body structure and their physiological function.

“நோய் நாடி நோய் முதனாடியது தணிக்கும்

வாய் நாடி வாய்ப்பச் செயல்.”

- திருவள்ளுவர்.

So it is essential to clear is etiology and the ways of treating the disease with medicine diet, habits, nature of the patient, severity of illness season etc. should also be kept in mind.

The aim of pini neekam is based on,

1. To bring the three kuttram in equilibrium.
2. Treatment to the sub-ordinate naadi according to the deranged uyirthathus.
3. To build up seven body constituents.
4. Treatment of the diseases and its symptoms by internal medicines, topical application of medicated oil.
5. Diet and prevention of disease.
6. To increase natural immunity.
7. Treatment for karma of previous incarnation.

Niraivu:

The patient needs good discussion, motivation and persuasion to accept the eventuality of the disease and prepare for life style that provides disease free life.

Anupaanam:

In siddha system of medicine the adjuvant is one of the most important thing during therapy.

“அனுபானத்தாலே யவீழ்தம் பலிக்கும்

இனிதான சுக்கு கன்னல் இஞ்சி – பினு முதகால்

கோமயம் பால் முலைப்பால் கோநெய் தேன் வெற்றிலை நீர்

ஆமிதையாராய்ந்து செய்யலாம்.”

- தேரன் வெண்பா

Pathiyam:

During the course of treatment according to the drug administered to the patient and nature of the disease, the patient is advised to follow certain precautions regarding diet and physical activities. This form of medicine advised in siddha system of medicine is termed as “pathium”

Pathiyam for vatha disease as mentioned as Pathartha guna sinthamani is as follows,

“செங்கமுநீர் தோடைத் தேன்மிலகு நல்லெண்ணெய்

தங்கு பெருங்ட காயம் தமுதாழை எங்கெங்கும்

கூட்டுசிறு முத்து நெற் கோதில் உழுந்தி வைகள்
வாட்டு மனிலத்தை மதி.”

சேர்க்கத்தக்கன:

செங்கமுநீர் கிழங்கு, குறிஞ்சி தேன், மிளகு கோட்டம் எள்நெய், நெய்,
உழுந்து, பெருங்காயம், தழுதாழையிலை சிற்றாமணக்கு.

நீக்கிவேண்டியவை

புளிப்பு, துவர்ப்பு சுவையுள்ள பொருள்கள்.

MANAGEMENT OF UTHIRAVATHASURONITHAM:

According to siddha basic science the purgative was given to the patients for derangement of deranged doshas.

After derangement of doshas,

Kaala kanda mega narayana chanduram 250mg with chooranam1gm (chukku,milagu,omam-equal quantity)with murungai pattai kudineer 15ml twice daily given internally,*lahuvidamutty thylam* applied externally,

To advice the patients to do yogasanas especially

1. Padmasana
2. Yogamutra
3. Pachimodhasana
4. Santhiasana

Physical therapy:

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

Physiotherapy includes:

1. Active exercise
2. Passive joint movement
3. Local heat
4. Massage
5. Electrical stimulation of muscle
6. Ultra sound therapy
7. Light therapy, ultraviolet rays and infra red rays

Types of exercises:

1. Range of motion exercise
2. Strengthening exercise
3. Limbering up exercises

Details of range of motion exercises:

1. Upper extremities: Shoulder

1. Arms at side with elbow straight bring arms forward upward by ear.
2. Arms at side with elbow straight take arms sideward-upward.
3. Arms at side bend elbow to right angle and take hands apart.

Elbow:

1. Bend elbow-touching fingers to top of shoulder.
2. Straighten elbow.

Fore arm:

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

Wrist:

1. Keeping forearm steady, move the wrist up and down as in waving.
2. Again hold forearm steady, move the wrist up and down as in hand shaking.
3. Make circle with hands.

Hand and fingers:

1. Make tight fist.
2. Open fingers as wide as possible.
3. with the hand open spread fingers away from each other and then together.
4. Touch tip of the thumb to the tip of each fingers.
5. Bend the thumb in toward palms of the hand.

II. Lower extremities:

Knee:

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

Ankle:

1. Pull foot up and in, and then push back downward.
2. Make circle with foot.
3. Pull foot in toward other foot.
4. Pull foot to outside.

Toes:

Pull up on toes then curl toes under.

Neck:

1. In the sitting position twist your head as far as possible in each direction.
2. Sit or stand with your hands on the hips. First circle the head clockwise then counter clockwise.
3. In the sitting position try to touch each shoulder with your head.
4. In the sitting position look behind as far as possible and then look at your toes.

Exercise benefits for individuals with arthritis:

1. Helps to preserve muscle strength and normal mobility of joints.
2. Relieves pain and stiffness.
3. Prevent further deformities.
4. Improves overall physical fitness.
5. Improves co-ordination.

Heat and cold treatment:

Heat and cold treatment are effective means of relaxing muscles and relieving pain in arthritis joints. A hot bath, hot pads, paraffin wax and cold compression are some methods frequently used.

MASSAGE:

A special method of rubbing is called massage.

Massage is a combination of several different motions of the hand, including rubbing, squeezing, circular movements with light and heavy pressure with fingers.

Massage stimulates venous and lymphatic circulation and promotes absorption of exudates. Massage helps to maintain the tone of muscles.

MATERIALS AND METHODS.

MATERIALS AND METHODS:

POPULATION:

A: About the disease: In siddha literature the clinical features of Rheumatoid arthritis according to Yugi muni is given below

“வைகிதமாய்க் கணைக்காலு முழங்கால் தானும்
மற்கடஞ் சந்து புற வடியும் வீங்கிச்
செய்கிதமாற் சிறுவிரல்கள் மிகவும் நொந்து
சிந்தை தடுமாறியே சலிப்பண்டாகும்
பைகிதமாம் பயித்தியத் தில்லாத மிஞ்சிப்
பாரமாய் உற்பவித்து அழலுண்டாகும்
உய்கிதமாம் அசளமது தானும் வேண்டா
உதிரவாதத் சுரோனிதத்தி னுணர்ச்சியாமே.”

Pain with swelling in ankle knee joints, depression, loss of appetite.

B: According to modern aspect, clinical features of Rheumatoid arthritis:

1. The patient's complaints of insidious onset of pain, swelling and stiffness of joints.
2. Usually PIP joints are MCP joints of hands are affected.
3. Fever, anorexia.
4. Morning stiffness.(more than one hour)
5. Spindled appearance of fingers.
6. Swan neck deformity.
7. Button hole deformity.
8. Broadening of the fore foot.
9. Rheumatoid nodules.
10. Restricted movements.

The population for the study consists of Rheumatoid arthritis patients satisfying the inclusion and exclusion criteria given below.

Definition of the disease:

Rheumatoid arthritis is defined by clinical symptoms and ESR (>20mm/hr), CRP (>0.8mg/dl), RA factor (>20IU/ml).

SAMPLE:

Rheumatoid arthritis patients attending Ayothidhas Pandithar Hospital of the National institute of Siddha, Tambaram Sanatorium, Chennai-47.

SAMPLE SIZE:

It is proposed to study a sample of 30 patients.

INCLUSION CRITERIA:

- i. Age between 20 years and 45 years.
- ii. Willing to give specimen before and after treatment.
- iii. Willing to be treated for 48 days as IP/OP (with clinic visits once in 7 days).

EXCLUSION CRITERIA:

A patient is not eligible for admission to the trial if any of the following is applicable.

1. Cardiac disease, hypertension (HT).
2. Use of narcotic drugs.
3. Pregnancy.
4. Lactation.

WITHDRAWAL CRITERIA:

1. Development of any adverse drug reaction.
2. Occurance of any other serious illness.

TRIAL DRUG AND DURATION:

1. *Kalakandameganarayana chendooram* –250mg twice a day with 1g of chooranam along with 30 ml of *Murungaipattai kudineer* (Moringa Olifera).
2. *Lahavidamutty Thylam* – 15ml local application twice a day.

TRIAL TREATMENT PERIOD - 48 days

TEST AND ASSESSMENT

Tests:

1. Rheumatoid factor
2. CRP
3. Routine investigation – TC, DC, ESR, Hb, Blood sugar, Serum cholesterol, Urine sugar, Albumin deposits, Stools-ovacyst, Occult blood etc., will be carried out.

Clinical:

1. Insidious onset of pain, swelling and stiffness of joints.
2. Usually PIP joints are MCP joints of hands are affected.
3. Fever, anorexia.
4. Morning stiffness.(more than one hour)
5. Spindled appearance of fingers.
6. Swan neck deformity.
7. Button hole deformity.
8. Broadening of the fore foot.
9. Rheumatoid nodules.
- 10.Restricted movements.

CONDUCT:

Rheumatoid arthritis patients satisfying inclusion and exclusion criteria will be eligible for the admission to the trial. Informed consent form

will be attained the patient. Lab tests will be carried out before treatment and at the end of the treatment.

A day before starting trial treatment cleaning of mukku-trams by purgation will be carried out. For IP patients, the trial treatment will be given by the doctor. During trial treatment period OP patients will be followed in the OPD once in seven days for 48 days. At each clinic visit, the patient will be given trial drugs for seven days.

FORMS:

In forms I and II required information would be collected on each patient.

- I. Form I – selection proforma
- II. Form II – assessment proforma filled once in seven days during 48 days trial treatment period.

OBSERVATION AND RESULTS.

OBSERVATION AND RESULTS:

Results were observed with respect to the following criteria

1. Sex distribution
2. Age distribution
3. Religion distribution
4. Kaalam distribution
5. Occupational status
6. Diet reference
7. Seasonal reference
8. Thinai reference
9. Socioeconomic status
10. Physical constitution
11. Gunam reference
12. Mode of onset
13. Duration of illness prior to treatment
14. Clinical manifestation
15. Distribution of tridosha
16. Udal kattugal reference
17. En vagai thervugal
18. Involvement of joints

19. Results after treatment

- i. Changes in pain
- ii. Changes in restriction of movements
- iii. Changes in functional ability

20. Overall results

1. Gender distribution:

For the study on Uthiravathasuronitham 30 patients were selected one case was male and 29 cases were females.

Gender	No of cases	Percentage (%)
Male	01	3.3
Female	29	96.7
Total	30	100.0

2. Age distribution

Out of 30 cases most of the cases were between 36-45 years.

Age (years)	No of cases	Percentage (%)
21-25	1	3.3
26-30	3	10.0
31-35	7	23.3
36-40	9	30.0
41-45	10	33.3
Total	30	100.0

3. Occupational status

Since occupational history is closely relates with the exacerbation of the exisisting condition, detailed history was made and tabled.

Occupation	Number of cases	Percentage (%)
House wife	26	86.7
Tailor	1	3.3
Office workers	2	6.7
Teacher	1	3.3
Total	30	100.0

4. Diet reference:

Food habit.	Number of cases	Percentage (%)
Veg	2	6.7
Non - Veg	28	93.3
Total	30	100.0

5. Seasonal reference

12months of a year classified in to six paruva kaalam with respect to solar changes. when clinical trial of 30cases were enquired about the seasonal link, the severity of the pain and early morning stiffness is more in koothir and munpani i.e, October 16 to February 15.

Seasons	Number of cases	Percentage (%)
Kaar kaalam (early rainy)	4	13.3
Koothir kaalam (late rainy)	14	46.7
Munpani kaalam (early dew)	8	26.7
Pin pani kaalam (late dew)	1	3.3
Elavenil kaalam (early summer)	2	6.7
Muthuvenil kaalam (late summer)	1	3.3
Total	30	100.0

6. Thinaï reference:

A closer scrutiny of siddha medical literature reveals the five categories of land has different micro climate and biotic factors including food and habits of the people settled in these regions. This classification is more useful not only for assess the incidence of the diseases, but also to administer the appropriate medicine for particular diseases. Out of thirty cases taken most of the cases (14%) came from neithal plain (coastal triad).

Thinai	No. of cases	Percentage (%)
Kurinji	8	26.7
Marutham	2	6.7
Neithal	14	46.5
Mullai	6	20
Paalai	-	-
Total	30	100.0

7. Socio economic status:

Out of 30cases taken most of them were from low income group.

Socio economic status	No of cases	Percentage (%)
Low income group	16	53.3
Middle income group	10	33.3
High income group	4	13.3
Total	30	100.0

8. Physical constitution:

Yaakai ilakanam	No of cases	Percentage (%)
Vali udal	3	10
Azhal udal	2	6.7
Iya udal	1	3.3
Thontha udal	24	80
Total	30	100.0

9. Gunam reference:

Gunam	No of cases	Percentage (%)
Sathuva gunam	1	3.3
Rajo gunam	25	83.3
Thamo gunam	4	13.3
Total	30	100.0

10. Mode of onset:

Mode of onset	No of cases	Percentage (%)
Acute	2	6.7
Sub acute	8	26.7
Chronic	20	66.7
Total	30	100.0

Regarding mode of onset 20 patients 66.7% chronic state , 8 patient 26.7 where sub acute onset only 2 patient 6.7% were in acute state of disease.

11. Duration of illness prior to treatment:

Duration of illness (years)	No of cases	Percentage (%)
<1	2	6.7
1-	8	26.7
2-	7	23.3
3+	13	43.3
Total	30	100.0

12. Clinical manifestation:

Findings	No of cases	Percentage (%)
Arthritis of three or more joints	30	100
Arthritis of hand joints	28	93.3
Morning stiffness	27	90
Fever	4	13.3
Anorexia	22	73.3
Spindled appearance of fingers	18	60
Broadening of fore foot	2	6.7
Rheumatoid nodule	1	3.3

13. Distribution of Trithathu:

The chief constituent of body vali, azhal, iyam is within normal range the physical and mental health is maintained. The derangement results in Uthiravathasuronitham.

13. A) Vali:

Classification of vali	No of cases	Percentage (%)
Pranan	4	13.3
Abanan	22	73.3
Samanan	30	100.0
Viyanan	30	100.0
Udhanan	-	-
Nagan	-	-
Koorman	-	-
Kiruharan	-	-
Devadhathan	21	70.0
Dhananjayan	-	-

13. B) Azhal:

Classification of azhal	No of cases	Percentage (%)
Analam	26	86.7
Ranjagam	30	100.0
Sathagam	30	100.0
Alosagam	1	3.3
Prasagam	2	6.7

13. C) Iyam :

Classification of Iyam	No of cases	Percentage (%)
Avalambagam	30	100
Tharpagam	4	13.3
Santhigam	30	100
kilaethagam	-	-
Pothagam	-	-

14. Udal kattugal:

Seven physical constituents	No of cases	Percentage (%)
Saaram	28	93.3
Seneer	30	100
oon	28	93.3
Kozhuppu	28	93.3

Enbu	30	100
Moolai	-	-
Sukilam/suronitham	-	-

15. Envagai thervugal:

Envgai thervugal	No of cases	Percentage (%)
Naa	4	13.3
Niram	12	40
Mozhi	0	-
Vizhi	26	86.7
Sparisam	28	93.3
Malam	22	73.3
Moothiram	6	20
Naadi		
a.vatham	1	3.3
b.vathapitham	11	36.7
c.vathakabam	8	26.7
d.pitham	0	-
e.pithavatham	2	6.7
f.pithakabam	0	-
g.kabham	0	-
i.kabhavatham	8	26.7
k.kabhapitham	0	-

16. Neerkuri, neikuri reference:

Type of test	No of cases	Percentage (%)
Neerkuri Vaikol niram (straw colour)	30	100.0
Nei kuri		
a.aravena neelal	27	90.0
b.muthothu nitral	3	10.0

17. Joints involved:

Name of the joints	No of cases	Percentage (%)
Cervical vertebrae	4	13.3
Right shoulder	6	20.0
Left shoulder	8	26.7
Right elbow	26	86.7
Left elbow	28	93.3
Right wrist	27	90.0
Left wrist	20	66.7
Right MCP	28	93.3
Left MCP	27	90.0
Right knee	18	60.0
Left knee	16	53.3
Right ankle	28	93.3
Left ankle	25	83.3
Right PIP	24	80.0

Left PIP	26	86.7
Right metatarsus	18	60.0
Left metatarsus	12	40.0
Right hip	8	26.7
Left hip	6	20.0
Lumbosacral	24	80.0

RESULTS FROM TREATMENT:

Changes in restriction of movement in affected joints:

Restriction of joints	No of cases			
	B T	%	A T	%
Fully	2	6.7	-	-
Partial	25	83.3	8	26.7
No	3	10	22	73.3

Regarding restriction of movement 83.3% of the patients were partially restricted before treatment. After the treatment 8 patients (26.7%) were partially restricted 22 patients (73.3%) were not restricted to movement.

Changes in functional ability:

Functional grade	No of patients			
	B T	%	A T	%
Grade IV	-	-	-	-
Grade III	4	13.3	2	6.7
Grade II	19	63.3	6	20.0
Grade I	7	23.3	22	73.3
Total	30	100.0	30	100.0

Showing the overall results:

Results	No of cases	Percentage (%)
Good improvement	21	70
Moderate improvement	5	16.67
Mild improvement	4	13.33
No improvement	-	-
Deteriorated	-	-
Total	30	100

STATISTICAL RESULTS:

Analysis of subjective parameters observed before and after treatment of thirty patients of *Uthiravatha suronitham* shows

- Restriction of movements according to *proportion analysis* shows significant results i.e, restriction of movement is reduced from 90% to 26.7%.
- R.A. factor to *proportion analysis* shows significant results i.e, R.A. factor changes from 96.7% positive to 20% negative.
- C.R.P. according to *chi-square analysis* shows significant results i.e, C.R.P. changes from 73.3% positive to 46.7% negative.
- Functional ability according to *chi-square analysis* significant i.e, functional ability is improved from 76.7% to 26.7%.

Analysis of objective parameters by *paired t-test* observed before and after treatment of thirty patients of *Uthiravatha suronitham* shows

- ESR half an hour analysis shows significant results i.e, 22.8% reduces to 10.3%.
- ESR one hour analysis shows significant results i.e, 46.2% reduces to 20.9%.
- Hb (g %) analysis shows significant results i.e, 10.7% improved to 11.6%.

RHEUMATOID ARTHRITIS HAND

Before treatment



O.P No: T9408 Valli; 28; F

After treatment



O.P.No:T9408; Valli; 28; F

DISCUSSION.

DISCUSSION:

The drastic changes in the human life style, dietary habits and environmental hazards may alter the immune mechanism of the body. So, the production of autoantibodies is also common which produces autoimmune diseases especially affecting musculo-skeletal system. *Uthiravathasuronitham* is one among such disorder affects the patients physically and psychologically often tends to have progressive disabling unless proper management and prophylaxis are promptly undertaken.

With reference from Yugi vaidhya chinthamani 30patients with unique signs and symptoms related to *Uthiravathasuronitham* is pain , tenderness, swelling of joints, morning stiffness, restriction of joint movement and deformity were admitted in the inpatient and outpatient department of maruthuvam, Ayothidoss pandithar hospital, NIS.

All the patients were subjected to preliminary investigations which include haematology and urine. To balance the altered three thathus a purgative was given on the previous day. The trial medicines *Kaalakandameganarayana chenduram* was internally administered and *lahuvidamutty thylam* applied externally from the next day. All the cases were treated for 48days. All the patients were advised to follow strict diet restriction and peaceful life style to normalize the immune mechanism. The

signs and symptoms of *Uthiravathasuronitham* were compared with those of Rheumatoid arthritis mentioned in modern medicine. The triggering factors were also studied. Daily observation was made during this study. The observation discussed below.

Incidence with gender reference.

Male			Female		
Good result	Fair result	Poor result	Good result	Fair result	Poor result
-	1	-	20	6	3

The data shows that the incidence is more among females (96.7%) than male (3.3%).

With reference to age group.

Age	No of cases	Good	Fair	poor
21-25	1	-	1	-
26-30	3	2	1	-
31-35	7	5	2	-
36-40	9	6	2	1
41-45	10	7	1	2

Among the total number of patients 20 patients showed good responses, 7 patients showed fair response and 3 patients showed poor responses.

Dietary incidence:

Diet habit	No of cases	%
Veg	2	6.7
Non-veg	28	93.3
Total	30	100.0

According to the dietary incidence among 30 patients 28 patients (93.3%) were non-vegetarian, remaining 2 patients (6.7%) were vegetarian.

With reference to occupation:

Females are mostly affected in RA than male. Most of them were house wives.

Seasonal reference:

Autoimmune disease prove to have definite seasonal influences. *Uthiravatha suronitham* is basically a vatha disease aggravated by elevation of vatha (vetru nilai valarchi) during koothirkaalam (14 patients – 46.7%) and munpanikaalam (8patients-26.7%) and the symptoms of the disease also aggravated. Remaining 8 patients, 4patients (13.3%0 during

kaarkalam, 1 patient (3.3%) during pinpanikaalam 2 patients (6.7%) during elavenil kaalam, 1 patient during muthuvenil kaalam.

Thinai reference:

Clinical studies revealed that 46.7% of the patients who were treated in the trial were from neithal nilam, 26.7% patients were kurinji nilam, 20% of the patients were from mullai nilam, and 6.7% of the patients from marutha nilam.

The data mentioned here suggests that *Uthiravathasuronitham* is common in neithal nilam .

Distribution with reference to socio economic status:

Out of the 30 patients, 53.3% come from low income group. Malnutrition and lowered resistance which may be the reason. 33.3% came from middle income group and 13.3% came from high income group.

Mode of onset and response:

Mode of onset	No of cases	Drug response		
		Good	Fair	Poor
Acute	2	-	1	1
Sub acute	8	6	1	1
Chronic	20	15	4	1
Total	30	21	6	3

In the chronic patients 50% of the patients showed good response, 13.3% patients showed fair response and remaining 3.3% patient was showed poor response.

In subacute cases 20% cases showed good response, 3.3% showed good response, 3.3% showed fair response and 3.3% showed poor response.

In acute cases 1 patient (3.3%) showed fair response and 1 patient (3.3%) showed poor response.

Muklutram basis:

Affected vatham:

Among 30 cases 4 cases (13.3%) affected with upper respiratory tract infection showed derangement of pranana. 22 patients (73.3%) had constipation showed derangement of abhana. Almost in the cases vihana and samana distorted.

Affected pitham:

Among the types of pitham, 26 patients (86.7%) showed derangement of anama, 2 patients (6.7%) had derangement of prasha, 1 patient (3.3%) had derangement of alosoga. Almost all the cases ranjama (RA factor +ve, ESR↑, CRP+ve, Hb↓) and sathama were affected.

Affected kabham:

Out of the 30 patients, 4 patients (13.3%) affected by tharpaham, (burning sensation of eyes), all the 30 patients (100%) affected by avalambaham and santhiham.

Reference to gunam:

Out of the 30 patients, 25 patients were belong to rajogunam (86.7%) and remaining 4 patients had thamo gunam.

Reference to Pori pulangal:

In *Uthiravathasuronitham*, kai, kaal were affected in all the 30 patients (100%). Mei affected in 24 patients (80%)(swelling and redness in affected joints+)

Reference to ezhu udalkattugal:

Saaram was affected in 93.3% of the patients (tiredness, mental depression) and seneer was affected in 100% of the patients (raised ESR, referred Hb, raised RA factor and CRP) and oon was affected in 93.3% of the patients and kozhuppu was affected in 93.3% of the patients, enbu was affected in 100% of the patients.

Reference to envagai thervugal:

On examination envagai thervugal, Naa was affected in 13.3% of the patients, niram was affected in 40% of the patients, vizhi was affected in

86.7%, sparisam was affected in 93.3% of the patients, malam was affected in 73.3% of the patients, moothiram was affected in 20% of the patients.

Regarding naadi 40% of the patients had vathapitham, 26.7% of the patients had kabhavatham, 6.7% of the patients had pithavatham, 26.7% had vathakabham.

Reference to neerkuri, neikuri:

In neerkuri, the urine of all the 30 patients (100%) were straw coloured (vaikol niram)

In neikuri 90% of the patients had Aravena neelal-snake like spread (vatha neer), 10% had muthothu nitral-pearl like spread(kabha neer).

Reference to sign and symptoms:

100% of the patients had arthritis of 3 or more joints.

93.3% had arthritis of hand joints.

90% of the patients had morning stiffness.

73.3% had anorexia

60% had spindled appearance of fingers.

13.3% of the patients had fever.

6.7% had broadening of the fore foot.

3.3% had rheumatoid nodules.

Patients who had the above mentioned symptoms were treated in the inpatients and outpatient ward with trial drugs. Almost the symptoms were relieved and the patients condition also improved.

Reference to joints involvement:

93.3% of the patients had right MIP joints.

90% of the patients had left MIP joints.

80% had right PIP.

86.7% had left PIP.

60% had right metatarsus.

40% had left metatarsus.

60% had right knee joint.

53.3% had left knee joint.

93.3% right ankle joint.

83.3% left ankle joint.

26.7% right hip.

20% left hip.

80% lumbosacral.

13.3% cervical vertebrae.

20% right shoulder.

26.7% left shoulder.

86.7% right elbow.

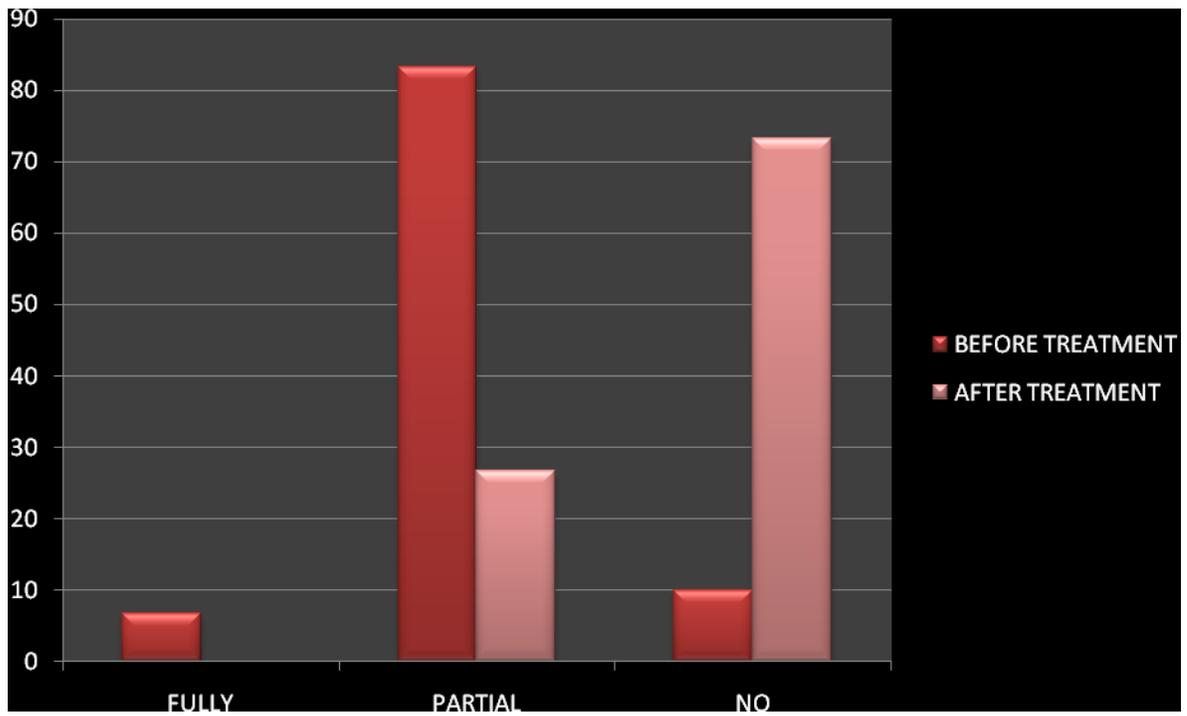
93.3% left elbow.

90% right wrist.

66.7% left wrist.

Changes in restriction of movement in affected joints:

Restriction of joints	No of cases			
	B T	%	A T	%
Fully	2	6.7	-	-
Partial	25	83.3	8	26.7
No	3	10	22	73.3
Total	30	100.0	30	100.0



Changes in functional ability:

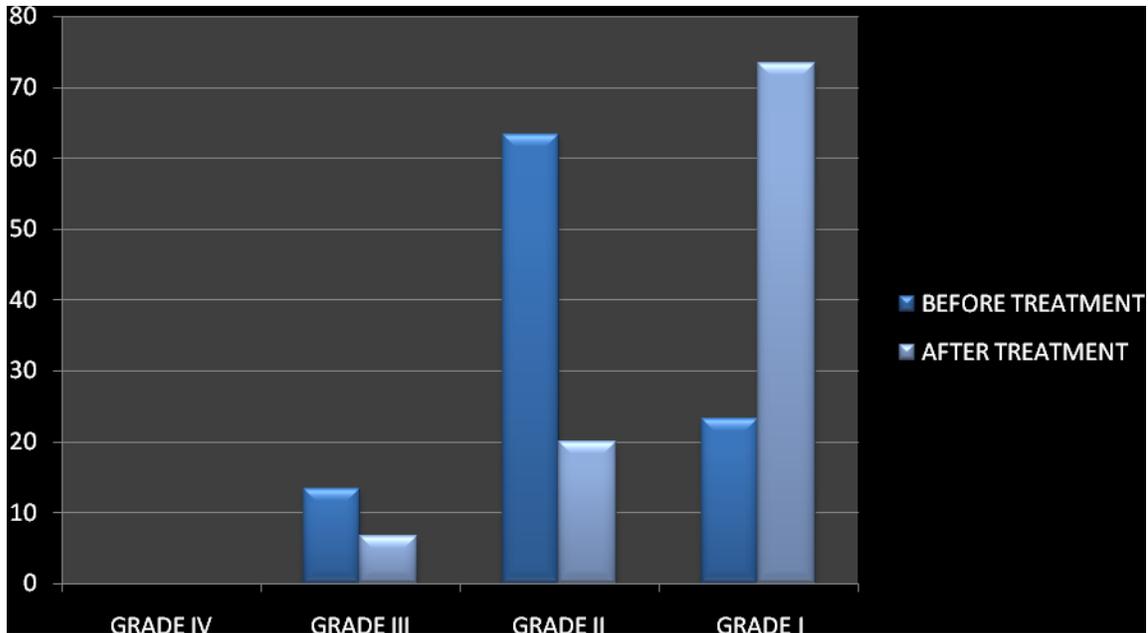
Functional grade	No of patients			
	B T	%	A T	%
Grade IV	-	-	-	-
Grade III	4	13.3	2	6.7
Grade II	19	63.3	6	20.0
Grade I	7	23.3	22	73.3
Total	30	100.0	30	100.0

Before treatment 6.7% of the patients had fully restriction of the some joints after treatment they are possess partially restricted joints.

Before treatment 83.3% of the patients had partially restricted joints after treatment only 26.7% had partially restricted.

Before treatment only 10% of the patients had no restriction of the joints but after treatment 73.3% of the patients had no restriction.

Changes in functional ability:



Among the total number of patients, before treatment 13.3% of the patients belong to grade III after treatment they were reduced their symptoms (6.7%), 63.3% of the patients belongs to grade II then they were reduced their symptoms(20%).

But only 23.3% of the patients grade I after treatment symptoms is relieved 73.3% had grade I.

Mode of action:

Basically siddha medicines have five unique properties. They are suvai (taste), gunam (properties), veeriyam (potency), pirivu (class) and mahimai (action). All the five properties are based on the panchabootham

(five elements) present in the drug. The disease caused when there is alteration in three thathus and seven udal kattugal where five elemental theories plays important role. Bring all the thathus within its normal ranges will be principle theory to cure a disease. The above said five properties will bring all the thathus and kattu to its normal limits.

Since *uthiravathasuronitham* is a vatha disease; *kalakandameganarayanachenduram* has six tastes, heat and cold potency and gets pirivu of the adjuvant.

Chooranam contains chukku, milagu, omam, has kaarpu suvai, heat potency and privu kaarpu.

Murungaipattai kudineer contains murungaipattai as principle drug has kaippu suvai heat potency privu kaarppu.

All the above drugs balance the affected vatha thathu when given internally.

Lahavidamutty thylam contains *Etti* as principle drug for muscle skeletal disorder. Pain reduces; reduce the inflammatory changes of joints posses veekamurukki effect.

The drug can act opurai, ethirurai or kalapurai. Here *Uthiravathasuronitham* appear as a result of vitiated vali affects azhal and iyam. So, the trial drugs balance the affected thathu has taken an ethirurai.

SUMMARY.

SUMMARY

Siddha system of medicine is very popular for treating vatha diseases satisfactorily. *Uthiravathasuronitham* a type of polyarthritis involving phalangeal joints being described by Yugi munivar which is clinically identical with Rheumatoid arthritis of modern clinical entity. The etiologies, pathology, pathogenesis, clinical features, classification, prognosis of the disease were collected from a number of literatures both in siddha system as well as modern system of medicines.

After framing a protocol with criteria and selection proforma, assessment form for 30 patients were admitted to the trial and followed with adequate laboratory assistance. In this study 30 patients from both sexes of age group between 20 years and 45 years were selected and treated in the out patient and in patient ward of Maruthuvam department, Ayothidoss pandithar hospital, National institute of siddha.

Kalakandameganarayana chenduram and *Lahuvidamutty thylam* were studied and observed during the period of the work.

The responses to the above treatment was documented and watch to note the treatment was documented and watch to note the manifestation of any mercurial toxicity on chronic administration.

All the patients responded satisfactorily and none of them showed signs of side effects which has confirmed by the laboratory findings also. Clinically the drugs were free from side effects. The above drugs were subjected to bio-chemical and chemical analysis. The potency of the drugs was studied by biochemical, chemical analysis and pharmacological studies.

Pharmacological study showed, that drug *kalakanda mega narayana chenduram* possess anti-inflammatory, anti-arthritis effect.

Acute toxicity studies of *kalakandameganarayanachenduram* showed Oral administration of *kalakandameganarayanachenduram* did not show any hepatotoxicity or nephrotoxicity in the histological examination, though the urea levels were slightly increased in male rats. *kalakandameganarayanachenduram* is a nonirritant and has a better safety. Good stability and extremely low toxicity of formulation of *kalakandameganarayanachenduram* makes it a favourable.

The drug *lahuvidamutty thylam* posses moderate anti-inflammatory action.

Biochemical analysis of *kalakandameganarayanachenduram* that the presences of calcium, sulphur, chloride, iron, carbonates, unsaturated compounds.

Calcium is essential for growth as it plays an important role in the formation of bone.

The trial contain ferrous iron, it cures the anaemia in *Uthiravathasuronitham*.

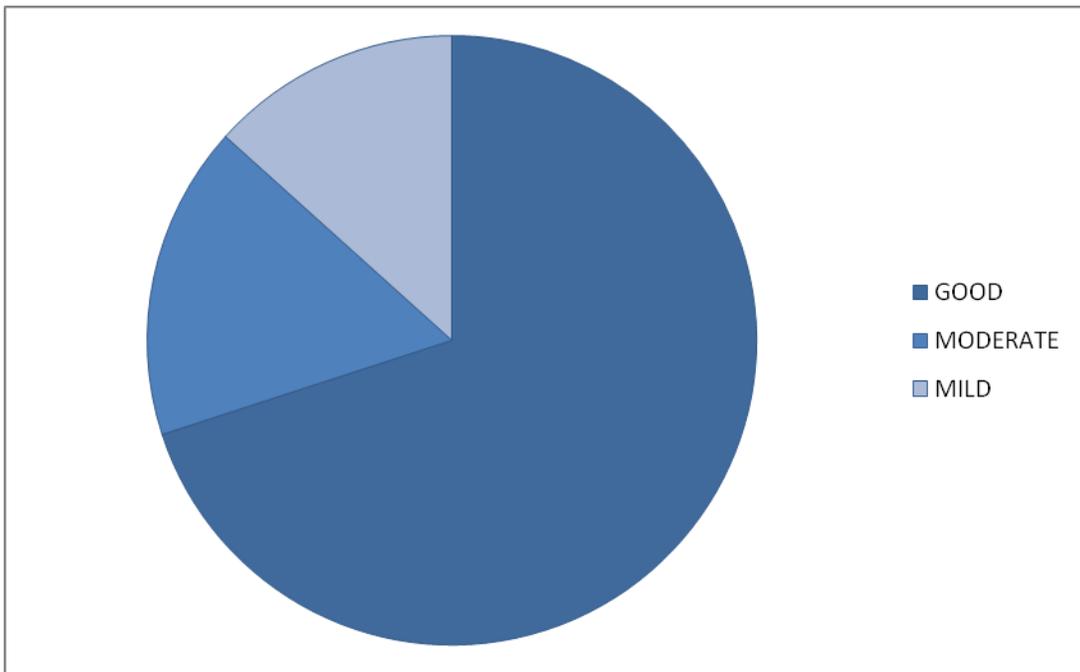
Chloride is required for the chloride shift mechanism and formation of HCL in gastric juice.

Sulphur has the ability to heal and repair damaged tissue, especially in weight bearing joints, and to regenerate healthy tissue. Organic sulphur is a natural alternative to anti-inflammatory and pain relieving drugs.

Calcium carbonate is as a source of calcium, necessary for bones and teeth and to prevent osteoporosis.

By this trial it is confirmed that they could be administered better therapeutic efficacy.

OVERALL RESULTS



CONCLUSION.

CONCLUSION:

From this study I conclude that administration of *kalakandameganarayanachenduram* along with *lahuvidamutty thylam* (external application) gives very good reponse.

Out of 30 patients, 70% showed good improvement, 16.67% showed moderate improvement and 13.33% showed mild improvement.

The drugs are easily available in wide and dosages are also minimal. No adverse effects were produced during the entire course of treatment. So it is concluded that in a developing country like ours the treatment with above said drugs could be a very good medicines for *Uthiravatha suronitham* in the view of efficiency, safety and economy.

ANNEXURES.

KALAKANDAMEGANARAYANACHENDURAM



1.Chenduram

2.Adjuvant

3.Vehicle

LAHUVIDAMUTTY THYLAM



ANNEXURE-I

PREPARATION AND PROPERTIES OF THE TRIAL DRUGS:

KALAKANDA MEGA NARAYANA CHENDURAM

Ref: Theraiyar karisalai – 300

Page no: 42,43,44,45.

Ingredients:

Rasam (mercury) – 45 kazhanju (229.5gm)

Lingam (red sulphide of mercury) – 22.5 kazhanju (112.75gm)

Arithaaram (yellow arsenic trisulphide) – 15 kazhanju (76.5gm)

Kanthagam (sulphur) – 18 kazhanju (91.8gm)

Manosilai (arsenic disulphide or red orpiment) 6 kazhanju (30.6gm)

For Thravagam:

Kariyuppu	}	Each 8 palam (280 grams)
Vediuppu		
Padihaaram		
Kantham		
Kanthagam		
Venkaaram		
Kadalnurai		

Method of preparation:

Purified drugs are powdered separately. All the powders are well mixed and grind them in the stone mortar with above Thravagam Then it is put into a vaaluhayanthiram and it is heated by Aavaaram virahu for one saamam (3hrs) as deebaakini, then it is continued for two saamam (6hrs), finally the above things are burnt for four saamam (12hrs) as kaadakini. Then it is allowed to cool and it is grinded with stone mortar and preserved in glass vessel.

Adjuvant:

Chukku (Zingiber officinalis)	} Equal quantity
Milagu (Pipper nigrum)	
Omam (carum kopticum)	

Method of preparation:

Dried and purified raw drugs were powdered separately and sieved. Then it is mixed well. Preserve in a airtight container.

Vehicle:

10gms of murungai pattai (Moringa oleifera) is crushed well, and then 60ml of water is added to make a decoction.

Dosage:

Chenduram -1\2 panavedai (250mg); Bd

Chooranam -1gm; Bd

Decoction -30ml; Bd

Life span: 75 years

Indications:

Sarvaanga vatham, pakka vatham, thol vatham, eri vatham, uthira vatham, naduku vatham, mudakku vatham, kendai vatham, sarvaanga vatham.

LAHU VIDA MUTTY THYLAM

Ref: Marunthu sei iyalum, kalaiyum

Page no: 162

INGREDIENTS:

Seeds of Etti (strychnos-nux-vomica) – 265 gm

Bark of Ayil (holoptelia-integrifolia) – 160 gm

Garlic (allium sativum) – 350 gm

Goat milk – 500ml

Gingely oil – 12 litres

Method of preparation:

Seeds of etti, bark of ayil, and garlic were grinded with goat milk. Then it was added with gingely oil and boiled under low flame. Until it reaches thylapakkuvam.

Route of administration: external

Indication: Vatha diseases especially uthiravatham

Life span: 1 year.

இரசம் (MERCURY)



- வேறு பெயர் : இனிமை,
சிவன்விந்து,
சூதம்,
ஆதி.
- வகை : 1. இரசம்
2. இரசேந்திரன்
3. சூதம்
4. மிசரகம்
5. பாரதம்.
- சுவை : அறு சுவையும் சிறப்பாய் இனிப்பையும்
உடையது.
- வீரியம் : சீத, வெப்ப வீரியம்.
- பிரிவு : துணைமருந்தின் பரிவையே அடைகிறது.
- செய்கை : உடல் தேற்றி,
உடலுரமாக்கி,
வீக்கமுருக்கி,
மேகநாசனி,

உமிழ் நீர் பெருக்கி,
சிறுநீர் பெருக்கி.

பொது குணம் : “விழிநோய் கிரந்தி குன்மம்மெய்ச்சூலை
புண்குட்டழிகாலில் விந்துவினால் அத்தை
வழியாய புரியுவிதி யாதும் புரிசனோ
யெல்லாம் இரியு விதி யாது மிலை.”

இரசத்தினால் கண்ணோய், கிரந்தி, குன்மம், சூலை, புண், குட்டம், போன்ற
தோற்பிணிகள் வளி நோய்கள் குணமாகும்.

இலிங்கம் (RED SULPHIDE OF MERCURY)



வேறு பெயர் : ஆண்குறி,
கடைவன்னி கர்ப்பம்,
காஞ்சனம்,
செந்தூரம்,
மணிராகம்,
மிலேச்சம்,
வன்னி.

சுவை : வாசனையும் சுவையும் கிடையாது.

செய்கை : உடல் தேற்றி.

குணம் : “பேதிசுரஞ் சன்னி பெருவிரண நீரொடுத
காதகடி காசங் கரப்பான்புண் ணோத
உருவிலிங்க சந்ததமா யூறுகட்டி யுங்போங்

குருவிலிங்க சங்கமத்தைக் கொள்.”

“ஆதியிரத வருக் காதலாற் சாதிலிங்க
மோதி விரதகுண முற்றுடலிற் - நீதுபுரி
குட்டம் கிரந்தி கொடுஞ் சூலை வாதமுத
லுட்டங்கு நோய்களை யோட்டும்.”

இலிங்கம், பேதி, சுரம், சந்நிபாதம், தீராபுண்கள், அதிமூத்திரம், காணாக்கடி வி'ம், காசம், கரப்பான், சிரங்கு, நுணாக்காய்கிரந்தி, கொடுமை செய்கின்ற சூலை, வாத நோய்களை நீக்கும்.

ஆரிதாரம்(YELLOW ARSENIC TRISULPHIDE)



வேறு பெயர் : தாளகம்,
பீதகி,
கால்புத்தி,
பொன்வர்ணி,
மால்தேவி,
மஞ்சள் வர்ணி.

செய்கை : கோழையகற்றி,
சுரமகற்றி,
வாந்தியுண்டாக்கி நச்சரி,
உடல் தேற்றி,
உடலுரமாக்கி.

பொதுகுணம் : “தாளகத்தின் பேருரைக்கத் தாலுகவுள் நோய் குட்டம் நீளக் குளிர்காய்ச்சல் நீடுகபம் - நாளகங்கொள் துஷ்டப் பறங்கிப் புண் சூழுழ கண் மண்டைநோய் கிட்டப் படுபமா கிளத்து.”

தாளகத்தினால் நாக்கு, கபாலம், இவைகளைப் பற்றிய நோய் குட்டம், குளிர் சுரம், கபம், மூத்திர நாளத்தை பற்றிய பறங்கிப் புண், அழுகண், மண்டைநோய் குணமாகும்.

கந்தகம்.(SULPHUR)



வேறு பெயர் : காரிழையின் நாதம்,
செல்விவிந்து,
சக்தி,
சக்தி பீசம்,
செந்தூரத்தாதி,
தேவியுரம்.

சுவை : கைப்பு, துவர்ப்பு

செய்கை : பித்தநீர் பெருக்கி,
மலமிளக்கி,
கிருமிநாசனி,
உடல்தேற்றி, வியாவை பெருக்கி.

குணம் : நெல்லிக்காய் கந்திக்கு நீள்பதினெண் குட்ட மந்தம் வல்லை கவிசை குன்ம வாயு கண்ணோய் பொல்லாவிடிக்கடிவன் மேகநோய் வீறு சுரம் பேதி திடக்கிரகணி கபம் போக்கும்.

பதினெட்டு குட்டம் மந்தம், கல்லீரல் வீக்கம். பெருவயிறு, குன்மவாயு, கொடுமையான விடக்கடிகள் நாட்பட்ட மேகநோய்கள், வாதசுரம் இவைகளை கந்தகம் நீக்கும்

மனோசிலை. (ARESENIC DISULPHIDE OR RED ORPIMENT)



வேறு பெயர் : சிலை,
நான்முகன்,
சரசோதி,
வாணி,
வெள்ளச்சி,
தாமரை வாசனி.

செய்கை : உடல் தேற்றி,
உடலுறமாக்கி,
வெப்பகற்றி.

பொதுகுணம்

.....கொடிய
குஷ்டம் காயச்சல் நடுக்கலஜ கல்லியிரைப் புச்சிலந்திப
பேசறும னோசிலைக்குப் பேச.

மனோசிலையால் சரும குட்டம், நளிச்சுரம், காசம், கபநோய், கண்ணோய், இறைப்பு, சிலந்தி விடம், மூத்திர கிரிச்சுரம் நீங்கும்.

சுக்கு.



Botanical Name	:	Zingiber officinalis
வேறு பெயர்	:	உலர்ந்த இஞ்சி, விடமுடிய அமிர்தம், வேர்கொம்பு,சுண்டி.
பயன்படும் உறுப்பு	:	கிழங்கு (உலர்ந்தது) சுவை – கார்ப்பு, தன்மை வெப்பம், பிரிவு கார்ப்பு.
செய்கை	:	வெப்பமுண்டாக்கி, அகட்டுவாய்வகற்றி, பசித்திதூண்டி.
பொது குணம்		

“சூலைமந்தம் நெஞ்சரிப்பு தோடமேப் பம் மழலை
மூலம் இரைப்பிருமல் மூக்குநீர் - வாலகப
தோடமதி சாரம் தொடர்வாத குண்ம நீர்த்
தோடம் ஆமம் போக்குந் சுக்கு.”

சக்கினால் சூலை மந்தம், நெஞ்சரிச்சல், தோடம், ஏப்பம், மூலம், இரைப்பிருமல், வாதநோய்கள், போகும்.

மிளகு



Botanical Name	:	Piper Nigrum
வேறு பெயர்	:	குறுமிளகு, மலையாளி, சருமபந்தம், கோளகம்.
பயன்படும் உறுப்பு	:	விதை, கொடி
சுவை-கைப்பு, கார்ப்பு, தன்மை- செய்கை	:	வெப்பம், பிரிவு – கார்ப்பு. அகட்டுவாய் வகற்றி முறைவெப்பகற்றி வெப்ப முண்டாக்கி, வீக்கமுண்டாக்கி வாதமடக்கி, நச்சரி.
குணம்	:	

“சீத சுரம் பாண்டு சீலேத்மம் கிராணி குன்மம் வாதம், அருசி பித்தம், மாமூலம் - ஓதுசந்நி யாச்மபஸ் மாரம் அடன் மேகம் காசமிவை நாசங் கறி மிளகினால்.”

அகத்தியர் குணவாகடம்

மிளகு, வளி, அழல். கப குற்றங்கள் இவை அனைத்தையும் நீக்கும் அன்றியும் திமிர்வாதம், கழலை, வளிநோய்கள் இவைகளையும் நீக்கும்.

ஓமம்.



Botanical Name	:	Carum Kopticum
வேறு பெயர்	:	அசமோதம், திப்பியம்
பயன்படும் உறுப்பு	:	விதை
சுவை	:	கார்ப்பு, தன்மை, வெப்பம், பிரிவு, கார்ப்பு.
செய்கை	:	பசித்தீத் தூண்டி, அழுகலாற்றி. இசிவாற்றி, வெப்பமுண்டாக்கி, உமிழ் நீர் பெருக்கி. உரமாக்கி.

பொது குணம் :

“சீத சுரம், காசம், செரியாமந் தம் பெருமல்
பேதியிரைச்சல் கடுப்பு பேராமம் - ஒதியிருமல்
பல்லொரு பல் மூலம் பகமினை நோ யென் செயுமே
சொல்லோடு போம் ஓமமெனச் சொல்.”

ஐயசுரம், இருமல். செரியாமந்தம். பொருமல், கழிச்சல், ஊழி, குடலிரைச்சல், இரைப்பு, குணமாகும்.

முருங்கை

Botanical Name	:	Moringa tinctoria
வேறு பெயர்	:	கிழவி, சோபாஞ்சனம், கிரஞ்சனம்.
பயன்படும் உறுப்பு	:	சமூலம்

சுவை	:	கைப்பு, துவர்ப்பு, இனிப்பு
தன்மை	:	தட்பம்
பிரிவு	:	காய், - இனிப்பு பட்டை - கார்ப்பு
செய்கை	:	இசிவகற்றி, வெப்பமுண்டாக்கி, சிறுநீர் பெருக்கி.

பொது குணம்

“பிஞ்சால் திரிதோடம் பெரும்பூ வால் போகம்
உஞ்சு விழிக் குக்குளிர்ச்சி யுஞ்சேரும் - விஞ்சிலைவென்
பாற்று ந்தோல் நஞ்சறுக்கும் அவ்வேர் வா தச்சினத்தை
யாற்று முருங்கையினது”

சிறிய பிஞ்சால் முக்குற்றம் நீங்கும் பூவாய் ஆண்மையும் வன்மையும்.
கண்ணுக்கு குளிர்ச்சியு முண்டாகும். இலை சுரத்தையும், பட்டை நஞ்சையும்,
வேர் வளிப் பெருக்கையும் நீக்கும்.

எட்டி



Botanical Name	:	Strychnos nux Vomica
வேறு பெயர்	:	காஞ்சிரம். விடமுட்டி
பயன்படும் உறுப்பு மரப்பட்டை.	:	இலை, பழம், விதை,

சுவை	:	விதை கைப்பு
தன்மை	:	வெப்பம்
பிரிவு	:	கார்ப்பு
செய்கை	:	அழுகல் அகற்றி,உரமாக்கி, வெப்பமுண்டாக்கி.

பொது குணம்.

“கைக்கருப்பு சந்நி கடிவிடங்குப் றுதைவலி
எய்க்கவரு தாதுநட்டம் என்பதும் போம் - மைக்கண்ணாய்
கட்டிக் கரப்பான் கனமயக்கு பித்தமுமில்
எட்டிமரச் கொட்டையினாலே.”

எட்டியினால் கைக்கறுப்பு, சந்நி, கடிநஞ்சு, வாதவலி, கரப்பான்,
மயக்கம், மூர்ச்சை போகும்.

பூண்டு.



Botanical Name	:	Allium Sativum
வேறு பெயர்	:	இலசணம், காயம், வெள்ளைப் பூண்டு. வெள்வெங்காயம்
பயன்படும் உறுப்பு	:	கிழங்கு
சுவை	:	கார்ப்பு
தன்மை	:	வெப்பம்
பிரிவு	:	கார்ப்பு

செய்கை : உறமாக்கி. உடல்தேற்றி,
வெப்பமுண்டாக்கி.

பொது குணம்:

“சந்நியோடு வாதம் தலைநோவு தான் வலி
மன்னிவரு நீர்கோவை வன்சீரம் அன்னமே
உள்ளுள்ளி கண்பாய் உளைமூல ரோகமும் போம்
வெள்ளுள்ளி தன்னால் வெகுண்டு.”

சந்நி, வளி நோய்கள், ஐய தலைவலி, வாய் நோய் குணமாகும்.

ஆயில்பட்டை - *Holoptelea integrifolia* (ULMACEAE)



வேறு பெயர் : பூதிகம்
பயன்படும் உறுப்பு : பட்டை
செய்கை : வெப்பகற்றி, முந்தோடமகற்றி

பொது குணம்

“ஆயிலூரியை யடுநீரு நித்திய மெய்
வாயி லூரியையெனி லாவிமிசை யாயில்
வரிசையாக் கற்கு நீர்க் வல்லியட்டுளர் மெய்க்கு
வரிசையாக் கத்தையுறு வை.”

தேரயர் யமக வெண்பா
முக்குற்ற நோய்கள் போகும். தைலங்களில் இப்பட்டை சேரும்.
வலிக்குத்தலால் உண்டான நோய்களை போக்கும்.

ANNEXURES - II

ACUTE TOXICITY STUDIES OF KALAKANDA MEGA NARAYANA CHENDURAM

The present study was aimed at investigating its effects on various haematological, biochemical, histological and physiological parameters during acute toxicity studies.

MATERIALS AND METHODS:

Animals:

Randomly bred adult Wistar male and female rats from animal facility were used. They were housed in poly-propylene cages (6 per cage) with dust free rice husk as bedding material, and were provided with food and water *ad libitum* and rats for various acute toxicity studies. The rats for acute toxicity studies were fasted for 18 h before the experiment.

Formulations:

Kalakandameganarayana chenduram was prepared as a suspension with honey by mixing all the constituents. The percentages of the constituents (by weight) of the formulations (suspensions) are given below. For all acute toxicity studies the formulation was used.

Haematological, biochemical and histological studies:

Three male and three female rats (200 to 250 g body weight) of nine group of animals were given upto the maximum of 4.0g.kg⁻¹ of orally at different dose levels from the beginning of 50mg/kg using a 16 gauge oral feeding needle as per the OECD guidelines-420. An equal number served as control, given orally the vehicle only (8ml.kg⁻¹ honey). Twenty four hours after the oral dosing the animals were lightly anaesthetised with ether and blood was withdrawn from the orbital plexus. They were then killed by cervical dislocation and vital organs were dissected out. Organ to body weight ratio, and various haematological and biochemical variables were studied. Tissues of vital organs *viz.*, lung, liver, kidney, spleen, heart and testes or uterus were fixed in 10% buffered formalin for microscopic examination. Standard procedures were used for the haematological, biochemical and histological parameters.

Statistical analysis:

Means of control and *Kalakandameganarayana chenduram* groups were compared either by Student 't' test or one-way ANOVA followed by Dunnett's test. INSTAT -3 was used for all the statistical analyses. A probability value less than 0.05 were taken as statistically significant.

RESULTS

Haematological, biochemical and histological studies:

Rats administered with 4.0 g.kg⁻¹ orally did not show any toxic signs and symptoms (Table 1). The studies carried out on various clinical parameters and histology did not reveal any toxicity induced changes. 24 hr after oral administration the male rats showed an increase in WBC counts, increase in urea level and changes in the relative weight of lung and liver (Table 2 and 3). There was no significant change in rats administered 50mg/kg to 4.0 g.kg⁻¹ *Kalakandameganarayana chenduram* did not show any significant change compared to the control during the 4 h post administration period.

DISCUSSION

A dose of 4.0 g.kg⁻¹ of *Kalakandameganarayana chenduram* given orally did not alter the haematological, biochemical and histological parameters. A few significant changes observed were also within normal clinical limits. Oral administration of *Kalakandameganarayana chenduram* did not show any hepatotoxicity or nephrotoxicity in the histological examination, though the urea levels were slightly increased in male rats. *Kalakandameganarayana chenduram* is a nonirritant and has a better safety.

Good stability and extremely low toxicity of formulation of *Kalakandameganarayana chenduram* makes it a favourable.

Table-1 Incremental dose finding experiment and its Signs of Toxicity after oral administration of *Kalakandameganarayana chenduram* in rats.

No	Treatment	Dose	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
1.	I	5	+	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	+	-
2	II	10	+	-	-	-	-	+	-	-	-	-	-	-	-	-	-	-	-	-	+	-
3	III	50	+	-	-	-	-	+	+	-	-	-	-	-	-	-	-	-	-	-	+	-
4	IV	100	+	-	-	-	-	+	+	-	-	-	-	-	-	+	-	-	-	-	+	-
5	V	250	+	+	+	-	-	+	+	-	-	-	-	-	-	+	-	-	-	-	+	-
6	VI	500	+	+	+	-	-	+	+	-	-	-	-	+	+	+	-	-	-	-	+	-
7	VII	1000	+	+	+	-	-	+	+	-	-	-	-	+	+	+	-	-	-	-	+	-
8	VIII	2000	+	-	+	-	-	+	+	-	-	+	-	+	+	+	-	+	-	-	+	-
9	IX	4000	+	-	+	-	-	+	+	-	-	+	-	+	+	+	-	+	-	-	+	-

1. Alertness 2. Aggressiveness 3. Pile erection 4. Grooming 5. Gripping 6. Touch Response 7. Increased Motor Activity 8. Tremors 9. Convulsions 10. Muscle Spasm 11. Catatonia 12. Muscle relaxant 13. Hypnosis 14. Analgesia 15. Lacrimation 16. Exophthalmos 17. Diarrhoea 18. Writhing 19. Respiration 20. Number of Deaths (Mortality)

Table 2. Organ to body weight ratio and haematological variables of rats, 24 h after oral administration of 4 g.kg⁻¹ *Kalakandameganarayana chenduram*

Parameters	Male		Female	
	Control	KMNC	Control	KMNC
Lung	0.76 ± 0.05	0.65 ± 0.01*	0.98 ± 0.05	0.79 ± 0.04
Liver	3.28 ± 0.26	4.18 ± 0.21*	3.68 ± 0.36	3.95 ± 0.18
Spleen	0.42 ± 0.03	0.34 ± 0.02	0.47 ± 0.07	0.40 ± 0.03
Kidney	0.63 ± 0.09	0.71 ± 0.02	0.79 ± 0.03	0.72 ± 0.03
Heart	0.36 ± 0.01	0.35 ± 0.02	0.39 ± 0.01	0.36 ± 0.04
Heamoglobin(g%)	13.6 ± 0.3	13.0 ± 0.3	12.3 ± 0.4	12.5 ± 0.1
RBC (10 ⁶ /mm ³)	4.55 ± 0.15	4.38 ± 0.10	4.37 ± 0.12	4.18 ± 0.06
PCV (% Volume)	40.5 ± 0.9	38.8 ± 0.4	36.8 ± 0.5	37.0 ± 0.4
Platelets (10 ⁵ /mm ³)	2.91 ± 0.07	2.68 ± 0.09	2.79 ± 0.04	2.73 ± 0.04
WBC (10 ³ /mm ³)	9125 ± 368	11580 ± 432*	9825 ± 85	9340 ± 172
Polymorphs (%)	58.5 ± 1.3	62.0 ± 3.9	60.5 ± 0.9	60.2 ± 1.5
Lymphocytes (%)	41.0 ± 1.3	37.6 ± 3.7	39.0 ± 0.6	39.2 ± 1.5
Eosinophils (%)	0.5 ± 0.3	0.4 ± 0.2	0.5 ± 0.3	0.6 ± 0.2

Values are mean±SEM (n=5); *P<0.05 significantly different from control.

Table 3.

Biochemical variables of rats, 24 h after oral administration of 4 g.kg⁻¹ *Kalakandameganarayana chenduram*.

Variable	Male		Female	
	Control	KMNC	Control	<i>Kalakandameganarayana chenduram</i>
Glucose (g/dl)	97.1 ± 1.7	93.3 ± 1.2	95.4 ± 2.1	100.2 ± 2.1
Urea (mg/dl)	40.2 ± 1.3	47.5 ± 0.6*	39.4 ± 0.5	38.8 ± 0.8
Cholesterol (mg/dl)	67.4 ± 1.5	65.2 ± 5.9	75.1 ± 1.7	73.9 ± 1.9
Protein (g/dl)	6.99 ± 0.33	6.35 ± 0.10	7.67 ± 0.44	8.10 ± 0.17
Phosphorus (mg/dl)	7.27 ± 0.28	6.23 ± 0.36	5.85 ± 0.44	5.39 ± 0.29
Creatinine (mg/dl)	0.64 ± 0.08	0.53 ± 0.02	0.58 ± 0.05	0.55 ± 0.09
Sodium (meq/L)	133.0 ± 3.6	141.1 ± 1.8*	146.5 ± 3.9	141.5 ± 2.3
Potassium (meq/L)	3.60 ± 0.18	3.70 ± 0.05	3.90 ± 0.29	4.24 ± 0.15
AST (IU/L)	44.5 ± 5.0	49.2 ± 1.5	56.0 ± 2.0	51.6 ± 3.9
ALT (IU/L)	34. ± 1.4	31.4 ± 2.3	33.5 ± 11.5	32.4 ± 3.3
ALP (IU/L)	49.2 ± 17.9	63.6 ± 8.9*	33.0 ± 8.9	41.4 ± 6.1*

Values are mean ± SEM (n = 5); *P<0.05 significantly different from control.

STUDIES ON THE ANTI-INFLAMMATORY AND ANTI-ARTHRITIC
ACTIVITY OF KALAKANDAMEGANARAYANA CHENDURAM IN
RATS

Kalakandameganarayana chenduram was screened for its anti-inflammatory and anti-arthritis activity against carrageenin induced oedema, adjuvant arthritis and other related parameters in albino rats, and compared with hydrocortisone. It showed significant anti-inflammatory activity by all the techniques at the dose levels employed.

*Kalakandameganarayana chenduram in the Indian siddha system of medicine finds extensive use in the treatment of rheumatic pain and inflamed joints in our indigenous medicine. The results presented in this paper deal with the effects of *Kalakandameganarayana chenduram* in different types of experimental inflammation as compared to hydrocortisone.*

EXPERIMENTAL PROCEDURE

Kalakandameganarayana chenduram was suspended in the vehicle, honey to give a concentration of 50mg/ml. Hydrocortisone acetate suspension was diluted with vehicle from initial concentration of 25 mg/ml to 5mg/ml. The control group received only the vehicle.

Rat paw oedema formation

0.05 ml of 1% w/v solution of carrageenin in sterile physiological saline was injected into the plantar surface of right hind paw. The paw volume was measured immediately and again after 3 hr using Plethysmographic apparatus. The animals were pretreated with drugs 1 hr or 4 hr before carrageenin injection. Suspension of *Kalakandameganarayana chenduram* and hydrocortisone were given orally in volume of 1 ml per 100 g body weight followed by tap water to a total of 5 ml per rat to insure uniform hydration, whereas control group was given only vehicle and tap water.

Adjuvant induced Arthritis

The arthritic syndrome was induced by I/D injection of 0.05 ml of a fine suspension of heat killed *Mycobacterium phlei* (strain No. 109) in liquid paraffin (5 mg/ml) into plantar surface of right hind foot. The rats were weighed and drug under test was given orally once daily starting one day prior to injection of adjuvant in to the foot-pad for 14 days. The volume of the injected and uninjected foot was measured daily using Plethysmographic apparatus. Following effects were compared:

1. Weight changes from initial to the 13th day.

2. Severity of secondary lesions-classified as nil, mild, moderate, moderately severe or severe.
3. Mean percentage change in volume of injected foot.

RESULTS AND DISCUSSION

RAT PAW OEDEMA

The results of effect of *Kalakandameganarayana chenduram* and hydrocortisone on carrageenin induced oedema in rat hind paw are summarized in Table 1. To determine the duration of oedematous inhibitory effect of *Kalakandameganarayana chenduram*, carrageenin was injected 1 hr and 4 hr after administration of *Kalakandameganarayana chenduram*. Both the drugs induced a significant inhibition of paw swelling and the effect with *Kalakandameganarayana chenduram* was dose dependent. It was significantly ($p < .025$) active after 4 hr of administration, Effect of orally administered *Kalakandameganarayana chenduram* and hydrocortisone on carrageenin induced oedema in rat paw

Drug	No. of rats	Dose (mg/kg)	Pretreatment time (hr)	Increase in mean paw volume in ml±SE	% inhibition of paw swelling	t	P value
Control	6	Vehic	1	0.585±0.26	---	--	--

		le					
Hydrocartiso	6	25	1	0.208 ±0.04	65.2	4.68	<0.00
ne							1
KMNC	6	400	1	0.375 ±0.04*	35.9	2.56	<0.05
Control	6	Vehic	4	0.558±0.0996	---	--	--
		le					
KMNC	6	400	4	0.263±0.0285*	52.9	2.59	<0.05

ADJUVANT INDUCED ARTHRITIS

The effects of *Kalakandameganarayana chenduram* and hydrocortisone on adjuvant, induced arthritis are summarized in Table 2. In the control, acute inflammation of injected foot. Inflammation occurred during first 4 days reaching the maximum on the 4th day. Thereafter, swelling in injected foot gradually subsided till the 8th day, when it again started swelling. The swelling was also noticed in uninjected hind paw as well as in fore paws on 11th day and inflammatory lesions (secondary lesions) were observed in form of nodules which showed only slight ulceration and in the ear as dilated capillaries. These secondary lesions were graded. During the course of arthritic syndrome, the control rats invariably lost weight.

Table 2: Effect of orally administered *Kalakandameganarayana chenduram* and hydrocortisone on adjuvant induced arthritis in rats.

Drug	No. of rats	Dose (mg/kg)	Initial	Mean % changes in foot volume \pm SE		Mean weight* changes	Secondary lesions
				4 th day	13 th day		
Control	6	---	100	214 \pm 15.2	235 \pm 20	-20 \pm 3.0	Moderately severe
KMNC	6	400	100	147 \pm 6.63 t=3.86 P<0.005	118 \pm 7.73 t=5.1 P<0.001	+12.5 \pm 2.6	Moderate
Hydrocortisone	6	25	100	150.5 \pm 8.7 t=3.68 P<0.005	130 \pm 7.3 t=4.52 P<0.005	-15 \pm 2.6	Moderate

*grams per rat (mean \pm SE)

Kalakandameganarayana chenduram and hydrocortisone significantly inhibited both the primary and secondary phases of adjuvant arthritis. The nature of secondary lesions was moderately severe to moderate by both the drugs. The rats treated with hydro-cortisone lost weight whereas the rats treated with *Kalakandameganarayana chenduram* gained weight on an average. The doses were well tolerated. The results obtained in these

experiments indicate that *Kalakandameganarayana chenduram* exhibits a fairly potent anti-inflammatory activity. Dose-dependent activity has been studied by carrageenin induced rat paw oedema test as it gives a valid quantitative assay and moreover most of the known anti-inflammatory drugs possess anti carrageenin activity. In its oedema inhibiting activity, *Kalakandameganarayana chenduram* exhibits a good dose-response relationship in the dose range used. It is clear from Table I that a single dose of *Kalakandameganarayana chenduram* has good duration of action as it could effectively suppress the inflammation after 4 hr of its administration. *Kalakandameganarayana chenduram* was also found to suppress effectively arthritic syndrome without toxic effect as unlike hydrocortisone treated animals which lost weight, animals treated with *Kalakandameganarayana chenduram* showed gain in weight in arthritic syndrome. It is rather interesting that *Kalakandameganarayana chenduram* seems to be more potent than hydrocortisone in adjuvant induced arthritis syndrome in rats, a close experimental approximation to human rheumatoid arthritis. Thus the use of *Kalakandameganarayana chenduram* in our indigenous system of medicine appears to be justified.

ACUTE ANTI INFLAMMATORY STUDIES ON LAHUVIDA MUTTY THYLAM (EXTERNAL USE):

Procedure:

Acute anti inflammatory activity of *lahu vida mutty thylam* was studied in healthy albino rats weighing between 100-150gms. For studying acute inflammations; rat hind-paw technique was used.

Six albino rats was selected and divided into two groups each containing three rats. To the first group distilled water was given and kept as control. Before the application of the drug the hind paw volume of all rats were measured. This was done by dipping the hind paw up to the tibio-dorsal junction in mercury plethysmography.

Subcutaneous injection of 0.1ml of 1% carroginin (w/v) in water was made into plantar surface of both the hind paw of each rat. To the test group *lahu vida mutty thylam* was topically applied frequently over the inflamed surface in a thin layer. To the controlled group no drug was applied over the inflamed surface. One and half an hour after injection the hind paw volume was measured once again. The different between the initial and final volumes would show the amount of inflammation.

Taking the volume in the control group as 100% of inflammation the inflammation or anti inflammatory effect of the group is calculated.

Tabulation of the results observed.

Group	Dose	Mean difference	% of inflammation	% of inhibition
Control	Water - 2ml	0.85	100	-
Test	L.V.M thylam	0.6	70.6	29.4

Inference:

It is observed that *lahu vida mutty thylam* has moderate anti inflammatory action.

ANNEXURE III

BIO-CHEMICAL ANALYSIS OF **KALAKANDAMEGANARAYANACHENDURAM:**

PHYSICAL PROPERTIES

Loss on drying:

5 Grams of material is heated in a hot oven at 105 °C to constant weight. The percentage of loss of weight was calculated.

Determination of ash value:

Weigh accurately 2-3 g of sample in tarred platinum or silica dish and incinerate at a temperature not exceeding 450 C° until free from carbon, cool and weigh. Calculate the percentage of ash with reference to the air dried drug.

Acid insoluble ash:

Boil the ash for 5 minutes with 25 ml of 1: 1 dilute HCl. Collected the insoluble matter in Gooch – crucible on an ash less filter paper, wash with hot water and ignite, cool in a dessicator and weigh. Calculate the percentage of acid insoluble ash with reference to the air dried drug.

Water soluble ash:

To the Gooch crucible containing the total ash, add 25 ml of water and boil for 5 minutes. Collect the insoluble matter in a sintered glass crucible or on ash less filter paper. Wash with hot water and ignite in a crucible for 15 minutes at a temperature not exceeding 450° C. Subtract the weight of the insoluble matter from the weight of the ash; the difference of weight represents the water soluble ash. Calculate the percentage of water-soluble ash with reference to the air dried drug.

Alkalinity of water-soluble ash:

5 g converted to ash, boiled with water, filtered. Filtrate was titrated against 0.1N of HCl using phenolphthalein as an indicator.

Alkalinity of water soluble ash = $X \times \frac{\text{of acid}}{0.1 \times W}$

X = Titre value.

W = Weight of the material taken.

Alkalinity is given as ml of 0.1N of HCl equated to 1 gm.

pH:

5 gm of Kalakandameganarayanachenduram is weighed accurately and placed in clear 100 ml beaker. Then 50 ml of distilled water is added to it and dissolved well. Wait for 30 minutes and then apply in to meter at standard buffer solution of 4.0, 7.0, and 9.2.

S.No	Parameter	Results (%)
1	Loss of drying @ 105°C	1.67
2	Ash value	37.02
3	Water soluble	15.95
4	Alkalinity as CaCO ₃ in water soluble Ash	1.84
5	Acid insoluble Ash	7.08
6	pH at 10% aqueous solution	9.59

Preparation of the extract:

5 grams of kalakanda mega narayana chenduram is weighed and placed in a 250ml clean beaker. A few drops of aquaregia are added.

Then 50ml of distill water is added and dissolved well. Then it is boiled about 10 minutes. Then cool it and filter it in a 100ml volumetric flask and it is made up to 100 ml with distilled water and this is taken for analysis.

S NO	EXPERIMENT	OBSERVATION	INFERENCE
1	TEST FOR CALCIUM: 2 ml of the above prepared extract is taken in a clean test tube. To this 2ml of 4% ammonium oxalate solution is added.	White precipitate is formed	Presence of calcium
2	TEST FOR SULPHUR: To 2ml of the above prepared extract 5% Barium chloride solution is added.	White precipitate is formed.	Presence of sulphur.

3	TEST FOR CHLORIDE: The extract is treated with silver nitrate solution.	A white precipitate is formed.	Presence of chloride.
4	TEST FOR PHOSPHATE: The extract is treated with ammonium molybdate and concentrated nitric acid.	Yellow precipitation is not formed.	Absence of phosphahate.
5	TEST FOR UNSATURATED COMPOUNDS. Pottasium permanganate solution is added to extract.	It get decolourised	Presence of unsaturated compounds.
6	TEST FOR ALBUMIN: 5ml of extract is added with 5ml of Benedict's reagent	Yellow precipitation is not formed	Absence of albumin.
7	TEST FOR AMINO ACIDS: 2drops of the extract is placed on a filter paper dried well.After drying 1%Ninhydrin is sprayed over the same and dried well.	No violet colour is developed	Absence of aminoacid.
8	TEST FOR STARCH: The extract is treated with weak iodine solution.	No blue colour is formed.	Absence of starch
9	TEST FOR CARBONATES: The extract is treated with concentrated Hydrochloric acid.	No brisk effervescence is formed.	Presence of Carbonate.
10	TEST FOR FERRIC IRON: 1)The extract is treated with glacial acetic acid and potassium ferrocyanide. 2) TEST FOR FERROUS IRON: The extracts are treated with concentrated Nitric acid and then add ammonium thiocyanate solution.	No blue colour is formed. Blood red colour is formed	Absence of ferric iron. Presence of ferrous iron.

ANNEXURE IV:

PCPDFWIN - [PDF # 897103, Wavelength = 1.54060 (A)]																																																																													
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ANNEXURE-VI

STATISTICAL ANALYSIS

Results of Statistical Analysis of Subjective Parameters observed before and After Treatment of 30(n) Patients of *Uthiravathasuronitham*, National Institute of Siddha, Chennai-47, during 2007.

S. no	Parameter	Percentage present			Statistical test criterion	Probability (P) value	Statistical significance of the difference.
		Before R _x	After R _x	Difference R _x			
1	Restriction of movement	90.0	26.7	63.3	$\chi = 19.26$	<0.05	Significant
2	R.A. factor	96.7	20.0	76.7	$\chi = 23.3$	<0.05	Significant
3	CRP	73.3	46.7	26.6	$X^2 = 6.125$	<0.05	Significant
4	Functional ability	76.7	26.7	50.0	$X^2 = 13.07$	<0.05	Significant

Results of Statistical Analysis of Objective Parameters observed before and After Treatment of 30(n) Patients of *Uthiravathasuronitham*, National Institute of Siddha, Chennai-47, during 2007.

S. no	Parameter	Mean			Statistical test criterion	Probability (P) value	Statistical significance of the difference.
		Before R _x	After R _x	Difference R _x			
1	ESR – ½ Hour(mm)	22.8	10.3	12.5	t =6.431	<0.05	Significant
2	ESR – 1 Hour(mm)	46.2	20.9	25.3	t = 6.951	<0.05	Significant
3	Hb (g %)	10.7	11.6	0.9	t = 3.95	<0.05	Significant

BIBLIOGRAPHY.

BIBLIOGRAPHY

SIDDHA TEXTS:

1. “Yugi vaithiya sinthamani”
2. “Siddha maruthuvam” by Dr.Kuppusamy mudaliyar
3. “Siddha maruthuvanga churukkam” – Dr.Uthamarayan
4. “Noi naadal noi mutha naadal thirattu” part 1 and 2
5. “Guna paadam – moolighai vaguppu”
6. “Guna paadam – thadhu, jeeva vaguppu”
7. “Theraiyar karisalai – 300”
8. “Marunthu sei iyalum kalaiyum”
9. “Agasthiyar kanmakandam”
- 10.“Agasthiyar vaithiya kaviyam – 1500”
- 11.“Pathartha guna chinthamani”
- 12.“Athma raksha mirtham”
- 13.“Agni vesarin saragasamhithai” – Indian medicine and homeopathy
directorata Anna hospital
- 14.“Bohar nigandu – 1200” , Thamarai noolagam
- 15.“The wealth of India” – council of scientific and industrial research,
New Delhi
- 16.“Indian herbal pharmacopeia” – Indian drug manufactures association
Mumbai
- 17.Dr.K.M.Nadkarni’s Indian materia medica popular prakashan private
limited Mumbai-34
- 18.T.V.Sambasivam pillai – Tamil – English – dictionary
- 19.Marunthu sei iyalum kalaiyum
- 20.Sirorathina vaithiya pushanam

MODERN TEXTS:

1. "Hutchison's Clinical methods" edited by Michel Swash 2002.
2. "Text book of Medecine – P.C. Das"
3. "Davidson's principles and practice of medicine Christopher haslett, Edwin R chilvers. John A.A. Hunter, 1999 Nicholas A.Boon.
4. "Oxford text book of Rheumatology" David-A-Isenberg 2004.
5. "Clinical Rheumatology" by Ronald W Maskowitz – 1943.
6. "The principles and practice of medicine" by Sir William Osler – 1892.
7. "Text book of orthopedic medicine" – 1982.
8. "Principle of Orthopedic medicine and surgery"by Sam W Wisel, John N Delahay.
9. "Harrison's principles of Intern medicine" – 1977.
10. "Fundamentals of Biochemistry for medical students" by Ambika Shanmugam.
11. "Human Physiology" by Dr.C.Chatterjee.