*A STUDY ON*

# SIRANGU

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# CERTIFICATE

I certify that I have gone through the dissertation submitted by **Dr.M.SARAVANA KUMAR**, student of final M.D(S) Branch – IV Post Graduate Department of KUZHANTHAI MARUTHUVAM, Govt. Siddha Medical College & Hospital, Palayamkottai, and dissertation work has been carried out by the individual only. This dissertation does not represent or reproduce the dissertation submitted and approved earlier.

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# INTRODUCTION

Life is man's most valuable possession and next in order of value is health. Health is the chief basis for the development of the ethical, economical, artistic and spiritual sides of man. The wealth of a country depends not merely on its natural resources but also on the vitality of its people.

The science of medicine is of fundamental importance to man's well being and his survival which might have originated with man and developed gradually as civilization advanced.

From the very ancient days, there were many systems of medicines to cure the diseases. Siddha system of medicine is one among the ancient medical science which is propounded and practiced by eminent spiritual scientists called "Siddhars". They were the man of highly cultured intellectual and spiritual combined with divine aspects.

Medicine is one which prevents physical illness, maintains perfect mental health, saves one individual from further illness and prolongs the longevity. This is quoted by great Siddhar Thirumoolar as,

**"kWg;gJly; Neha; kUe;njdyhFk;**
**kWg;gJs Neha; kUe;njd;rhYk;**
**kWg;gjpdp Neha; thuhjpUf;f**
**kWg;gJ rhitA kUe;njdyhNk"**

The basic emphasis of siddha system is to prevent diseases by careful dieting and proper relaxation of the mind to achieve a totality of health that assures not only longevity but also immortality. It is explained by Thirumoolar in Thirumanthiram as,

**“clk;ghh; mopapy; capuhh; mopth;**
**jplk;gl nka;Qhdk; NruTk; khl;lhh;**
**clk;ig tsh;f;Fk; cghak; mwpe;Nj**
**clk;ig tsh;j;Njd; caph;tsh;j;NjNd”**

Balavagadam is that branch of medical science of Siddhars that deals with the disease of children their essential nature, especially on the functional changes together with planetary influence,morbid diathesis etc and the treatment. In Balavagadam diseases are classified according to the stage of development.

Skin diseases are a common occurrence which amounts for a great deal of misery, suffering, economic loss and mental stress.SIRANGU is one of the serious contagious disease encountered in Pediatric practice in densely populated countries like India. This work attempts to find an effective and economic drug therapy for the disease **Sirangu** through clinical and pharmacological trials.

# AIM AND OBJECTIVES

Though diseases of various systems affect the human race, the most incapacitating disease of all is the disease of the skin, which is considered to be largest organ of the body.

Scabies is worldwide health problem. Prevalence is more in developing countries. It is known that overcrowding, poor socio economic status, illiteracy, lack of personal hygiene in the rural population leads to its higher incidence.

The Prime aim of the present study is to alleviate the sufferings of sirangu patients by administering one of the efficacious medicine said in the siddha literature. The study would involve trial and observation of the action of VASAMBU EANNAI (internal Medicine) and KARUNJEERAGA KALIMBU (External Medicine) for this disease.

**In brief the objectives were,**

- To collect literary evidences in both siddha and modern aspects.
- To establish a correlation with the modern concepts of the disease Sirangu Noi with Scabies regarding etiology, classification, symptoms and the diagnostic methods.
- To obtain an idea of the incidence of Sirangu with reference to age, sex, socio-economic status, habits, family history and seasonal changes.

- To do complete study of Sirangu under the topics of Mukkutram, Udalkattukal, Envagai thervu etc. in order to evaluate the pathology.
- To utilize the possible diagnostic tools in the confirmation of the diagnosis and prognosis of the disease.
- To bring out the efficacy of trial drugs through pharmacological analysis.
- To study the bio-chemical analysis and establish phytochemical standards of the drugs
- To highlight the influence of the factors like nature of land, seasonal changes, personal hygiene and diet over the severity of the diseases.
- To establish awareness among the patients through health education and manage the disease by altering the personal hygienic measures.

# REVIEW OF LITERATURE

## SIDDHA ASPECTS

**Synonyms (NtW ngah;)**

**Sori, Pun**

**Definition (,ay;):**

**Kjypy; mhpg;Gz;lhfp> mt;tplj;jpy; Nth;f;FU Nghy; xd;W my;yJ gy FUf;fs; Njhd;wp mit rpwpa ePh;f; nfhg;Gsq;fshf khWtJk; rpy rkak; rPo;nfhg;Gsq;fshf khWtJkhd ,ay;GilaJ.**

Sirangu is a disease characterized by itching followed by one or more papules, which then change into vesicles and sometimes pustules and are commonly seen in interdigital areas of fingers, wrist, folds of axilla, penis and buttocks etc.

**Aetiology (Neha; tUk; top)**

According to Siddha maruthuvam sirappu, there are two kinds of thoughts.

1. Due to excessive heat of the body the blood is altered to produce sirangu.
2. A type of kirumi causes sirangu.

   Due to excess heat of the body, a type of kirumi penetrates the muscle to produce sirangu and also the excessive heat impures the blood results in pruritis and itching. It is well quoted in the text Guru naadi as.

**‘cl;bzNk mjpfk; tUkpe;jphpa Nghfj;jh**

**Y}DUfpaj;jpNy NtT nfhz;L**

**el;lzkha; nte;jnjhU kr;ir jd;dpy;**

**ehl;lkpl;l fpUkpaJaZFk; NghJ**

**kl;LlNd fpUkpnay;yhk; gwe;jq;Nfwp**

**tifAlNd khq;fp\j;ijj; Jisj;JNkTk;**

**jpl;lKld; tplfug;ghd; gwe;JNkNy**

**jpdTlNd guguj;Jr; nrhwpAz;lhNk”**

**‘tay; jdpNy G+ehfkz;izj;jhNd**

**tUe;jpaJ Gj;Jg;Nghy te;ijahFk;**

**gay;nkhop aPh;Njfj;jpy; fpUkpjhNd**

**gue;JUfp Fl;lk; Nghy; Gs;sp fhZk;**

**kay JTq;fpUkpAe;jhd; ele;J Gf;fpy;**

**NkdpaJ rurnud ntbj;Jg; Gz;zhk;**

**fay; ngUFk;Foy; kltPH; nrhy;yf; NfsPH;**

**fufuj;Jr; nrhwp ngUFq; fug;ghd; jhNd:”**

**- FUehb E}y;**

It is stated that in Siddha maruthuam noi nadal, some types of kirumi are responsible for skin disease like kuttam, sori, sirangu, padai, karappan, hair falling and fever.

**‘fpUkpahy; te;jNjhlk; ngUfTz;L**

**Nfl;fpyjpd; gphptjidf; fpukkhf**

**nghUkptUk; thAnty;yhq; fpUkpahNy**

**GOf;fbNghy; fhZkJ fpUkpahNy.**

**nrUkptUk; gTj;jpuq;fs; fpUkpahNy**

**Njfkjpy; nrhhpf; Fl;lq; fpUkpahNy**

**JUkptUQ; RNuhzpjq; fpUkpahNy**

**R+l;rKld; fphpirg;ghy; njhopy; nra;tPNu”**

**- FUehb E}y;**

## 3. Dietary habits:

Intake of certain foods will produce sirangu. Some of them are,

## Kambu:

Excessive use of kambu will produce sirangu. It is well noted from the verse,

‘fk;G Fsph;r;rpnadf; fhrpdpapw; nrhy;Ythh;fhz;

gk;G nrhwp **rpuq;if** ghypf;Fk; - ntk;Gk;

clypd; nfhjpg;gfw;Wk; cl;gyj;ijAld; lhf;Fk;

mlyapw;fz; khNj awp”

## Cholam:

Excessive use of cholam will produce sirangu. The verse is follows,

‘Nrhsnkdg; Ngh;gilj;j NrhWfsp dhYlypy;

kPsr; nrhwp**rpuq;F** tph;j;jpahFk; - ehSq;

fug;gDKz;lhFq; fdkUe;Jk; ghohk;

gug;guida fz;khNj ghh;”

**Varagu:**

Using varagu in excess will produce sirangu. It is mentioned in the verse as,

‘vhpfgj; NjhNl gyNeh naa;Jk; twl;rp
nrhwp**rpuq;F** gpj;je; njhlUk; - epiwAq;
fufnkdg; G+hpj;j fr;RKiy khNj
tuf hprpr; Nrhw;why; tOj;J” - Nehapy;yh newp

**Kathiri:**

Excessive use of this will produce sirangu. It is mentioned as,

‘fj;jhpf;fha; gpj;jq; fdd;wfge; jPH;j;JtpLk;
njhj;J **nrhwprpuq;ifj**; J}z;b tpLk;” - Fzg;ghlk; %ypif

4. Changes in the external environment like bathing in certain waterbodies produce sirangu. In text, Noi illa Neri,it is stated that Allikulathu Neer Produce sirangu.

‘my;ypf; Fsj;jpdP h;f;ff; fpdpkQ; jg;Ngjp
nky;yr; nrhwp**rpuq;F** ntg;GlNd - njhy;Yyfpy;
jhYjdp yl;ruKk; jhJel;l Kq;nfhLf;Fq;
Nfhy kyh;j;jpU Nt $W.” - Nehapy;yh newp

**Occurence of the periods:**

In Balavadagam, age of the children was divided into various paruvams. They are

| **Duration** | | **Name of the Paruvam** |
|---|---|---|
| 0 – 6 Months | - | Kaappu Paruvam |
| 6 – 12 Months | - | Senkeerai Paruvam |
| 1 – 1½ Years | - | Thaalattu Paruvam |
| 1½ - 2 Years | - | Sappani Paruvam |
| 2 – 2½ Years | - | Mutha Paruvam |
| 2½ - 3 Years | - | Varugai Paruvam |
| 3 – 3½ Years | - | Ambuli Paruvam |
| 3½ - 4 Years | - | Sitril Paruvam |
| 4 – 4½ Years | - | Siruparai Paruvam |
| 4½ - 5 Years | - | Siruther Viduthal Paruvam |

| **For Female Child** | | **Name of the Paruvam** |
|---|---|---|
| 3½ - 4 Years | - | Ammanai Paruvam |
| 4 – 4½ Years | - | Neeraduthal Paruvam |
| 4½ - 5 Years | - | Oonjal Paruvam |
| 1 – 7 Years | - | Paethai Paruvam |
| 8 – 11 Years | - | Pethumbai Paruvam |

| For Male Child | | Name of the Paruvam |
|---|---|---|
| 1 – 5 Years | - | Pillai Paruvam |
| 5 – 11 Years | - | Siru Paruvam |

In addition, diseases are also divided into Karuvil thondrum noigal, Pal unnum paruvathil thondrum noigal, Palum sorum unnum paruvathil thondrum noigal and Soru unnum paruvathil thondrum noigal. Sirangu Noi occurs in all the above Paruvams.

**Classification:**

In siddha maruthuvam sirappu, there are two types of classification. The two types are**>**

**1. Siru Sirangu:**

The lesions are small and the burrows also appear small

**2. Perum sirangu:**

The lesions are larger and the burrows also appear large which may be secondarily infected. This is also called as Yaanai Sirangu.

Another classification shows four types. The four types are,

**1. Adar Sirangu:**

Sirangu occurs densely in clusters.

**2. Ottu sirangu:**

If the sirangu develops by close physical contact, it is called Ottu sirangu.

**3. Kilaitha Sirangu:**

When the lesion develops adjacent to the primary one, it is called Kilaitha sirangu.

**4. Thutta Sirangu:**

It is found in patients with Meha noi and it is very difficult to treat.

Guru Naadi Saathiram - 235 classified sirangu into four types and the names of these types are not mentioned in the text, the verse for this is as follows,

'Gz;zpdpw; rd;dpiae;J nghUe;jpa tho; ePiue;J
fz;zpa ehrpNuhf ehnyhL %d;W nkd;dj;
jpz;zpa thjnkl;LQ; **rpuq;fz** ehyjhFk;
gz;zpa NuhfQ; R+o;e;J ghhpw;Fk; thwjhNk".

- FUehb rhj;jpuk; - 235

Sirangu is classified into 6 types in T.V. Sambasivam pillai dictionary. They are,

1. Aanai Sirangu – Itching with red scaly patches
2. Sori Sirangu – Itching with scales
3. Namuttu Sirangu – Itching with pustules

4. Thotar Sirangu – Confluent itching

5. Perum Sirangu – Itching with wide vesiculation

6. Parangi Sirangu – Syphilitic itch

Pulipani Vaidhyam – 500 classified sirangu into two types. They are,

1. Siru Sirangu
2. Perum Sirangu

The verse for this as follows,

'Neuhf gj;jpae;jh dpr;rh gj;jpak;
epr;rakhiae;J ehNsO ehshk;
rPuhf jiyKOfp tUthahfpy;
**rpWrpuq;Fk; ngUQ;rpuq;Fk**; epy;yhNjhLk;
Nguhf NghfUl flhl;rj;jhNy
NgrpNdd; Gypg;ghzp NgrpNdNd."

- Gypg;ghzp itj;jpak; - 500

**Sites of Occurence (fhzg;gLk; ,lq;fs;):**

According to Pararasa seharam, the commonly affected areas are kai, viral idukkugal, puttam, arai idukkugal, marmasthanam, kongai etc.

**Clincial Features (FwpFzq;fs;)**

Pararasa seharam (Bala Roga Nithanam) describes the clinical features of sirangu as follows.

1. The lesions occur over the webs of fingers, wrist, inguinal region, buttocks etc
2. There is intense itching.
3. The lesions like vesicles filled with fluid.
4. The lesions may also occur over the waist, breast and near the eyes.

The verse for this is as follows,

'rpWtDWq; ifj;jyj;jpw; Gwq;if jd;dpw;
NrWkiw Kjyhd kWjhdj;jpy;
tpWtpnwdr; nrhwpe;J jz;zPh; fl;bg; gpd;G
kpFe;jjpd Tz;lhf;Fk; tpspk;G fpw;wha;
,WFkpil rpWFE}jy; tiu Neh; nfhq;if
apUtpopAk; gapdkiy apfD ey;yha;
fUTjy; NrUQ; **rpuq;fpd**; Fzkpnjd;W
fl;Liug;ghh; kiwAzh;e;j fhl;rpNahNu"

- guuhr Nrfuk; (ghyNuhf epjhdk;)

In the text siddha maruthavam sirappu, the clinical features of sirangu are mentioned as,

1. Itching
2. Vesicles
3. Pus may be formed

4. Lesions commonly occur over the webs of fingers and toes, wrist, folds of axillae, penis, buttocks and inner part and thigh.

**Places (jpiz)**

It is important to know the geographical variation in relation to the disease manifestations, their preventions and curative measures for the ailments. In our system the thinai denotes land, and in each region some ailments are endemic based on the climate. The fertile and infertile land condition can be compared with the well being and the occurence of the disease in a specific area.

It is of five types,

**Kurinchi:**

Hilly regions – Inhabitants of this thinai are prone to fever affecting the blood, enlargement of liver and spleen and increase of kabha.

**Mullai:**

Plain forests and surroundings – shrubs are quiet common in this land. Inhabitants of this thinai are prone to pitha and vatha diseases. Liver enlargement is also common.

**Marutham:**

This is an ideal place for living. All the three dhosas are in proper proportion in this thinai.

Majority of the patients covered in this study were from Marutha nilam.

This deviates from our concept. This may be due to environmental pollution, change of life style, and usage of pesticides etc.

**Neithal:**

The place in and around seashore is called as Neithal. Vatha diseases are quiet common in this land. Inhabitants are also prone to excessive flatulence, enlargement of liver, obesity etc.

**Palai:**

This is not a suitable place for living. Inhabitants of this thinai are prone to vatha, pitha and kabha diseases.

**Seasons (fhyq;fs;)**

In accordance with the position of sun, the year is divided into a cycle of six seasons.

1. Kaar Kaalam - Aavani and Puratasi
2. Koothir Kaalam - Iyppasi and Karthigai
3. Munpani Kaalam - Margazhi and Thai
4. Pinpani kaalam - Masi and Panguni
5. Elavenil Kaalam - Chitirai and Vaigasi
6. Muthuvenil Kaalam - Aani and Aadi

According to climatic condition, normally changes will occur in the land, water, plants and human beings in every season.

With reference to the seasonal changes humours vatham, pitham and kabam also shows variations. This will modify the physiology and make humans susceptible to certain disease.

| Mukkutram | Thannilai Valarchi | Vaetru nilai Valarchi | Thannilai adaithal |
|---|---|---|---|
| Vatham | Muthuvenil kaalam | Kaar kaalam | Koothir kaalam |
| Pitham | Kaar kaalam | Koothir kaalam | Munpani kaalam |
| Kabam | Pinpani kaalam | Elavenil kaalam | Muthuvenil kaalam |

Thus with the help of seasons we can study the periods at which the disease sirangu will aggravate.

In case of sirangu, the prevalence of the disease is in Muthuvenil kaalam due to elevation of vatha by the coding of Theraiyar,

'thjkyhJ Nkdp nflhJ".

**Panchabootha theory:**

The universe is made up of five fundamental principles called **panchaboothams.**

They are,

- Prithivi
- Appu
- Theyu
- Vayu
- Aagayam

**Prithivi:**

Prithivi is represented as the primordial element in the formation of the bone, skin, muscles, hair, blood vessels etc.

**Appu:**

The appu is represented as the blood, cholesterol, urine, seminal fluid and marrow.

**Theyu:**

Theyu is represented as the excessive mental activities, fear, proudness, laziness and sleep.

**Vayu:**

The vayu is represented as walking, general posture, day to day activities, limb movements and body languages.

**Aagayam:**

Aagayam is represented as excessive feeling of one's behaviours like anger, sexual lust, quarrel etc.

**Mukkutra Theory:**

The siddha system of medicine is based on the Thridhosa theory. This include the three humours viz. Vatham, Pitham and kabam. This three humours are essential constitutional factors of the human body and they exist in 1: 1/2: 1/4 ratio respectively in the normal body. This normal existence is responsible for the proper functioning of the body systems. Any alteration in the above ratio can cause diseases.

‘cw;wNjhH clypd; $W

cWg;Gld; tputp epd;W

Kw;WNk Neha;fs; vy;yhk;

Kjpw; ngwj; Njhd;Wk; NghJ

gw;WNk thj gpj;j

rpNyw;gde; jd;dpy; xd;iwAk;

gw;wpNa Njhd;Wk; vd;W

gfHe;jdH KdptH jhNk.”

**- mfj;jpaH FUehb**

## Relation of Panchaboothams and Mukkutram:

| | | |
|---|---|---|
| Vatham | - | Vayu and Aagayam |
| Pitham | - | Theyu |
| Kabam | - | Prithivi and Appu |

## Formation of Suvai by Panchaboothams:

| | | |
|---|---|---|
| Inippu | - | Prithivi + Appu |
| Pulippu | - | Prithivi + Theyu |
| Uppu | - | Appu + Theyu |
| Kaippu | - | Vayu + Aagayam |
| Kaarppu | - | Vayu + Theyu |
| Thuvarppu | - | Prithivi + Vayu |

If there is alteration in Suvai through diet, there will be alteration in mukkutram, which leads to diseases.

**Tridhosas:**

**Vatham:**

Vatham respresents vayu residing in the lower part of the body (i.e) below the level of umbilicus.

Vatham is located in the abanan, face, idakalai, spermatic cord, pelvic bone, skin, joints, nerves, hairs and muscles.

**Classification:**

**Piranan (Uyir Kaal):**

Controls knowledge, mind and five objects of sense. Responsible for breathing and digestion.

**Abanan (Keezh nokku kaal):**

Responsible for passing urine, stools, sperm and menstrual flow. Transfers the digested food to their respective places.

**Uthanan (Mel nokku kaal):**

Transport the digested food to different parts of the gut. Responsible for vomiting, sneezing, cough etc.

**Viyanan (Paravu kaal):**

Spreads all over the body in all nerve endings causing contraction and relaxation. Responsible for movements of all parts of the body.

**Samanan (Nadu Kaal):**

Neutralizes the above four vayus. Aids proper digestion.

**Naagan:**

Responsible for higher intellectual functions like learning, thinking, singing etc., and also for opening and closing of eyelids.

**Koorman:**

Responsible for vision, yawning and lacrimal secretion.

**Kirugaran:**

Produces secretion from mouth and nose. Responsible for appetite, sneezing and cough.

**Devathathan:**

Responsible for laziness, sleep and anger.

**Thananjayan:**

Responsible for swelling of the body after death and it escapes on the third day by bursting the cranium.

In Sirangu, viyanan and samanan are affected.

**Pitham:**

Pitham represents “Theyu” residing in the middle part of the body.

It is located in pirana vayu, pingalai, bladder, moolakkini, heart, umbilical region, stomach, abdomen, sweat, saliva, blood, eyes and skin.

**Classification:**

**Anar Pitham:**

Responsible for proper digestion. Increases the appetite.

**Ranjagam:**

It gives colour to the blood

**Saathagam:**

It controls the entire body function

Responsible for completing the desired activities.

**Aalosagam:**

Responsible for vision

**Prasagam:**

Gives complexion to the skin

In sirangu Prasaga pitham is affected.

**Kabam:**

Kabam represents Appu, Prithivi and is situated in the upper part of the body.

Kabam is located in samana vayu, sperm, head, tongue, uvula, fat, bone marrow, blood, nose, chest, nerves, bones, large intestine, brain, eyes and joints.

**Classification:**

**Avalambagam:**

Responsible for the proper functions of other four types of kabam. Helps in respiration.

**Kilaethagam:**

Makes the food moist and soft to help digestion.

**Pothagam:**

Responsible for identifying taste in the tongue

**Tharpagam:**

Responsible for coolness of the eyes

**Santhigam:**

Responsible for the lubrication and aids free movements of the joints.

**Udal Vanmai:**

Udal Vanmai is classified into three types as follows.

**Iyearkai Vanmai:**

Natural resistance of the body, by birth.

**Seyarkai Vanmai:**

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

**Kaala Vanmai:**

This is the development of immunity according to age, season and environment.

When udal vanmai is affected, Sirangu may occur.

**Udal Kattugal:**

According to Siddha system, body is made up of seven important constituents, called Udal Kattugal. They are necessary for proper functioning of the body. They are

**Saaram:**

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

**Senneer:**

Senneer is responsible for intellectual nourishment, strength and helps in determining the colour and sound of the body.

**Oon:**

Oon gives shape to the body according to the requirement for physical activity.

**Kozhuppu:**

Kozhuppu acts as a lubricant for different organs and helps in their proper function.

**Enbu:**

Enbu supports the body system and is responsible for the posture, movement and structure of the body.

**Moolai:**

Moolai occupies the bony spaces and gives strength to the bone.

**Sukkilam / Suronitham:**

Sukkilam/suronitham is responsible for reproduction.

In sirangu Saaram and Senner are affected.

**Mukkutra Pathology:**

In Siddha system the manifestation of all diseases are the results of derangement of mukkutram due to various aetiological diet, activities, habits etc.

Theraiyar stated in his Noikana mudal karam as,

**‘thjkyhJ Nkdp nflhJ”**

Therefore, in sirangu the principal factor, involves is vatham which accompanies with pitham and kabham produces the clinical symptoms.

Viyanan one of the ten types of vatham spreads over the body responsible for sensation and functioning of this skin. As skin having the function of excretion through sweat, the derangement of viyanan accompanying abanan affect the excretion of viyarvai (Sweat) which results in itching.

As pitham resides in viyarvai its affection deranges the prasaga pitham causing changes in lustre and complexion of skin.

Kabam which resides in senneer (Blood) affected causing hypervitiation. This leads to the formation of pustules and vesicles.

**Diagnosis (Piniyari Muraimai):**

The diagnostic tool adopted to evaluate diseases in siddha medicine is termed as Piniyari muraimai. It is based upon three main principles. They are,

- Poriyalarithal
- Pulanaaltherthal
- Vinaathal

Pori is considered as the five senses of perception namely.

- Nose
- Tongue
- Eye
- Skin
- Ear

Pulan are five objects of senses. They are,

- Smell
- Taste
- Sight
- Sensation
- Sound

Physician's Pori and pulan are used as the tools for examining the Pori, pulan of the patient.

Vinaathal is obtaining the informations regarding the history of the disease, its clinical features etc., from the patient or his immediate relatives who are taking care of him, when the patients is a child or when the patient is not in a position to speak.

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

Siddhars have developed a unique method of diagnosing the disease by Envagai thervugal

**‘ehbg;ghprk; ehepwk; nkhoptpop**

**kyk; %j;jpukpit kUj;JtuhAjk;”.**

- Neha; ehly; Neha; Kjy; ehly;

Hence the following makes the diagnosis,

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

**Naadi:**

The three ‘Uyir thathukkal’ are formed by the combination of three Naadi with three Vayu.

| | | | |
|---|---|---|---|
| Idakalai | + Abanan | - | Vatham |
| Pingalai | + Piranan | - | Pitham |

Suzhumunai + Samanan - Kabam

Naadi can be felt one inch below the wrist on the radial side by means of palpation with tips of index, middle and ring fingers. The verse is as follows,

**‘fhpKfdbia tho;j;jpf; ifjdpy; ehb ghHf;fpy;**
**ngUtpuyq; Fyj;jpy; gpbj;jb eLNt njhl;lhy;**
**xU tpuNyhby; thjKaH eLtpuypw; gpj;jk;**
**jpUtpuy; %d;wpNyhby; Nrj;Jk ehbjhNd’**

**- Neha; ehly; Kjy; ghfk;**

But it is stated in sathaga Nadi that the correct Naadi for children cannot be felt.

The verse is as follows,

**‘nfhz;blNt faNuhfp fhrNuhfp**
**Fwpg;ghf rpw;wpd;gk; nra;j NgHfs;**
**mz;blNt jhpj;jpuHfs; tpUj;jH ghyH**
**md;ghfj; jz;zPhpy; %o;fpNdhHfs;**
**nfhz;blNt ,tHfsJ cWg;gpd; jhJ**
**$wNt KbahJ vtHf;Ff; ,l;Lk;**
**gz;blNt apg;ghPl;ir ahHjhd; fhz;ghH**
**guhguj;jpd; kfpikapJ ghUghNu”**

**- Neha; ehly; Kjy; ghfk;.**

So Naadi does not play a vital role in the diagnosis of sirangu in children.

**Sparisam:**

This reveals about the warmth, chillness, dry, weeping, soft, rough, tenderness, fissures, pigmentation and changes in the skin.

In sirangu, thinavu, kurukkal etc., can be noticed at the affected areas.

**Naa:**

The colour, salivation, ulceration, coating, movements, taste etc., is noted for diagnosis.

**Niram:**

Colour of the skin is noted for diagnosis. In sirangu, the affected site becomes brownish than the remaining normal site.

**Mozhi:**

Indicates the speech of the patient.

**Vizhi:**

The eye is noted for colour, lacrimation, and irritation.

**Malam:**

Quantity, colour, odour, froth, abnormal consistency including indigestion, frequency, constipation etc., should be noted for diagnosis.

**Moothiram:**

Neerkuri and Neikuri are done to help diagnosis.

**Neerkuri:**

| | | |
|---|---|---|
| Niram | - | Colour of the urine |
| Edai | - | Specific gravity of urine |
| Manam | - | Smell of urine |
| Nurai | - | Frothy nature of urine |
| Enjal | - | Quantity of urine |

**Neikuri:**

Prior to the day of urine examination for Neikuri, the patient is advised to take a balanced diet and the quantity of food must be proportionate to his appetite. The patient must have a good sleep.

**‘mUe;JkhwpujKk; mtpNuhjkjha;**
**m/fy; myHjy; mfhyT+z; jtpHe;jow;**
**Fw;wstUe;jp cwq;fp itfiw**
**Mbf;fyrj; jhtpNa fhJ nga;**
**njhUK$Hj;jf; fiyf;Fl;gL ePhpd;**
**epwf;Fwp nea;f;Fwp epUkpj;jy; flNd.”**

**- Neha; ehly; Kjy; ghfk;**

Next day the urine is collected in a glass container in the early morning. This specimen should be examined within one and half hours.

A drop of gingelly oil is dropped on the surface of urine collected as above and the spreading of the oil should be observed. The verse is as follows.

**’epwf;Fwpf; Fiuj;j epUkhd ePhpw;**

**rpwf;f ntz;nza;NahH rpWJsp eLtpLj;**

**njd;Wwj; jpwe;njhyp Nafhjike;jjp**

**dpd;wjptiy Nghk; newptpopawpTk;**

**nrd;wJ GfYQ; nra;jpia AzNu”.**

**- Neha; ehly; Kjy; ghfk;**

**Vatha neer:**

**‘muntd ePz;bd/Nj thjk;”**

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

**Pitha neer:**

**‘Mop Nghy; gutpd; m/Nj gpj;jk;”**

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

**Kapha neer:**

**‘Kj;njhj;J epw;fpd; nkhoptnjd; fgNk”**

When the drop of oil remains as a pearl it indicates kaba neer.

**Thontha neer:**

When the drop of oil shows two shapes enclosed with in one another it indicates thontha neer.

**Mukkutra neer:**

When the drop of oil drowns into the urine it indicates mukkutra neer.

In majority of the cases the oil spreads like a pearl. In some cases oil spreads like serpent.

Besides Envagai thervugal, Uyir thathukkal, Ezhu Udal kattugal, Paruvakalangal, Thinaigal also helps in making diagnosis.

**Complications:**

Pararasa seharam says that sirangu, if untreated can cause Mahothara karappan. The features are,

- Itching gets reduced.
- Odema of the body
- Oliguria
- Impaired defecation
- Hoarsenes of voice
- Dyspnoea
- Loss of appetite
- Polydypsia
- These symptoms get exaggerated during night.

The verse is as follows,

‘**rpuq;fpd**; kNfhjuf; fug;ghd; nrAq; Fze;jhd;
wpdtlq;fp tPq;fp ky ryKk; tw;wp
cuk;gapY Kjh KwTw; Kl;lhfp
Athjp kpFe;jhp Fuyha; kplWk; tpf;fp
tuk;gapW %r;R kpF Rthj Kz;lha;
thA kpFe;J}z; kwe;J jhfkpQ;rp
,uq;FwNt fis Nrhf kpFjpAz;lh
apuhf; fhyj; jjpfhpf;F kpak;Gq; fhNy.”

- guuhr Nrfuk;

Although sirangu is easily manageable it may become complicated. This is mentioned as one of the kutramulla viyathigal in the Ankathi patham. The verse is as follows.

‘%yKW fpue;jpAld; %yNuhf
Kjphpypq;fg; Gw;WlNd apypq;f #iy
#iy KW ePuopT fghy tPr;Rf;
nrhy;yW kNfhju fug;ghd; fhaNrw;gg;
rPyKW Ks;SWf;fp Ayw;W #iy
**rpuq;fpd;** Ke;jpkpHthj rd;dp fhrk;
Nfhy KW ntz;Fl;lk; nts;SNuhfq;
nfhba nfHg;g Nuhf Kjypuj;j Fd;kk;”.

**-** mq;fhjp ghjk;

**Differential diagnosis:**

Sirangu must be differentiated from Varal karappan and Ari karappan.

**Varal karappan:**

Balavagadam describes Varal karappan as one of the eighteen types of karappan.

The symptoms are sirangu like lesions all over the body, oozing of fluid, itching and insomnia.

‘cr;rpKj Ys;sq;fh Yw;wstp nyt;tplKk;
er;Rr; **rpWrpuq;F** ez;zpNa - epr;ry;
ntbj;JePH NkTeik Nkth Jwf;fk;
fbe;jtul; rpf;fug;ghd; fhz;”.

- ghythflk;

Unlike sirangu there are lesions all over the body. There is no severe disturbance of sleep in sirangu, whereas the sleep is disturbed in Varal karappan.

**Ari karappan:**

The initial lesions occur over the penis and vulva. It ulcerates further and eventually erodes the adjoining tissues, which becomes puttru (malignancy).

The verse for this is as follows.

**‘cw;w mhpfug;ghd; Xjf;Nfs; xz;nlhbaPH**
**kw;wypq;f Nahdpfspy; te;jpLk; Gw;Wlypy;**
**Mwhkw; Gz;zhpf;Fk; cUtopf;Fk;**
**khwhJ ,f;Fzj;jpd; thW”.**

**- ghythflk;**

Only resembling feature is the early sirangu like lesions over the penis or vulva. All other features are distinguished from sirangu.

# MODERN ASPECT

## ANATOMY

**The Skin:**

The skin or integument covers the body and is continuous with the membranes lining the body orifices. The skin has a surface area of about 1.5 to 2cm$^2$ in adults and it contains glands, hair and nails.

It consists of a layer of dense connective tissue the dermis and an external covering of epithelium termed the epidermis or cuticle.

Between the skin and underlying structures there is a layer of subcutaneous fat.

**Development:**

The epidermis and its appendages are derived from the ectoderm, the dermis is of mesodermal orgin.

About the fifth week of fetal development, the epidermis is formed with two layers and the papillae of true skin about the sixth month.

The nails are formed at the third month and begin to project about the sixth month.

The hairs appear between the third and fourth months. About the fifth month the fetal hairs (Lanugo) appear first on the head and then on the other parts. They drop after birth and give place to permanent hairs.

All the sweat glands are fully formed at birth, they begin to develop as early as the fourth month.

## STRUCTURE

### Epidermis (Cuticle, Scarf Skin)

It is the most superficial layer and is composed of stratified epithelium which varies in thickness in different parts of the body. The average thickness of the skin is about 1 to 2mm. It is thickest on the palms of the hands and soles of the feet. There are no blood vessels or nerve endings in the epidermis but its deeper layers are bathed in interstitial fluid from the dermis.

The surface of the epidermis is ridged by projections of cells in the dermis called the papillae. The pattern of ridges is different in every individual and the impression made by them is the finger print.

The stratified squamous epithelium of the epidermis is composed of several layers named according to various properties such as shape of cells, texture, composition and position.

**Beginning with the deepest, they are**

1. Stratum Basale
2. Stratum Spinosum
3. Stratum Granulosum
4. Stration Lucidum
5. Stratum Corneum

**Stratum basale:**

[Stratum Cyclindrium, Stratum Germinativum]

It is composed of columnar or cylindrical cells. The ends of the cells are in contact with basement membrane and appear to anchor the cells to the underlying dermis. The cells undergo divisions by mitosis supplying new cells and the dead cells which are constantly being rubbed off and replaced by kertain.

**Stratum Spinosum:**

It is composed of several layers of polygonal cells depending upon the area of the body. The cells in this layer adhere to its neighbours at particular points called desmosomes and these points are drawn into the spines by shrinkage.

**Stratum granulosum:**

Composed of two to three rows of flat cells that lie parallel with the surface. They are composed of keratohyalin, a substance that apparently is transformed into keratin.

**Stratum Lucidum:**

It appears to be a homogenous translucent band much thinner than other stratum. The cells in this layer contain droplets of eleidin.

**Stratum corneum:**

It is composed of squamous plate of scales fused together to make the outer horny layer. These plates are the remains of the cells and contain a fibrous protein keratin.

**Pigmentation:**

The colour of the skin is due to the presence of pigment in the cells of the epidermis. The pigment is especially distinct in the cells of stratum basale.

Melanin, a dark pigment secreted by melanocytes in the deep germinative layer, is absorbed by surrounding epithelial cells. The amount varies between different races and between members of the same race. Melanin protects the skin from the harmful effects of sunlight.

**Dermis: (Corium, Cutis Vera)**

The dermis is tough, flexible and elastic. It is very thick in the palms of the hands and soles of the feet. In the eyelids, scrotum and penis it is exceedingly thin and delicate.

The dermis consists of felted connective tissue, composed of collagen with a varying amount of elastic fibres and numerous blood vessels, lymphatics and nerves. The collagen fibres bind water and give skin its tensile strength. The connective tissue is arranged in two layers – a deeper or reticular layer and superficial or papillary layer.

**Blood Vessels:**

Arterioles form a fine network with capillary branches supplying sweat glands, sebaceous glands, hair follicles and the dermis. The epidermis has no blood supply. It obtains nutrition and oxygen from blood vessels in the papillae of the dermis.

**Lymphatic Vessels:**

It form two networks, superficial and deep, which communicate with each other and with those of the subcutaneous tissue by oblique branches.

**Nerve endings:**

Nerve impulses generated in the nerve endings are conveyed to the spinal cord by sensory (somatic cuteneous) nerves, then to the sensory area of the cerebrum where the sensations are perceived.

**GLANDS OF THE SKIN**

**Sebaceous Glands:**

The glands are small, sacculated, glandular organs lodged in the substance of the dermis. They are most numerous in the skin of the scalp, face, axillae and groins. The glands pour their oily secretion sebum into the hair follicles. In some areas face, lips, nipple, glans penis and labia minora these glands open directly into the exterior.

Sebum contains free fatty acids, triglycerides, squalene, sterols, waxes and paraffin. It has antibacterial and antifungal actions and it keeps the skin smooth and oily.

**Sweat glands (Sudoriferous glands)**

3-4 Million sudoriferous glands release their secretions by exocytosis and empty them on to the skin surface through pores or into

the hair follicles. They are divided into two main types, as eccrine and apocrine based on their structure, location and type of secretion.

**Eccrine Sweat Glands:**

The eccrine gland is a tubular, coiled formed by single layer of cuboidal or columnar cells. They are distributed throughout the body. They secrete a clear watery sweat which is increased during emotional conditions and in higher temperature. Sweat contains water, sodium chloride, urea and lactic acid. Their main function is regulating body temperature.

**Apocrine Sweat Glands:**

Apocrine glands are situated only in limited areas like axilla, pubis, areola and umbilicus. They have the same structure as eccrine glands. These glands start functioning only at the time of puberty. The sweat is thick, milky and odorless. When microorganism grows in this secretion, it develops a characteristic odour. It is increased only in emotional condition.

Glands of eyelids, glands of external auditory and mammary glands are the modified apocrine glands.

## APPENDAGES OF THE SKIN

### Hairs:

These are formed by a down growth of epidermal cells into the dermis or subcutaneous tissue called hair follicles. At the base of the follicle there is cluster of cells called the bulb. The hair is formed by the multiplication of cells of the bulb and when the cells die, become keratinized. The part of the hair above the skin is the shaft and the remainder, the root.

The colour of the hair is genetically determined and depends on the amount of melanin present.

### Arrectores Pilorum:

These are little bundles of involuntary muscle fibres attached to the hair follicles. Contraction makes the hair stand erect and raises the skin around the hair causing goose flesh. These muscles are activated in response to fear and cold.

### Nails:

The nails are derived from the same cells as epidermis and hair and consist of a hard horny type of keratinized dead cell. They protect the tips of the fingers and toes.

The root of the nail is embedded in the skin, covered by the cuticle, and forms the hemispherical pale area called the lunula.

The body of the nail is exposed part which has emerged from the germinative zone called the nail bed.

Finger nails grow more quickly than toe nails and growth is quicker when the environmental temperature is high.

# PHYSIOLOGY OF SKIN

**The Functions of the Skin are**

1. Protective function
2. Role as a sense organ
3. Storage function
4. Synthesis of Vitamin –D
5. Regulation of body temperature
6. Regulation of water balance.
7. Excretory function
8. Absorptive function
9. Secretary function.

**1. Protective Function:**

Skin forms the covering of all the organs of the body and protects the organs from,

a) Bacteria and toxic substances – The keratinized stratum corneum is responsible for the protection. It offers resistance to the skin against toxic chemicals like acids and alkalis. The sebaceous glands secreting oily sebum contain bactericidal chemicals that kill the surface bacteria.

b) Protection from mechanical blow-The Skin is not tightly placed over the underlying organs. It becomes loose and moves over the tissues in response to any blow.

c) The pigment melanin absorbs ultraviolet rays of sunlight.

**2. Role as a Sense Organ:**

Skin is the largest sense organ in the body. Cutaneous receptors are stimulated by the sensations of touch, pain, pressure and temperature and convey them to the brain through the afferent nerves.

**3. Storage**

Skin can store fat, water, chloride and sugar. It can also store blood by the dilation of the blood vessels.

**4. Synthesis of Vitamin – D.**

Vitamin $D_3$ is synthesized in the skin by the action of ultraviolet rays on cholesterol. Vitamin D is essential for skeletal development.

**5. Regulation of Body Temperature:**

Excessive heat is lost from body through skin by radiation, conduction, convection and evaporation. Sweat glands in the skin take active part in heat loss by secreting sweat. The lipid content of sebum prevents loss of heat from the body in cold environment.

**6. Regulation of Water Balance:**

Skin regulates water balance and electrolyte balance by excerting water and salts through sweat.

**7. Excretory function:**

Skin can excrete small quantities of waste materials like urea, salts and fatty substance through sweat. About 400 ml of water evaporates through skin daily.

**8. Absorptive Function:**

The absorption of water soluble substances through skin is negligible. But certain fat soluble substances like fat soluble vitamins (A,D,E and K) Oxygen, carbon dioxide gases and ointments, toxic materials, organic solvents like acetone, carbon tetrachloride, salts of heavy metals can also be absorbed.

**9. Secretory Function:**

Skin secretes sweat through sweat glands and sebum through sebaceous glands. By secreting sweat, skin regulates body temperature and water balance. Sebum keeps the skin smooth and moist.

# SCABIES

**Definition:**

Scabies is an intensely pruritic skin infestation caused by the host specific mite, Sarcoptes scabiei var hominis, an obligate human parasite. (Sar, koptein means to smite or cut) (Scabere means to scratch).

**Etiology and epidemiology:**

Scabies affects persons of all ages, races and socio-economic groups.

Over crowding, poverty, poor hygiene and poor public education, delayed diagnosis and treatment contribute to their prevalence. Incidences are higher in children than others. Persons with poor sensory perception due to conditions like leprosy, and immuno compromised persons due to conditions such as status post transplantation, HIV disease and old age all at particular risk for the crusted scabies.

**Mode of Transmission:**

The efficient means of transmission of scabies is via direct and prolonged physical contact with an infected individual. Mites can survive several days away from human skin, so fomites present in infested bedding or clothing are an alternate source of transmission.

**Parasitology:**

| | | |
|---|---|---|
| Class | - | Arachnida |
| Subclass | - | Acari |
| Order | - | Astigmata |
| Family | - | Sarcoptidae |
| Name | - | Sarcoptes scabiei var hominis. |

**Characters of Sarcoptes Scabiei:**

The adult female has a hemispherical body marked by transverse corrugations, brown spines and bristles on the dorsal surface. The male mite is similar in configuration but smaller.

The female measures 0.4mm in length and the male mite are approximately one half of her size.

The mite has four sets of legs. The anterior 2 pairs end as elongated peduncles tipped with small suckers.

**Lifecycle:**

Acarus scabiei undergoes its lifecycle on the skin surface. The male mite has a short life span. It dies shortly after copulation. The adult female, after impregnation, burrows into the skin and forms a tunnel in the horny layer (Stratum Corneum).

The mite burrows at the rate of 1-5mm per day. Two days after fertilization, she starts laying eggs along her course in the burrow at the rate of 2-3 eggs during her life span of 30 days.

The female mite exudes a keratolytic substance and burrows into the stratum corneum. The tract is extended by 0.5-5mm/24 hour within stratum granulosum and she deposits 1-3 oval eggs and numerous brown fecal pellets (Scybala) daily.

The egg hatches in 3-4 days producing a larva that moves to the skin surface. It then molts through various stages of oclopod nymph into an adult mite. The entire life cycle can be completed in 10 to 14 days.

The average number of adult female mites on an individual suffering from scabies is usually less than 100. Only in crusted scabies there are large numbers of mites present.

**Pathogenesis:**

The mites move through the top layers of skin by secreting proteases that degrade the stratum corneum.They feed on dissolved tissue but do not ingest blood. Scybala (faeces) are left behind as they travel through the epidermis creating linear lesions clinically recognized as burrows.

**Histological Findings:**

The histologic features revealed by the excision of a burrow shows mites, larvae, ova and faeces within the stratum corneum. Superficial and deep dermal infiltrate show lymphocytes, histiocytes, mast cells and eosinophils. Spongiosis and vesicle formation with exocytosis of eosinophils and occasional neutrophils are present.

Crusted scabies demonstrates massive hyperkeratosis of the stratum corneum with innumerable mites.

Nodular scabies reveals a dense, mixed superficial and deep dermal inflammatory cell infiltrate.

**Immunology:**

Allergic sensitivity to the mite or its products appears to play an important role in determining the development of lesions other than burrows and in producing pruritis.

Immunological reactions mediated by antibodies of IgG, IgM and especially IgE classes may be involved. None of these reactions may have been shown to eliminate all mites but locally these reactions may prevent the epidemic multiplication of scabies organism.

**Clinical Features:**

Clinical findings include both primary and secondary lesions. Primary lesions are the first manifestation of the infestation and these include,

1. Itching.
2. Burrows
3. Papules and Vesicles
4. Nodules

**Itching:**

Itching is the primary symptom of scabies and it may be due to type IV hypersensitivity to the mite or its products. Usually itching appears after 4-6 weeks of initial infection, due to development of sensitization to the mite or its products (Scabin in saliva) which takes much time.

Itching is characteristically worse at night. This nocturnal periodicity is usually due to the movement of the young acarus to reach the pores favoured by the warmth of the bed. And also the mast cell degranulation at night may be another reason for itching worsened at night.

**Burrows:**

Burrows represent the intra epidermal tunnel created by the moving female mite. They appear as serpiginous, greyish thread like elevations ranging from 2-10mm long. The distribution of lesions is characteristic include flexor aspects of interdigital spaces of the finger, wrists, elbows, axillae, belt line, dorsal feet, buttocks, scrotum in men and nipple area in women. In infants burrows are commonly located on the palms and soles.

**Papules and Vesicles:**

Erythematous, papules and vesicles 1-3mm sized are seen in typical distribution. The vesicles are discrete lesions filled with clear fluid. Papules are common on the shaft of the penis in men and on the areolae in women and they rarely contain mites.

**3. Nodules (Nodular Scabies):**

Common in young children. They are pinkish brown or red nodules ranging from 2-20mm, eczematous eruption primarily seen on the trunk. The nodules may develop due to deeper penetration by the acarus or a severe dermal reaction to the toxins of the acarus.

**Secondary Lesions:**

These are the result of scratching, secondary infection and the host immune response against the mites.

Other findings include excoriations, widespread eczema, honey-colored crusting, post-inflammatory hyper pigmentation, erythroderma, prurigo nodules and frank pyoderma.

**Crusted scabies (Norwegian Scabies):**

It manifests with marked thickening and crusting of the skin in which the mite population is enormous. Lesions are often hyperkeratosis, crusted and cover large areas. Nail dystrophy and scalp lesions may be prominent. Predominantly affected persons are those with immunosuppresion, elderly and bedridden patients.

**Scabies in Infants:**

In infants the features differ from that of older children and adults. Bullae and pustules are more common and the palms, soles, face and scalp are often affected. Eruptions may also include wheals, papules and vesicles and superimposed eczematous dermatitis.

**Diagnosis:**

It is based on the following

- History of nocturnal itching
- History of exposure or multiple cases in the family
- The characteristic lesions distributed at the sites of predilection and the identifiable typical burrows.
- Light microscopic identification of mites, larvae, ova or scybala from the burrow.
- Skin scrapping

  Application of a drop of mineral oil on the selection site, scrapping of it with No.15 blade and transfer them on the glass slide, covered with coverslip and examined under microscope 40 × magnifications.
- Clinically inapparent infection can be detected by amplification of sarcoptes DNA in epidermal scale by polymerase chain reaction.

**Differential diagnosis:**

Scabies is often confused with other papulo vesicular lesion like papular utricaria, Canine scabies, dermatitis herpetiformis, folliculitis, and eczematous diseases.

Nodular scabies is misdiagnosed as utricaria pigmentosa and histiocytosis.

**1. Canine Scabies:**

The distribution of lesions is different but not transmitted between humans.

**2. Eczematous disease:**

Eczematous lesions may mimic atopic dermatitis. Usually there is a history of eczema in the patient or the family.

**3. Dermatitis herpetiformis:**

Similar in distribution but the vesicles and utricarial lesions are more prominent.

**4. Pediculosis:**

It is also caused by a parasite and is excluded by the presence of lice and nits.

**Complication:**

Complications of scabies generally result from vigorous rubbing and scratching. Disruption of the lesion makes the patient at risk for secondary bacterial invasion chiefly by streptococcus pyogenes and staphylococcus. Super infection with S. Pyogenes can precipitate acute post streptococcal glomerulonephritis. Common pyodermas include impetigo and cellulitis which may rarely result in sepsis.

**Acute post streptococcal Glomerulonephritis:**

It is more common is tropical climates. Immune mechanism is responsible for nephritis and the pathologic changes are confined to the glomeruli. The symptoms are dark coloured urine, peri-orbital odema, oliguria, general malaise, low grade fever and acute hypertension.

**Impetigo:**

This superficial pyoderma is due to groupA β-haemolytic streptococci. It develops as vesicular lesions on the arms and legs or around mouth, nose and scalp which becomes pustules. Lymphangitis and regional lymphadenitis are also seen.

# MATERIALS AND METHODS

The clinical study on sirangu was carried out in the Post Graduate department of Kuzhanthai Maruthuvam in Government Siddha Medical College at Palayamkottai.

**Selection of cases:**

The patients were selected according to the signs and symptoms of sirangu as mentioned in siddha aspects. The patients were treated either in OP and IP. 20 cases were admitted from both sexes of various ages upto 12 and 50 and more OP cases were seen.

**Evaluation of Clinical Parameters:**

During admission, the patients were selected according to the clinical features of sirangu like,

- Itching
- Burrows
- Inflammatory papules
- Pruritic papules
- Vesicles
- Pustules

These symptoms are present in the webs of the fingers, wrist, ankles, buttocks, groin and the genital areas. Complete case history and details about the precipitating factors, family history, socio economic status, contact history, dietary and personal history were taken.

**Study on Siddha Mode of Diagnosis:**

A case sheet was prepared on the basis of siddha methodology (ie) Poriyalarithal, Pulanaaltherthal, Vinavuthal and envagai thervugal.

**Clinical Investigations:**

All the patients were subjected to the following routine laboratory investigations available at Government Siddha Medical College, Palayamkottai.

**Haematological Investigation:**

Total WBC Count

Differential Count

Erythrocyte sedimentation rate

Haemoglobin.

**Urine:**

Albumin

Sugar

Deposit

**Stools:**

Ova

Cyst

Efficacy of the trial drugs was found by biochemical analysis, carried out in the Department of the Bio-Chemistry, Government Siddha Medical College, Palayamkottai.

Pharmacological analysis of the trial drug was carried out in the Department of Pharmacology, Government Siddha Medical College, Palayamkottai.

**Trial Drugs:**

The patients were treated with vasambu ennai with hot water at night a day after meals. Karunjeeraga kalimbu was used as external application for twice a day.

All the patients admitted for the study were given uniform regular hospital diet.

At the time of discharge all the 20 patients were advised to attend the outpatient ward for follow up study.

# LINE OF TREATMENT

**The Line of Treatment for sirangu is as follows**

- Bringing the three doshas into its equilibrium state
- Administration of internal medicine to arrest the disease process.
- Application of the external medicine topically over the lesions
- Pathiyam (ie) diet restriction to normalize the vitiated dhosas and to maintain good drug action.
- Advising personal hygiene.

**Bringing the three doshas into its equilibrium state**

To bring the three doshas in equilibrium – Nilavagai choornam – ½ - 2 gm with hot water according to age and physical state.

**Administration of internal medicine:**

All the twenty patients were given the trial drug Vasambu eannai with hot water at night daily and regularly and the progress was noted.

**Dosage:**

| | | |
|---|---|---|
| 2 - 4 Years | - | 2.5ml |
| 4 - 7 years | - | 5ml |
| 7 - 12 years | - | 5ml |

Also the dosage was adjusted according to the severity and condition of the patient.

**Anupanam in Siddha system:**

‘mDghdj;jhNy atpo;jk; gypf;Fk;

,dpjhd Rf;F fd;dy; ,Q;rp - kpDKjfhy

NfhNkak; ghy; Kiyg;ghy; Nfhnea; Njd; ntw;wpiy ePh;

Mkpij ahuha;j;J nra;ayhk;”.

- Njiuah; ntz;gh

Siddha system considers anupanam as an important adjuvant of the drug than the medicine itself. In this work, the author used hot water as anupanam.

**Application of External medicine:**

All the twenty patients were treated with Sirangu ennai externally twice a day, over the lesions.

**Pathiyam:**

Diet restrictions are important for good drug action and also to normalize the vitiated dlaosas. For sirangu the patients were strictly advised to avoid,

Agathi Keerai

Pagal Kaai

Poosani Kaai

Perum Payuru

Kaanam

Motchai

Palapazham.

Also the sirangu provoking food items, or factors like Kathirikaaai, Kambu arisi, Cholam, Senchemba, Pudalangaai, Maangaai, Varagu Satham, allikulathu neer, certain type of fish and dry fish were strictly avoided.

**Management:**

The following measures were advised to follow for the early cure and to avoid reoccurrence.

1. Patients were advised to take bath atleast once a day with luke warm water.
2. They were advised to avoid bathing in public tanks.
3. They were advised to use Nalungu maa, Paasipayaru maa or Kadalai paruppu maa instead of soap.
4. Patients were advised not to wear other clothes and to change clothes daily.
5. All the family members affected by this disease were advised to take medicines at the same period.
6. School going children were advised to take medicines at the same period.
7. Infested bedding and clothes should be washed and dried in sun light.

**Control of sirangu:**

After recovery all the patients were advised with health education like,

1. Environmental modifications such as avoiding overcrowding.
2. Maintaining personal hygiene for the prevention and control of sirangu.
3. Improving patient's general health by taking rich diet with greens and vegetables.

# OBSERVATION AND RESULTS

**Results were observed with respect to the following criteria.**

1. Sex Distribution
2. Age Distribution
3. Kaalam
4. Paruva kaalam
5. Distribution of Lands (Thinai)
6. Religion Reference
7. Socio Economic status
8. Diet Reference
9. Etiology
10. Clinical features
11. Site of infection
12. Duration of illness
13. Tridhosha Theory
14. Ezhu udarkattugal
15. Envagai Thervugal
16. Neikuri
17. Gradation of total result
18. IP Case Report
19. Investigation Chart

The observations recorded with the above said criteria were given in the tabular column form.

**Table 1: Sex Distribution**

**1. Sex Distribution:**

| S. No. | Sex | No. of cases | Percentage |
|---|---|---|---|
| 1. | Male children | 12 | 60% |
| 2. | Female Children | 8 | 40% |

Among the 20 patients selected, 60% of patients were male children and 40% of patients were female children.

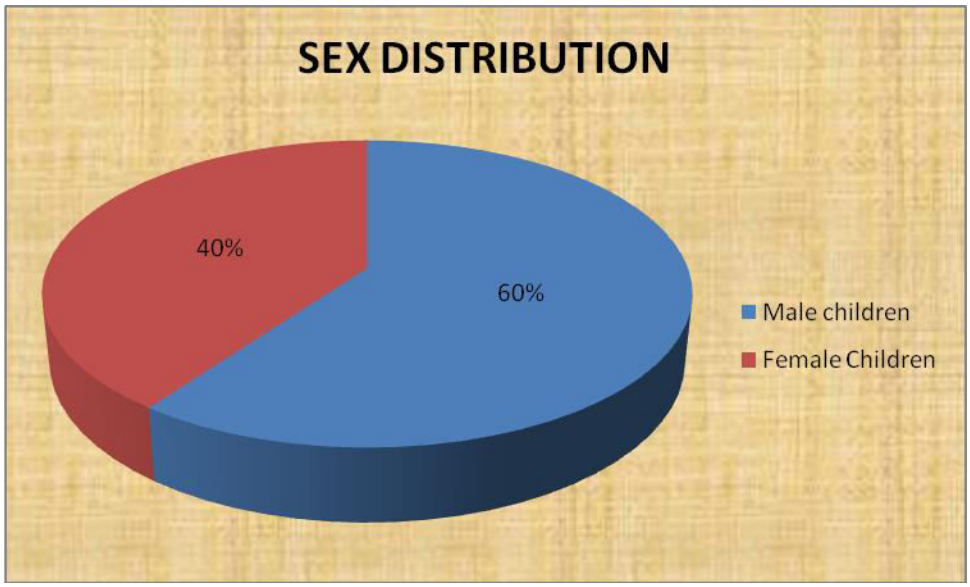


**Table 2: Age Distribution**

**2. Age distribution:**

| S. No. | Age | No. of cases | Percentage |
|---|---|---|---|
| 1 | Upto 12 months Kaappu and Senkeerai Paruvam | - | - |
| 2. | 1-3 year (Thaalattu, Sappani, Mutha, Varugai, Paruvam). | 2 | 10% |
| 3. | 3-6years (Ampuli, Ammanai, Neeraduthal, Oonjal, Paethai for female child Ampuli, Sitril, Siruparai, Siruther for male child). | 3 | 15% |
| 4. | 6-12 years (Paethumbai –for Female child Siru Paruvam for male child). | 15 | 75% |

The percentage was highest in the age group of 6 - 12 years, the percentage was 75%, between the age group 3 – 6 years the percentage was 15%. 10% belonged to the age group 1-3 years.

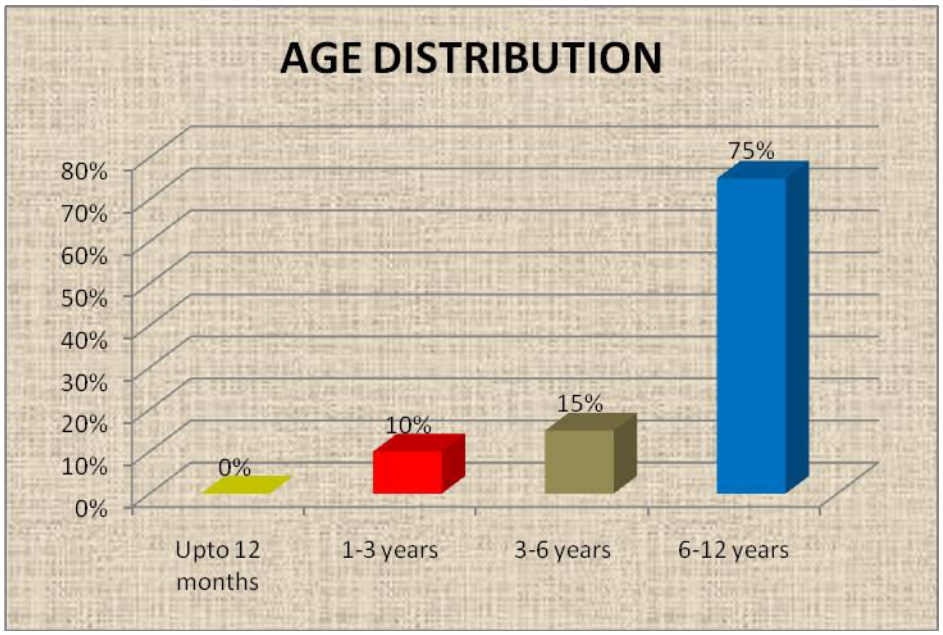


**Table 3: Kaalam**

**3. Kalam**

| S. No. | Kaalam | No. of cases | Percentage |
|---|---|---|---|
| 1 | Vatham | 20 | 100% |
| 2. | Pitham | - | - |
| 3. | Kapham | - | - |

In this study, all the 20 patiens were in Vatha Kaalam since all the patients belong to children age group.

**Table 4: Paruva Kaalam**

**4. Paruva Kaalam**

| S. No. | Paruva kaalam | No. of cases | Percentage |
|---|---|---|---|
| 1. | Kaar kaalam (Aavani& Purattasi) (Aug.16 - Oct.15) | 2 | 10% |
| 2. | Koothir kaalam (Iyppasi & Karthigai) (Oct.16 - Dec.15) | 8 | 40% |
| 3. | Munpani kaalam (Markazhi & Thai) (Dec.16 - Feb.15) | 10 | 50% |
| 4. | Pinpani kaalam (Masi & Panguni) (Feb.16 - April 15) | - | - |
| 5. | Elavenil kaalam (Chithirai & Vaigasi) (April – 16 - June 15) | - | - |
| 6. | Muthuvenil kaalam (Aani & Aadi) (June 16 – Aug.15) | - | - |

Among the 20 cases selected, 10% of cases were admitted in Kaar kaalam, 40% of cases were admitted in Koothir kaalam and Elavenil kaalam and 50% of cases were admitted in Munpani Kaalam.

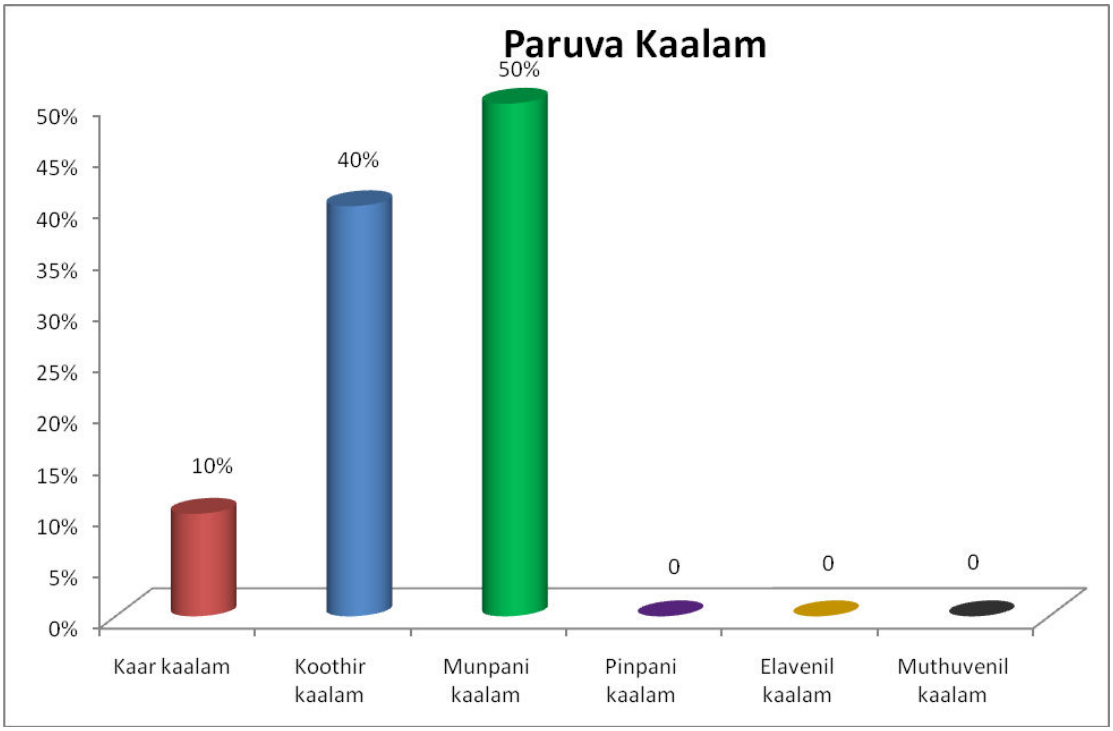



**Table 5: Distribution of Lands (Thinai)**

**5. Thinai**

| S. No. | Thinai | No. of cases | Percentage |
|---|---|---|---|
| 1 | Kurunji (Hill area) | - | - |
| 2. | Mullai (Forest area) | - | - |
| 3. | Marutham (Fertile area) | 19 | 95% |
| 4. | Neithal (Coastal area) | 1 | 5% |
| 5. | Paalai (Desert area) | - | - |

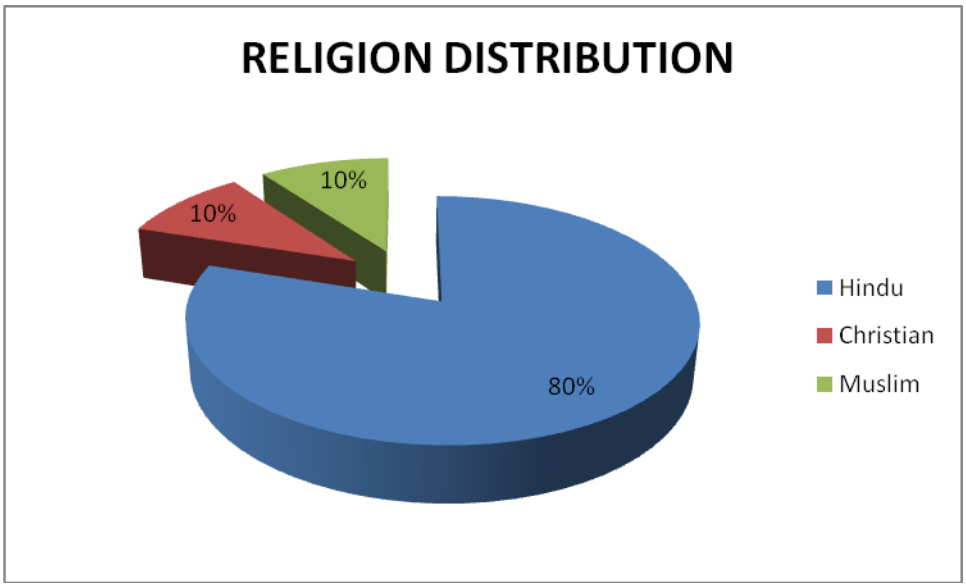
Among 20 cases admitted, 19 cases belonged to Marutham and 1 case belonged to Neithal.

**Table 6: Religion Distribution**

## 6. Religion Distribution

| S. No. | Religion | No. of cases | Percentage |
|---|---|---|---|
| 1 | Hindu | 16 | 80% |
| 2. | Christian | 2 | 10% |
| 3. | Muslim | 2 | 10% |

Out of 20 cases 80% were Hindus, 10% were Christians and 10% were Muslims.



## 7. Socio – Economic Status of the Patient

| S. No. | Socio-Economic Status | No. of cases | Percentage |
|---|---|---|---|
| 1 | Poor | 16 | 80% |
| 2. | Middle | 4 | 20% |
| 3. | Rich | - | - |

Out of the 20 patients, 80% of cases were poor and 20% were middle class people.

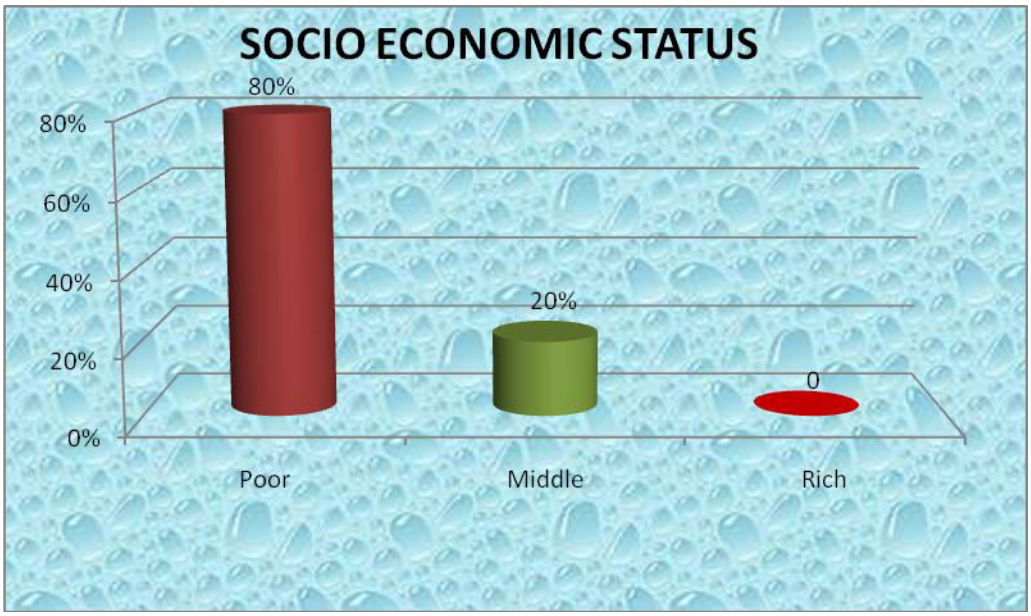


**Table 8: Diet**

**8. Diet**

| S. No. | Diet | No. of Cases | Percentage |
|---|---|---|---|
| 1. | Vegetarian | 1 | 5% |
| 2. | Non Vegetarian | - | - |
| 3. | Mixed | 19 | 95% |

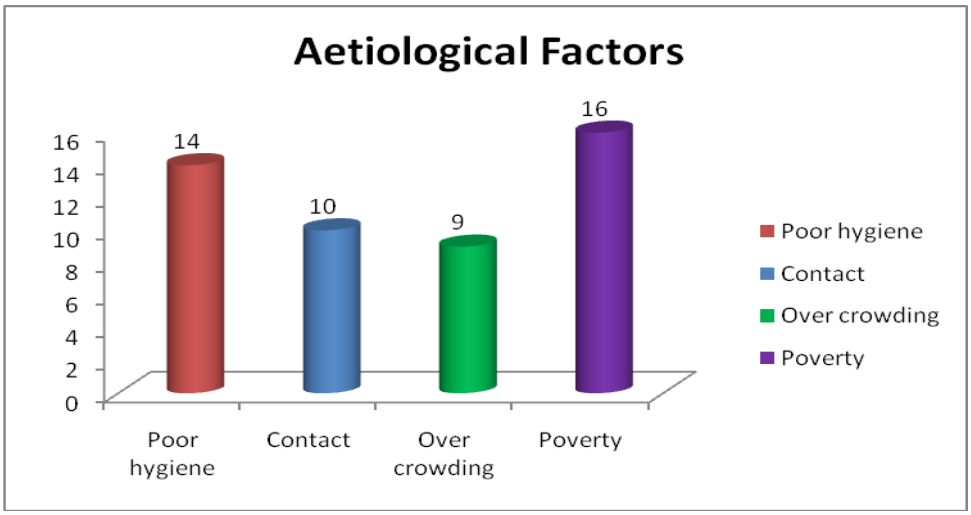
95% of cases have mixed diet and 5% of cases have vegetarian diet.

**Table 9: Aetiological Factors**

**9. Aetiological Factors**

| S. No. | Aetiological Factors | No. of Cases | Percentage |
|---|---|---|---|
| 1. | Poor hygiene | 14 | 70% |
| 2. | Contact | 10 | 50% |
| 3. | Over crowding | 9 | 45% |
| 4. | Poverty | 16 | 80% |

Poor hygiene was noted in 70% of cases Poverty was noted in 80% of cases, contact history was noted in 50% of cases. Overcrowding was noted in 45% of cases.



## Table 10: Clinical Features

### 10. Clinical Features

| S. No. | Signs and Symptoms | No. of cases | Percentage |
|---|---|---|---|
| 1 | Itching | 20 | 100% |
| 2. | Burrows | 14 | 70% |
| 3. | Pruritic papules | 20 | 100% |
| 4. | Inflammatory papules | 13 | 65% |
| 5. | Vesicles | 10 | 50% |
| 6. | Pustules | 5 | 25% |

100% of cases had Itching and Pruritic papules. 70% of cases show burrows 65% of cases had inflammatory papules. 50% of cases had vesicles. 25% of cases had Pustules.

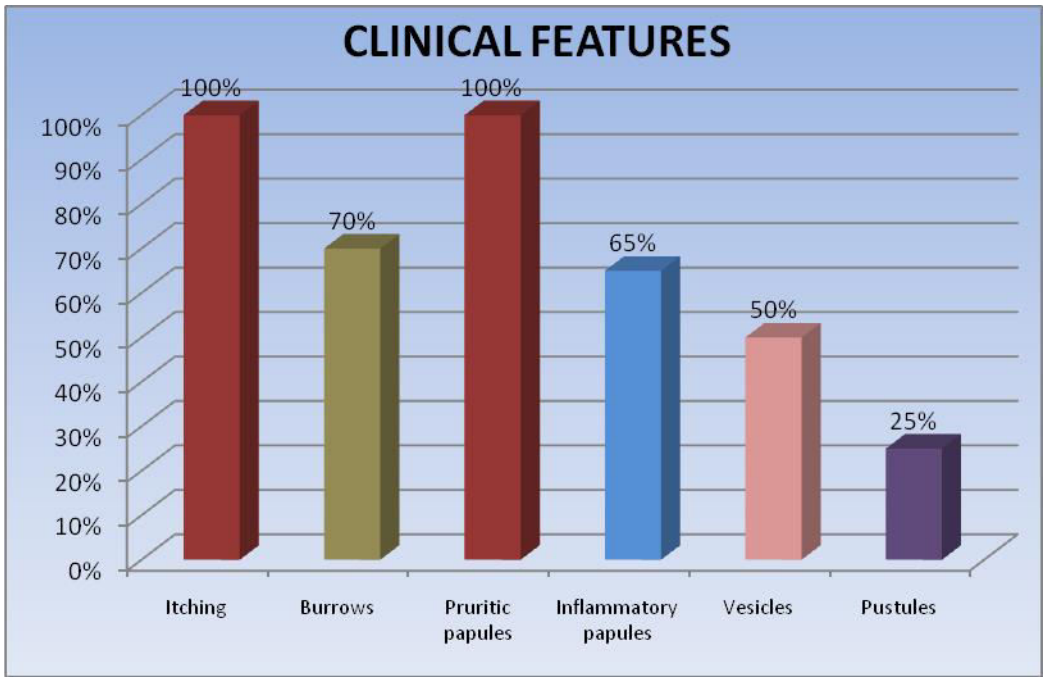
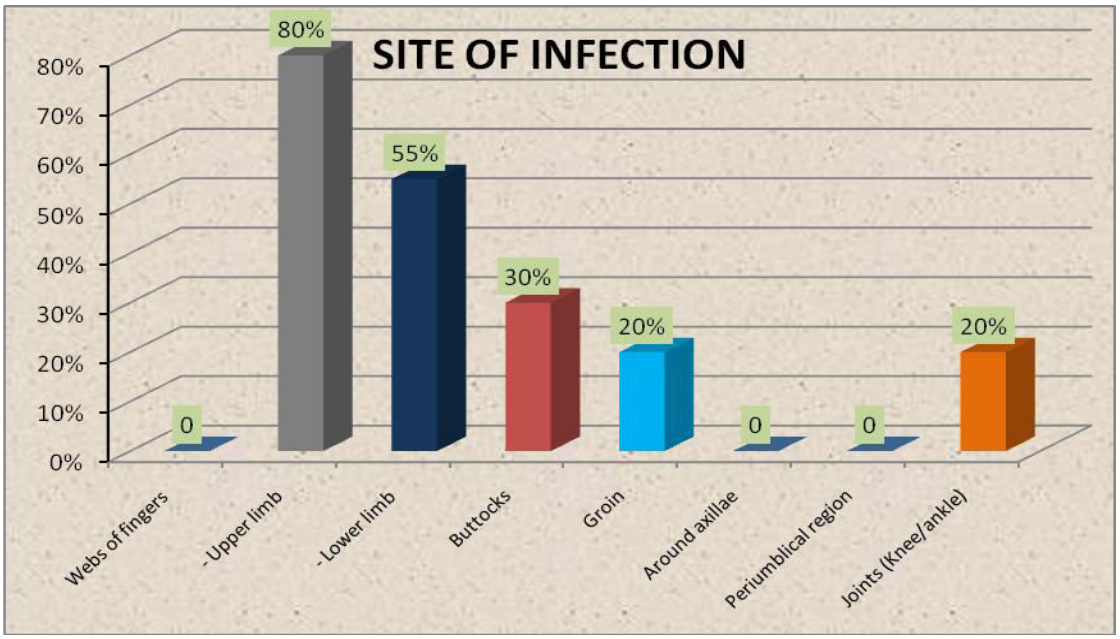


**Table 11: Site of Infection**

## 11. Site of Infection

| S. No. | Signs and Symptoms | No. of cases | Percentage |
|---|---|---|---|
| 1 | Webs of fingers<br>- Upper limb<br>- Lower limb | <br>16<br>11 | <br>80%<br>55% |
| 2. | Buttocks | 6 | 30% |
| 3. | Groin | 4 | 20% |
| 4. | Around axillae | - | - |
| 5. | Periumblical region | - | - |
| 6. | Joints (Knee/ankle) | 4 | 20% |




80% of cases were affected in the webs of fingers of upper limb.

55% of cases were affected in the webs of fingers of lower limb.

30% of cases were affected in Buttocks.

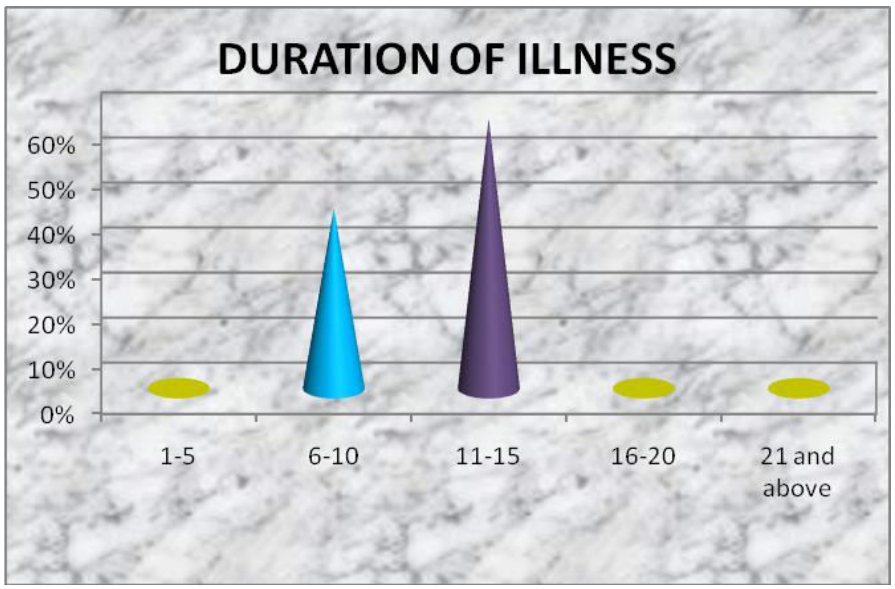
20% of cases were affected in Groin.

20% of cases were affected around knee of ankle joint.

**Table 12: Duration of Illness**

## 12. Duration of Illness

| S. No. | Duration (Days) | No. of cases | Percentage |
|---|---|---|---|
| 1 | 1-5 | - | - |
| 2. | 6-10 | 8 | 40% |
| 3. | 11-15 | 12 | 60% |
| 4. | 16-20 | - | - |
| 5. | 21 and above | - | - |




40% of cases were affected for 6-10 days

60% of cases were affected for 11-15 days

## Table 13: Distribution of Tridhosam

### 13.a Table shows the Derangement of Vaatha

| S. No. | Classification of Vaatha | No. of cases | Percentage |
|---|---|---|---|
| 1. | Pranan | - | - |
| 2. | Abaanan | 20 | 100% |
| 3. | Viyaanan | 20 | 100% |
| 4. | Uthaanan | - | - |
| 5. | Samaanan | 20 | 100% |
| 6. | Naagan | - | - |
| 7. | Koorman | - | - |
| 8. | Kirukaran | 4 | 20% |
| 9. | Devathathan | 2 | 10% |
| 10. | Thananjeyan | - | - |

According to the derangement in the types of Vatha, in 100% of the cases Viyaanan and Samaanan were affected. Abaanan and Devathathan were affected in 10% of the cases. Kirugaran was affected in 20% of cases.

**13.bTable show the Derangement of Pitha**

| S. No. | Pitham | No. of cases | Percentage |
|---|---|---|---|
| 1. | Anar Pitham | 4 | 20% |
| 2. | Ranjagam | 5 | 25% |
| 3. | Sathagam | - | - |
| 4. | Prasagam | 20 | 100% |
| 5. | Alosagam | - | - |

Among the cases studied Anilam was affected in 20% of the cases, Ranjagam was affected in 25% of the cases and Prasagam was affected in 100% of the cases.

**13.c Table shows the Derangement of Kabha**

| S. No. | Kapham | No. of cases | Percentage |
|---|---|---|---|
| 1. | Avalambagam | - | - |
| 2. | Kilethagam | 4 | 20% |
| 3. | Pothagam | - | - |
| 4. | Tharpagam | - | - |
| 5. | Santhigam | - | - |

Among the twenty cases, Kilethagam was affected in 20% of the cases.

**Table 14: Ezhu Udarkattugal Reference**

**14. Ezhu Udarkattugal**

| S. No. | Udarkattugal | No. of cases | Percentage |
|---|---|---|---|
| 1. | Saaram | 20 | 100% |
| 2. | Senneer | 20 | 100% |
| 3. | Oon | - | - |
| 4. | Kozhuppu | - | - |
| 5. | Enbu | - | - |
| 6. | Moolai | - | - |
| 7. | Sukkilam/Suronitham | - | - |

Saram and Senneer were affected in 20 patients due to the derangement of Vaatha and Pitha.

**Table 15: Envagai Thervugal Reference**

**Envagai Thervugal**

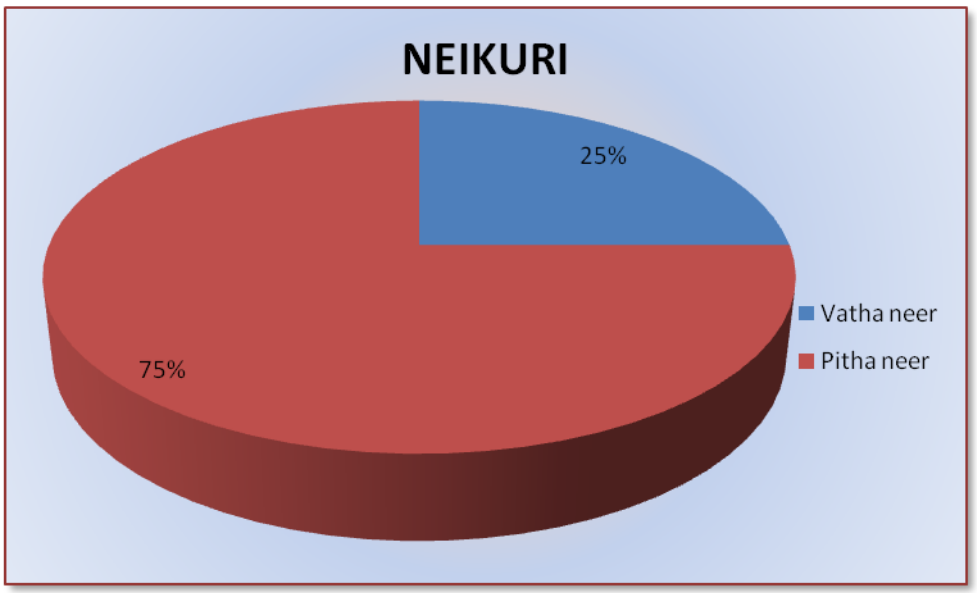
| S.No. | Envagai Thervugal | No.of cases | Percentage |
|---|---|---|---|
| 1. | Naa | 5 | 25% |
| 2. | Niram | 10 | 50% |
| 3. | Mozhi | - | - |
| 4. | Vizhi | 5 | 25% |
| 5. | Malam | 2 | 10% |
| 6. | Moothiram | - | - |
| 7. | Naadi | - | - |
| 8. | Sparisam | 20 | 100% |

Naa and Vizhi were affected in 25% of the cases. In 75% cases Niram was affected. In 50% of the cases Vizhi was affected. Sparisam was affected in all cases.

## Table 16: Neerkuri and Neikuri

### 16. Neerkuri and Neikuri

| S.No | Type of test | No. of cases | Percentage |
|---|---|---|---|
| 1. | Neerkuri<br>Vaikkol Niram | 20 | 100% |
| 2. | Nei Kuri<br>Aravena Neendathu | 5 | 25% |
| | Muththothu nitral | 15 | 75% |




In Neikuri analysis 25% of patients show vatha neer and 75% of patients show kabha neer.

**Table 17: Gradation of Total result**

## 17. Gradation of Total Result

| S. No. | Gradation | No. of Cases | Percentage |
|---|---|---|---|
| 1. | Good | 11 | 55% |
| 2. | Moderate | 6 | 30% |
| 3. | Mild | 3 | 15% |

Among the 20 patients selected, 55% of cases showed good response 30% of cases showed moderate response and 15% of cases showed mild response.

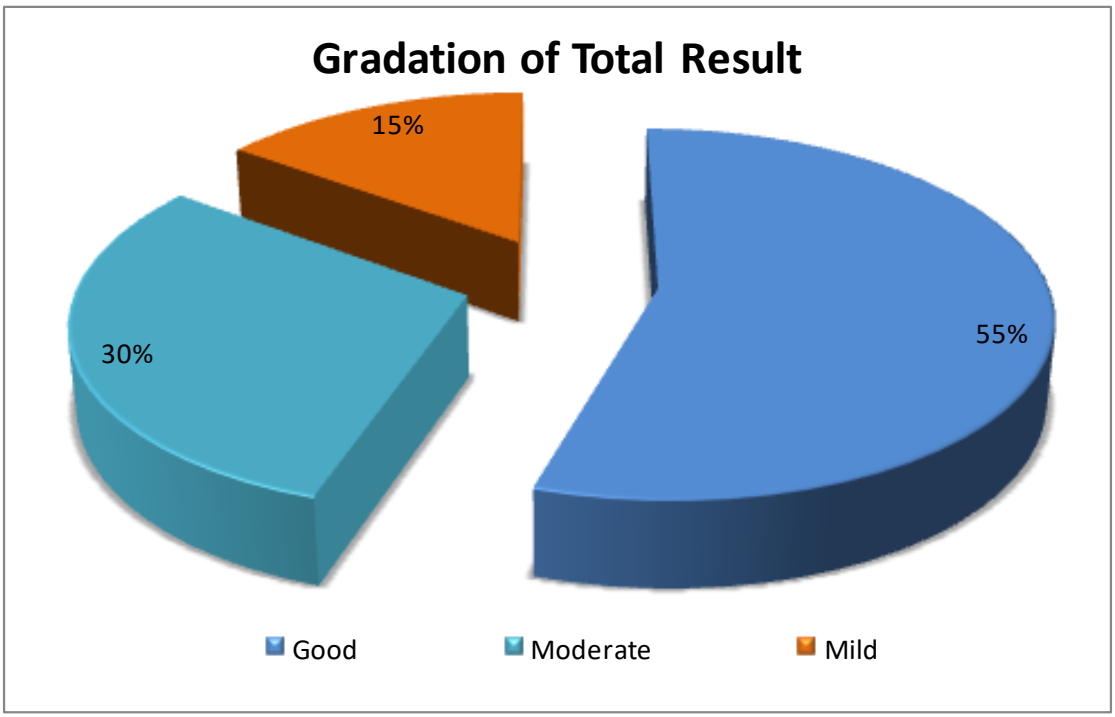


**TABLE 40: INPATIENT CASE REPORT OF TWENTY CASES FOR THE DISEASE 'SIRANGU'**

| S.No | I.P No | Name | Age/Sex | Signs and Symptoms | DOA | DOD | No.Of.Days | Remarks |
|---|---|---|---|---|---|---|---|---|
| 1 | 3278 | Mohamed fayaz | 9/MC | Itching, inflammatory papules, vesicles, burrows present in the inter digital areas of both fingers, and in the foot. | 14.09.11 | 21.09.11 | 8 | Good |
| 2 | 2155 | Karthiga | 21/2/ FC | Itching, inflammatory papules, burrows present in the interdigital areas of both hands and wrist | 06.10.11 | 15.10.11 | 10 | Moderate |
| 3 | 2403 | Sam | 6/MC | Itching, mild burrows, vesicles inflammatory papules present in the webs of the fingers and in the feet | 17.10.11 | 29.10.11 | 13 | Moderate |
| 4 | 2590 | Muthu | 10/MC | Small papules, burrows itching present in the webs of the fingers dossal foot and in the elbows. | 17.10.11 | 29.10.11 | 13 | Good |
| 5 | 2587 | Samuel | 12/MC | Itching, inflammatory papules, vesicles, mild burrows own in the inter digital areas of both hands. | 17.10.11 | 29.10.11 | 13 | Mild |
| 6 | 2585 | Esakki | 12/MC | Itching, pruritic papules, vesicles present in the ankle, dorsal feet and in the knee joint. | 17.10.11 | 29.10.11 | 13 | Good |
| 7 | 2591 | Bala | 10/MC | Inflammatory papules and vesicles itching present in both buttocks, groins, and in the feet. | 17.10.11 | 29.10.11 | 13 | Good |
| 8 | 2592 | Sowmya | 8/FC | Pruritic papules and vesicles, burrows, itching present in the wrist, webs of fingers, knee joint and in the foot | 17.10.11 | 29.10.11 | 13 | Good |
| 9 | 2586 | Vasudevan | 12/MC | Itching, pruritic papules, pustules, burrows present in the fingers, wrist and in the dorsal feet | 18.11.11 | 23.11.11 | 6 | Good |
| 10 | 2960 | Arumugakani | 11/MC | Inflammatory and pruritic papules, vesicles, itching mild burrows present in the interdigital space of fingers, wrist and in the foot. | 12.12.11 | 20.12.11 | 9 | Moderate |
| 11 | 3402 | Megala | 12/FC | Itching, mild burrows, inflammatory papules pustules present in both buttocks, genitalia and in the webs of fingers and wrist | 16.12.11 | 28.12.11 | 13 | Good |
| 12 | 3221 | Palani barathi | 11/MC | Itching, burrows, inflammatory papules, present in the fingers small papules seen in the buttocks. | 17.12.11 | 28.12.11 | 12 | Good |

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 13 | 3299 | Kaleeswari | 12/FC | Small inflammatory papules, itching present in the knees, ankles dorsal foot and in the webs of fingers. | 17.12.11 | 28.12.11 | 12 | Moderate |
| 14 | 3301 | Sowmya | 8/FC | Itching, pruritic, inflammatory papules and vesicles, pustules burrows present in interdigital areas, fingers, wrist and in buttocks. | 17.12.11 | 28.12.11 | 12 | Good |
| 15 | 3300 | Krishna | 4/MC | Itching, inflammatory papules, present in the webs of the fingers and in the feet of both legs. | 17.12.11 | 28.12.11 | 12 | Moderate |
| 16 | 3368 | Vel murugan | 12/MC | Small papules, itching present in the elbows, wrist and in the fingers of both hands. | 21.12.11 | 29.12.11 | 9 | Good |
| 17 | 3304 | Thaskeem | 3/MC | Pruritic papules vesicles seen in the buttocks, groins and in the genitalia. Burrows, itching also present | 22.12.11 | 29.12.11 | 8 | Good |
| 18 | 3369 | Malar kodi | 10/FC | Itching, inflammatory, pruritic papules, vesicles, pustules burrows present in the interdigital spaces, fingers, wrist, ankles and in the foot of both limbs. | 22.12.11 | 29.12.11 | 8 | Mild |
| 19 | 3352 | Mookith | 4/MC | Mild burrows, itching, inflammatory papules, pustules in the fingers and webs of the fingers. | 23.12.11 | 29.12.11 | 7 | Moderate |
| 20 | 3384 | Mukila | 8/FC | Small papules and pruritic papules, itching present in the fingers, buttocks and in the feet. | 26.12.11 | 05.01.12 | 11 | Good |

**Table 41 : Laboratory investigations of 20 Inpatients**

| S.no | Ip.no | Name of the patient | Age/sex | Tc/cu-mm | P% | L% | E% | Hb% | ESR 1/2hr | 1hr | Tc-cu.mm | P% | L% | E% | Hb% | ESR ½ hr | 1hr | Alb | Dep | Alb | Dep | Ova | Cyst |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2155 | Karthiga | 21/2/fc | 9300 | 62 | 33 | 5 | 66 | 4 | 8 | 9400 | 63 | 35 | 2 | 67 | 3 | 7 | Nil | NAD | Nil | NAD | Nil | Nil |
| 2 | 2403 | Sam | 6/mc | 8800 | 58 | 37 | 5 | 59 | 9 | 18 | 8800 | 61 | 35 | 4 | 60 | 6 | 12 | Nil | NAD | Nil | NAD | Nil | Nil |
| 3 | 2590 | Muthu | 10/mc | 9200 | 46 | 50 | 4 | 70 | 6 | 12 | 9200 | 50 | 49 | 1 | 69 | 5 | 10 | Nil | NAD | Nil | NAD | Nil | Nil |
| 4 | 2587 | Samuel | 12/mc | 9000 | 64 | 32 | 4 | 64 | 5 | 9 | 9100 | 61 | 35 | 4 | 64 | 4 | 7 | Nil | NAD | Nil | NAD | Nil | Nil |
| 5 | 2585 | Esakki | 12/mc | 8600 | 55 | 40 | 5 | 66 | 6 | 9 | 8400 | 55 | 43 | 2 | 67 | 2 | 3 | Nil | Occ.epi cells | Nil | NAD | Nil | Nil |
| 6 | 2591 | Bala | 10/fc | 8800 | 64 | 34 | 2 | 68 | 4 | 9 | 8600 | 66 | 32 | 2 | 68 | 4 | 6 | Nil | NAD | Nil | NAD | Nil | Nil |
| 7 | 2592 | Sowmya | 8/fc | 7900 | 68 | 26 | 6 | 70 | 7 | 14 | 7800 | 70 | 26 | 4 | 71 | 4 | 9 | Nil | NAD | Nil | NAD | Nil | Nil |
| 8 | 2586 | Vasudevan | 12/mc | 8000 | 63 | 34 | 3 | 56 | 6 | 12 | 8100 | 60 | 37 | 3 | 58 | 5 | 10 | Nil | NAD | Nil | NAD | Nil | Nil |
| 9 | 2960 | Arumugakani | 11/mc | 9100 | 71 | 25 | 4 | 73 | 5 | 10 | 9200 | 72 | 26 | 2 | 74 | 3 | 8 | Nil | NAD | Nil | NAD | Nil | Nil |
| 10 | 3221 | Palani barathi | 11/mc | 9800 | 58 | 40 | 2 | 68 | 4 | 8 | 9700 | 56 | 41 | 3 | 70 | 4 | 8 | Nil | NAD | Nil | NAD | Nil | Nil |
| 11 | 3299 | Kaleeswari | 12/fc | 8700 | 69 | 35 | 7 | 72 | 6 | 13 | 8700 | 72 | 36 | 3 | 71 | 6 | 9 | Nil | Occ.epi cells | Nil | NAD | Nil | Nil |
| 12 | 3301 | Sowmya | 8/fc | 8100 | 54 | 38 | 8 | 61 | 11 | 12 | 8300 | 55 | 41 | 4 | 62 | 7 | 15 | Nil | NAD | Nil | NAD | Nil | Nil |
| 13 | 3300 | Krishna | 4/mc | 10200 | 70 | 24 | 6 | 74 | 5 | 10 | 10300 | 59 | 26 | 5 | 74 | 4 | 8 | Nil | NAD | Nil | NAD | Nil | Nil |
| 14 | 3304 | Thaskeem | 3/mc | 9600 | 61 | 35 | 4 | 65 | 3 | 7 | 9900 | 61 | 36 | 3 | 63 | 3 | 6 | Nil | NAD | Nil | NAD | Nil | Nil |
| 15 | 3369 | Malarkodi | 10/fc | 10000 | 58 | 34 | 8 | 71 | 5 | 11 | 10000 | 62 | 36 | 2 | 72 | 3 | 8 | Nil | NAD | Nil | NAD | Nil | Nil |
| 16 | 3368 | Vel murugan | 12/mc | 8900 | 52 | 43 | 5 | 72 | 8 | 15 | 9000 | 52 | 43 | 5 | 70 | 4 | 9 | Nil | Occ.epi cells | Nil | NAD | Nil | Nil |
| 17 | 3352 | Mookith | 4/mc | 9200 | 57 | 38 | 5 | 60 | 7 | 14 | 9500 | 56 | 41 | 3 | 60 | 5 | 10 | Nil | NAD | Nil | NAD | Nil | Nil |
| 18 | 3384 | Mukila | 8/fc | 8600 | 58 | 40 | 2 | 62 | 3 | 6 | 8600 | 60 | 38 | 2 | 63 | 2 | 3 | Nil | NAD | Nil | NAD | Nil | Nil |
| 19 | 3402 | Megala | 12/fc | 9900 | 62 | 35 | 3 | 58 | 9 | 5 | 9800 | 61 | 38 | 1 | 60 | 3 | 8 | Nil | NAD | Nil | NAD | Nil | Nil |
| 20 | 3278 | Mohamed fayaz | 9/mc | 9500 | 74 | 20 | 6 | 69 | 3 | 7 | 9700 | 74 | 22 | 4 | 70 | 3 | 8 | Nil | NAD | Nil | NAD | Nil | Nil |

E↔≡ζ

# O.P.Case List

| S.No. | O.P.No. | Name | Age / Sex | No. of Days | Remarks |
|---|---|---|---|---|---|
| 1. | 2920 | Thangam | 9 FC | 21 | Good |
| 2. | 2918 | Subbu | 9 FC | 24 | Good |
| 3. | 41013 | Rajalakshmi | 10 FC | 23 | Good |
| 4. | 41434 | Raja | 8 MC | 26 | Good |
| 5. | 41433 | Visha | 2 FC | 29 | Good |
| 6. | 41601 | Kiruba | 2 FC | 33 | Good |
| 7. | 41817 | Vinoth | 11 MC | 25 | Good |
| 8. | 41927 | Pavithra | 2 FC | 31 | Good |
| 9. | 42159 | Velbalaji | 11 MC | 29 | Good |
| 10. | 42166 | Mariyamma | 12 MC | 27 | Good |
| 11. | 42163 | Shanmugasundaram | 10 MC | 26 | Good |
| 12. | 42223 | Aathi Durga | 12 MC | 32 | Good |
| 13. | 43422 | Jabziel | 12 MC | 28 | Good |
| 14. | 44031 | Akshya | 2 FC | 27 | Good |
| 15. | 44360 | Dharshni | 8 FC | 33 | Good |
| 16. | 71766 | Mark | 12 MC | 34 | Good |
| 17. | 50122 | Muovarasu | 6 MC | 29 | Good |
| 18. | 45910 | Athira | 6 FC | 27 | Good |
| 19. | 36154 | Suriya Prakash | 2 MC | 26 | Good |
| 20. | 39102 | Sirabalan | 4 MC | 22 | Good |

# DISCUSSION

Sirangu one of the common skin diseases found in paediatric practice resembles in its clinical features with scabies in modern medicine caused by sarcoptes scabiei. In siddha literatures thinavu, neer kortha kurrukkal, seezhkortha koppulam are described as the main clinical features. These clearly coincide with scabies.

The author had collected the details about sirangu from pararasa seharam, siddha Maruthuvam sirappu, Noi Illa Neri, Guru Naadi Saathiram 235 and Pulipani vaidhyam 500.

Twenty cases were selected for admission of various ages upto 12 and according to the clinical features mentioned in pararasa saharam Bala Roga Nithanam and Siddha maruthuvam sirappu. Siddha method of diagnosis was carried out for all the patients.

The drugs used to treat this disease were VASAMBU ENNAI internally and KARUNJEERAGA KALIMBU externally.

**Sex distribution:**

Among the 20 cases studied 75% of cases were male children and 25% of cases were female children.

**Age distribution:**

Of the 20 cases admitted, 10% of cases were of age 1-3 years, 15% were of from 3-6 years and 75% were of from 6-12 years.

**Kaalam and Paruvakalam:**

Since prediatric practice limits itself in vatha kaalam, all cases were in vatha kaalam.

In this study, 10% of cases were reported in Kaar Kaalam, 40% were reported in Kuthir kaalam and 50% of the cases were reported in Munpani kaalam.

**Thinai:**

Most of the cases 95% were from Marutha nilam and 5% were from Neithal Nilam.

**Religion:**

80% of cases were Hindus, 10% were Christians and 10% were Muslim.

**Socio Economic Status:**

Most of the patients belonged to poor socio-economic condition.

**Duration of illness:**

In most of the cases 40% duration of illness ranged from 6-10 days, 60% of cases ranged from 11-15 days.

**Clinical Features:**

Among 20 patients, 20 of them had itching, 70% of cases show burrows, 100% of cases had pruritic papules, 50% of cases had vesicles.

**State of Mukkutram:**

In vatham, viyanan and Samanan were affected in all cases. Abanan and Devathathan were affected in 10% of cases and kirugaran was affected in 20% of cases.

In pitham, prasagam was affected in all cases. Anar pitham and Ranjagam were affected in 20% and 25% of cases respectively.

In kabham kilaethagam was affected in 20% of cases.

**State of Udalkattugal:**

In Udalkattugal Saaram and Senneer were affected in all cases.

**Envagai Thervugal:**

In Envagai thervugal, sparisam was affected in all cases. Niram was affected in 50% of cases Naa and vizhi were affected in 25% of cases. Maalam is affected in 10% of cases.

The available laboratory investigations were carried out in all 20 cases.

Usually scabies can be diagnosed clinically. As skin scraping test for sarcoptes scabiei is not available here, it was not done.

In this clinical study the following drugs were given to the patients,

1. Vasambu Eannai – 5ml – at night daily with hot water (Dose was altered according to the age and the severity of disease).
2. Karunjeeraga Kalimbu for external application

The patients were advised pathiyam, good personal hygiene, and to avoid sharing of clothes, close physical contact. They were advised to take luke warm water bath daily and to use paasi paruppu maa or Nalungu maa instead of soaps.

It was observed that itching was completely arrested within 3-4 days and all other symptoms were disappeared in 6-10 days of treatment.

The efficacy of the trial drugs were shown by the pharmacological studies carried out in the department of pharmacology, Government Siddha Medical College, Palayamkottai. The internal medicine, Vasambu Eannai had significant Antihistamine action, significant Acute Anti-inflammatory and significant Chronic Anti-inflammatory action.

The external medicine, Karunjeeraga Kalimbu had significant acute anti-inflammatory action.

The biochemical studies of the trial drugs reveal the presence of phytochemicals like calcium, ferrous iron and unsaturated compound. It shows the drug Vasammpu Ennai having essential nutrients and also improves the patients general health.

**Clinical Assessment:**

Among 20 cases, it was observed that 12 cases showed good response, six cases showed moderate response and two cases showed mild response.

Therefore, the results were found to be satisfactory in all cases.

# SUMMARY

The clinical study on Sirangu with reference to its aetiology, classification, clinical features, treatment and prognosis in both siddha system as well as modern system of medicine were carried out it the Inpatient ward of post graduate department of Kuzhanthai Maruthuvam.

All the patients were treated with Vasambu Eannai 5ml – at night daily after meals as internal medicine and Karunjeeraga Kalimbu externally.

They were treated for four to ten days depending upon the severity of illness. They were also adviced to attend the out-patient ward for further follow up.

Routine laboratory investigations available in the college were done and the prognosis of the palient was noted daily.

The trail drugs had corrected the clinical features and restored the skin to normal. In this study twelve cases had good relief, six had moderate relief and two cases had mild relief.

The herb is available in almost all seasons and the preparation of medicine is very simple. The ingredients of the trial medicine are very cheap and economic.

Clinically the drugs were free from adverse effect during the course of the treatment.

Pharmacological study showed that the internal medicine Vasambu Eannai had significant Anti-histamine, significant acute and chronic Anti – inflammatory Action.

The external medicine Karunjeeraga Kalimbu had significant acute anti-inflammatory action.

This ensures the efficacies of the trial drugs, which were also proved clinically.

# CONCLUSION

In this clinical study results were found to be satisfactory.

55% of cases showed good response, 30% of cases showed moderate response and only 15% of cases showed mild response.

The trial drugs were very effective to the patients and there was no recurrence of symptoms.

Clinically the drugs are free from adverse effects and so they are useful for long term therapy for pediatrics.

The drugs are also very cheap and easily available.

So it is concluded that sirangu is a controllable and curable diseases with Vasambu Eannai and Karunjeeraga Kalimbu along with good personal hygiene.

# PREPARATION AND PROPERTIES OF THE TRIAL DRUGS

# κ⊗ΔA ♦J ¬□Φ ( χ⊥ ∴∫⊆μ)

**Njitahd ruf;F:**

κ⊗ΔA : 650fpuhk;

↓J| : 17.5 fpuhk;

ζ♥| ℘….∴M : 35 fpuhk;(1 gyk;)

∂ϒ⟩ : 140fpuhk;;(4 gyk;)

…|ς…↔ς⊗□Δ : 6 fpuhk;

Eυ⊕ς∴□ℜζ ♦J|□ : 1.3 ypl;lh;;

**nra;Kiw :**

κ⊗ΔA, ↓J|, ζ♥| ℘….∴M, ∂ϒ⟩ √|⌈ √⊆∑ς[ζ ⊗↔ℜζ||⟨∞Δ √|⇑μ ∂|↔⇑μ |υ|Δ γℜJ ℜ¬|ς⊥⟨ϒΔ. √ℜ|υ|⇑|>Eυ⊕ς∴□ℜζ ♦J|□λ_ ¬|ς]ℜ||κℜ| …κJ|Δ. ¬∴↵ζ ℘>Δ κ⊆>ϒƒ[ ∂|>√⊕ℜ J ∂]_ …|ς…↔ς⊗□Δ |⌈ℜ|ϒΔ.

**msT :**

5 τ.o. ; (Nehapdd; taJ> vil kw;Wk; Nehapd; td;ikf;F jf;fthW) √↔ϒ ∴®|Δ> cztpw;F gpd;.

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nte;ePh;

**jPUk; Neha;:**

nrhwp> rpuq;F

**MAl;fhyk;:**

$\in\int \kappa\int f\Delta$

**Mjhuk;:**

mfj;jpah; ml;ltiz thflk;(pg no-88)

# |∫⇒ʃ↔| |≠ΔA (¬κ≠∴∫⊆μ)

**Njitahd ruf;Ffs:;**

|∫⇒ʃ↔|Δ : 100fpuhk;

||ζ : 100fpuhk;

μ∫• : 100fpuhk;

A≡|Δ ℘®| *f* ℘ς_ - Njitahd msT.

**nra;Kiw:**

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ntspg;gpuNahfk;

**jPUk; Neha**:

nrhwp> rpuq;F> fug;ghd;

**MAl;fhyk;:**

1 tUlk;

**Mjhuk;:**

itj;jpa fsQ;rpak;(pg no-176)

## PROPERTIES OF THE TRIAL DRUGS

# INTERNAL TRIAL MEDICINE

## κ⊗ΔA

Botanical Name : Acorus Calamus

Family : Araceae

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# CHEMICAL CONSTITUENTS:

**Chemical constituents from the rhizome of Acorus calamus L.**

**Source**

Department of Applied Chemistry, College of Sciences, China Agricultural University, Beijing, PR China.

**Abstract**

Three new sesquiterpenes, 1 beta,7 alpha(H)-cadinane-4 alpha,6 alpha,10 alpha-triol (1), 1 alpha,5 beta-guaiane-10 alpha-O-ethyl-4 beta,6 beta-diol (2), and 6 beta,7 beta(H)-cadinane-1 alpha,4 alpha, 10 alpha-triol ( 3), together with 25 known ones, were isolated from the rhizome of Acorus calamus L. Their chemical structures were established on the basis of interpretation of spectroscopic data and comparison with those of the related known compounds.

# ↓J|

Botanical Name : Allium sativaum

Family : Liliaceae

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(∂.ζ.)

**CHEMICAL CONSTITUENTS :**

## Allium sativam

- Volatile oil (0.1-0.4%) containing sulfur compounds: including allicin, diallyl disulfide, diallyl trisulfide, ajoene and others.

- Other sulfur compounds: including allyl cysteine sulfoxide, methyl allyl thiosulfinate and related compounds.
- Trace minerals: especially selenium, geranium
- Enzymes: including alliinase, myrosinase, peroxidase.
- Other: proteins (~16%), vitamins, glucosilinates.

## ∂ϒ⟩

Botanical Name : Indigofera Tinctoria

Family : Fabaceae

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¬⊗Φ| | |⊥ : O®A↵ℜ¬|ς_o – Germicide

¬κ♥ ℘Δ χ⌋ ƒςℜ⌋ – Stimulant

¬ ℘ ςμζ□Δ :□

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(∂.ζ.)

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|ς∴ς|⌈ √|κ||⟨♥ … ℘ςℜζΔ. χƒ_ ¬℘ς[M⊕Δ ¬℘→Δ.

**Chemical Constituents :**

That whole plant of *Indigofera tinctoria* Linn. contains glycoside, indican, indigotine, indirubin and galactomannan composed of galactose, mannose and 2.5% of alkaloids, rotenoids and flavonoids. The plant also has pharmacological activities like hepatoprotective, antidyslipidemic, antiproliferative, antileukaemia and act as anticancer agents

## ζ♥| ℘ …∴M

Botanical Name : Acalypha Indica

Family : Euphorbiaceae

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>[|∴ : ¬κ♥ ℘Δ

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¬⊗Φ|||⊥ : A↵ℜ¬|ς_o □ Anthelmintic

μB↔ƒℜ⌋ □ Anodyne

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χ⊆μζ[∴Δ κς>Δ χ]↔….∴ □⌈⊆]♠ϒ
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Θς⌈≡¬|ς⊥ ….∴MB> ♠ς_.

**Chemical Constituents :**

Acalypha indica L. EUPHORBIACEAE is emetic, purgative, beneficial in cough, dyspnoea, fever, deranged kapha and vata. Fresh leaf extract with common salt is applied in eczema. The plant is used in gastrointestinal and respiratory affections and use fruits: in asthma, cough, bronchitis and earache; plant and fruit: as an expectorant, laxative,pneumonia and rheumatism; leaf: in skin diseases like scabies.

Acalyphamide (as acetate), aurantia-mide and its acetate, succinimide calypho lacetate, 2-methyl anthraquinone, tri-O-methylellagic acid, b-sitosterol and its b -D-glucoside (leaves); a cyanogenetic glucoside, acalyphine, two alkaloids, viz, acalyphine and triacetonamine, an essential oil n-octacosanol, kaempferol, quebrachitol, b-sitosterol acetate and tannin (whole plant); stigmasterol (root)

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$$\therefore \varsigma \oplus \varsigma \ldots \sum \varsigma \Phi \Uparrow \neg > \varsigma \mathrm{J} \mid f \neg\kappa\heartsuit \ldots \wp \varsigma \mid$$

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# EXTERNAL TRIAL MEDICINE

## ⎪∫⇒⎛↔⎪Δ

Botanical Name : Nigella Sativam

Family : Ranunculaceae

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κ⟨⟩B_A : E→¬⊗⎪

℘ B[ ℘ ⎪Δ χ→♥A : σ⎪>

•⎪ κ : ⎪⎪♥A

>[⎪ ∴ : ¬κ♥ ℘ Δ

÷⟩ϒ : ⎪ς⎛♥A

¬⊗Φ⎪⎪⊥ : A↵⅃ℜ¬⎪ς_o □ Anthelmintic

σB⎛⎪ κ ¬ ℘∫ℜ⌋ □ Diophoretic

μℜζ⟨♥A↵⅃ℜ¬⎪ς_o □ Parasiticide

κ⊕®EB⎪υ⁄ □ Emollient

Locally oil is anaesthetic

¬ ℘ ςμζ□Δ :□

∀∀⎪∫⇒⎛↔⎪⇑>ς[ ⎪↔♥ ℘ ¬♠ς⎪ A⌋ βΔ

κ∫⇒E↔ςΦ♥ ←∑⊗ξ ∴ςυ→Δ

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κςΦ⇓⊗ ∴∫⊆¬>♠…κ⎪κээ

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**Chemical Constituents :**

**Main constituents**

The seeds contain numerous esters of structurally unusual unsaturated fatty acids with terpene alcohols (7%); Furthermore, traces of alkaloids are found which belong to two different types: isochinoline alkaloids are represented by nigellimin and nigellimin-N-oxide, and pyrazol alkaloids include nigellidin and nigellicin.

In the essential oil (avr. 0.5%, max. 1.5%), thymoquinone was identified as the main component (up to 50%) besides p-cymene (40%), á-pinene (up to 15%), dithymoquinone and thymohydroquinone. Other terpene derivatives were found only in trace amounts: Carvacrol, carvone, limonene, 4-terpineol, citronellol.

Furthermore, the essential oil contains significant (10%) amounts of fatty acid ethyl esters. On storage, thymoquinone yields dithymoquinonene and higher oligocondensation products (nigellone).

The seeds also contain a fatty oil rich in unsaturated fatty acids, mainly linoleic acid (50 – 60%), oleic acid (20%), eicodadienoic acid (3%) and dihomolinoleic acid (10%) which is characteristic for the genus.

Saturated fatty acids (palmitic, stearic acid) amount to about 30% or less. Commercial nigella oil (“Black Seed Oil”, “Black Cumin Oil”) may also contain parts of the essential oil, mostly thymoquinone, by which it acquires an aromatic flavour.

# ⏐⏐ς

Botanical Name : Brassica Juncea

Family : Bra

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>[⏐ ∴ : ¬κ♥ ℘ Δ

÷⟩ϒ : ⏐ς⌈♥A

¬⊗Φ⏐⏐⊥ : ¬κ♥ ℘ Δ χ⌋ ƒς ℜ⌋ □ Stimulant

E→ℵ⌈♥¬ ℘ ∫ℜ⌋ □ Diuretic

¬ ℘ ςμζ□Δ :□

⏐⏐♥ ℘⏐⏐ ¬B♠κ∫ ⏐⌋⏐ ♠ ∑ς©

τ⟨⌋⌈ κ□⇑…>ς⏐ ϑ[→¬∴ς[ ⊕ς ℜ⌋

B⏐A♠ ⌈∫⊆μξ ♠λ⌈⏐κ ⏐⏐⊕¬>ς→Δ

κ≠ξ>[ ϑo⏐ ∴ κo¬B⌈ς ∴⏐KΔ

℘⇓⊗⏐ ξ>υ⏐/ ℘⌋÷♠ς⌈λo∠

Ω⇓⊗B ∴ς∞⟍ ⏐∝÷⟍ B→ℜζ….∴:

(…>□⏐ς)

**Chemical Constituents :**

Mustard seeds contain numerous chemical constituents, including phytoalexins (sinalexin, sinalbins A and B), sterols and steryl esters (primarily sitosterol and campesterol), and flavonoids (eg, apigenin, chalcone). Crude mucilage from mustard has been analyzed and contains 80% to 94% carbohydrates, 1.7% to 15% ash, and 2.2% to 4.4% protein. 5 The flavor of mustard seeds is derived from glucosinolates, which are thiocyanate glycosides. Sinalbin is responsible for the flavor of white mustard seed; sinigrin is responsible for the sharper taste associated with black and brown mustard seeds. Volatile mustard oil is derived from steam distillation or by expression. The fixed oil does not contribute to the mustard's pungency, and ground mustard does not have a pungent aroma. The pungency is produced by glucosinolates, which are hydrolyzed by the enzyme myrosinase (a thioglucoside glucohydrolase) to flavor-active isothiocyanates (mustard oils). Sinalbin primarily yields the nonvolatile 4-hydroxybenzyl isothiocyanate, while sinigrin yields the volatile allyl isothiocyanate, which is responsible for the pungent aroma. Depending on the variety of mustard, the yield of allyl isothiocyanate is approximately 1%. Brassica species produce large quantities of isothiocyanates; more than 50 different isothiocyanates have been reported as glucosinolate hydrolysis products. Other components of the oil include fixed oil, proteins, sinapic acid, and sinapine

# A≡|Δ℘ς_

Botanical Name : Pongiamia Pinnata

Family : Fabaceae

…κ→ ¬℘B⌈|⊥ : A[ζ, ↓⊆], |↔⇒⊗|Δ, |↔⇒⊗Δ

κ⟨⟩B_A : ∴↔Δ

℘B[ ℘|Δ χ→♥A : ℘®| *f*

•| κ : | |♥A, μκ⌈♥A

>[| ∴ : ¬κ♥ ℘Δ

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A≡|Δ ℘ς⌈ς♠ςμ AJ| □∞∴ κςΦ| ∴∞Δ ℵℜζΔ

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(∂.ζ.)

**Chemical Constituents :**

**Pongamia pinnata**

Reported to contain alkaloids demethoxy-kanugin, gamatay, glabrin, glabrosaponin, kaempferol, kanjone, kanugin, karangin, neoglabrin, pinnatin, pongamol, pongapin, quercitin, saponin, β-sitosterol, and tannin. Air-dry kernels have 19.0% moisture, 27.5% fatty oil, 17.4% protein, 6.6% starch, 7.3% crude fiber, and 2.4% ash. Fatty acid composition: palmitic, 3.7–7.9%,

stearic 2.4–8.9, arachidic 2.2–4.7, behenic 4.2–5.3, lignoceric 1.1–3.5, oleic, 44.5–71.3, linoleic 10.8–18.3, and eicosenoic 9.5–12.4%. Destructive distillation of the wood yields, on a dry weight basis: charcoal 31.0%, pyroligneous acid 36.69, acid 4.3%, ester 3.4%, acetone 1.9%, methanol 1.1%, tar 9.0%, pitch and losses 4.4%, and gas 0.12 cu m/kg. Manurial values of leaves and twigs are respectively: nitrogen 1.16, 0.71; phosphorus ($P_2O_5$), 0.14, 0.11; potash ($K_2O$), 0.49, 0.62; and lime (CaO), 1.54, 1.58%

μ⟩•

## Copper Sulphat

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¬⊗Φ| | | ⊥ : μκ⌈ ♥÷, ∂↵|⌈ | υ⁄, A⌋ χ⌋ *f*ς ℜ⌋

¬ ℘ ςμζ□Δ :□

∀∀A⌋ βυ→≡ | ςτB⇑][ A⌋ βυ⊕≡ | ⌋ …β| B!

σ⌋ …□υ→ ξ⇑…>ς*f* T⊕*f*ℜζ⇒ □ ⊗⌋ β⌋ [⊕

κς⊆]¬Bς| … ℘ ]>∫Δ κςΦ…∑ςΦ | ↔⊆>⟩ℜζ≡

| ς⊆] >∫⊆μ⟩• | ς⌋ .ээ

Gunapadam Thathu Jeeva Vaghupu

**CHEMICAL CONSTITUENTS :**

**As a herbicide, fungicide and pesticide**

Copper sulfate pentahydrate is a fungicide. However, some fungi are capable of adapting to elevated levels of copper ions. Mixed with lime it is called Bordeaux mixture and used to control fungus on grapes, melons, and other berries. Another application is Cheshunt compound, a mixture of copper sulfate and ammonium carbonate used in horticulture to prevent damping off in seedlings. Its use as a herbicide is not agricultural, but instead for control of invasive aquatic plants and the roots of plants near pipes containing water. It is used in swimming pools as an algaecide. A dilute solution of copper sulfate is used to treat aquarium fish for parasitic infections, and is also used to remove snails from aquariums. Copper ions are highly toxic to fish, so care must be taken with the dosage. Most species of algae can be controlled with very low

concentrations of copper sulfate. Copper sulfate inhibits growth of bacteria such as *Escherichia coli*.

For most of the twentieth century, chromated copper arsenate (CCA) was the dominant type of wood preservation for uses other than deep driven piles, utility poles, and railroad ties. To make pressure-treated wood, a large cylinder is filled with an aqueous chemical bath. Copper sulfate pentahydrate is dissolved in the water along with other additives prior to the lumber being placed inside the cylinder. When the cylinder is pressurized, the chemicals are absorbed by the wood, giving the wood fungicidal, insecticidal, and UV-light-reflecting properties that help preserve it.

# BIO – CHEMICAL ANALYSIS

## VASAMBU EANNAI

### PREPARATION OF THE EXTRACT

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

### Qualitative Analysis

| S. No. | Experiment | Observation | Inference |
|---|---|---|---|
| 1. | **Test for calcium**<br>2ml of the above prepared extract is taken in a clean test tube. To this add 2 ml of 4% ammonium oxalate solution. | A white precipitate is formed. | Indicates the trace amount of **calcium** prsent |
| 2. | **Test for sulphate:**<br>2ml of the extract is added to 5% barium chloride solution. | No white precipitate is formed. | Absence of sulphate. |
| 3. | **Test for chloride**<br>The extract is treated with silver nitrate solution. | No white precipitate is formed. | Indicates the Absence of chloride. |

| | | | |
|---|---|---|---|
| 4. | **Test for carbonate**<br>The substance is treated with concentrated Hcl. | No brisk effervescence is formed. | Absence of carbonate. |
| 5. | **Test for Starch**<br>The extract is added with weak iodine solution. | **Blue colour is formed** | Indictes the presence of **starch.** |
| 6. | **Test for iron**<br>**Ferric**<br>The extract is treated with concentrated glacial acetic acid and potassium ferro cyanide. | No blue colour is formed. | Absence of ferric iron. |
| 7. | **Test of iron :**<br>**Ferrous:**<br>The extract is treated with concentrated Nitric acid and ammonium thyo cynate. | Blood red colour is formed. | Indicates the presence of **ferrous iron.** |
| 8. | **Test for phosphate**<br>The extract is treated with ammonium molybdate and concentrated nitric acid. | **yellow precipitate is formed.** | Indicates trace amount of **phosphate** is present |
| 9. | **Test for albumin**<br>The extract is treated with Esbach's reagent. | No yellow precipitate is formed. | Absence of albumin. |

| | | | |
|---|---|---|---|
| 10. | **Test for Tannic acid**<br>The extract is treated with ferric chloride reagent. | No blue black precipitate is formed. | Absence of Tannic acid. |
| 11. | **Test for unsaturation**<br>Potassium permanganate solution is added to the extract. | It gets decolourised. | Indicates the Presence of **unsaturated compound.** |
| 12. | **Test for the reducing sugar**<br>5ml of benedict's qualitative solution is taken in a test tube and allowed to boil for 2 mts and added 8-10 drops of the extract and again boil it for 2 mts. | No colour change occurs. | Absence of reducing sugar. |
| 13. | **Test for amino acid:**<br>One or two drops of the extract is placed on a filter paper and dried it well. After drying, 1% Ninhydrin is sprayed over the same and dried it well. | **violet colour is formed.** | Indicates the presence of **Amino acids** |
| 14. | **Test for Zinc:**<br>The extract is treated with potassium Ferrocyanide. | No White precipate is formed | Absence of Zinc |

**Inference**

The given sample of "**VASAMBU EANNAI**" contains **calcium**, **Stratch, ferrous iron, Phosphat, Unsaturated compound and Amino Acid** Present.

# BIO – CHEMICAL ANALYSIS

## BIO – CHEMICAL ANALYSIS OF KARUNJEERAGA KALIMBU

### PREPARATION OF THE EXTRACT

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

**Qualitative Analysis**

| S. No. | Experiment | Observation | Inference |
|---|---|---|---|
| 1. | **Test for calcium**<br>2ml of the above prepared extract is taken in a clean test tube. To this add 2 ml of 4% ammonium oxalate solution. | no white precipitate is formed. | Absence of calcium. |
| 2. | **Test for sulphate:**<br>2ml of the extract is added to 5% barium chloride solution. | A white precipitate is formed. | Indicates the Presence of sulphate. |
| 3. | **Test for chloride**<br>The extract is treated with silver nitrate solution. | A white precipitate is formed. | Indicates the **Presence of** chloride. |
| 4. | **Test for carbonate**<br>The substance is treated with concentrated Hcl. | No brisk effervescence is formed. | Absence of carbonate. |
| 5. | **Test for Starch**<br>The extract is added with weak iodine solution. | No blue colour is formed | Absence of starch. |

| | | | |
|---|---|---|---|
| 6. | **Test for iron**<br>**Ferric**<br>The extract is treated with concentrated glacial acetic acid and potassium ferro cyanide. | No blue colour is formed. | Absence of ferric iron. |
| 7. | **Test of iron :**<br>**Ferrous:**<br>The extract is treated with concentrated Nitric acid and ammonium thyo cynate. | Blood red colour is formed. | Indicates the presence of ferrous iron. |
| 8. | **Test for phosphate**<br>The extract is treated with ammonium molybdate and concentrated nitric acid. | No yellow precipitate is formed. | Absence of phosphate. |
| 9. | **Test for albumin**<br>The extract is treated with Esbach's reagent. | No yellow precipitate is formed. | Absence of albumin. |
| 10. | **Test for Tannic acid**<br>The extract is treated with ferric chloride reagent. | No blue black precipitate is formed. | Absence of Tannic acid. |
| 11. | **Test for unsaturation**<br>Potassium permanganate solution is added to the extract. | It gets decolourised. | Indicates the **Presence of** unsaturated compound. |
| 12. | **Test for the reducing sugar**<br>5ml of benedict's qualitative solution is taken in a test tube and allowed to boil for 2 mts and added 8-10 drops of the extract and again boil it for 2 mts. | No colour change occurs. | Absence of reducing sugar. |

| | | | |
|---|---|---|---|
| 13. | **Test for amino acid:**<br>One or two drops of the extract is placed on a filter paper and dried it well. After drying, 1% Ninhydrin is sprayed over the same and dried it well. | violet colour is formed. | **Indicates the presence of** amino acid. |
| 14. | **Test for Amino acid** :<br>One or two drops of the extract is placed On a filter paper and dried it well. Afterdrying, 1% Ninnydrin is sprayed over the same and dried well. | No white precipitate is formed. | Absence of Zinc |
| 15. | **TEST FOR COPPER :**<br>To the extract dilute Nitric acid is added. Then add acetic acid and potassium ferrocyanide are added. | A brown precipitate is formed | Indicates the prescence of copper. |

**Inference**

The given sample of "**KARUNJEERAGA KALIMBU"** starch, ferrous iron, phosphate, unsaturated compound, amino acid, and copper.

# PHARMACOLOGICAL STUDIES

## ACUTE ANTI-INFLAMMATORY STUDIES ON

## VASAMBU EANNAI

**Introduction:**

In the Siddha System of Medicine, the drug under study is indicated in the condition of Sirangu Noi. Therefore, it was through appropriate screening of the drug for its acute inflammatory activity with the help of carrageenin induced Hind-paw edema and for chronic anti-inflammatory activity cotton pellet granuloma method.

**Aim:**

To evaluate the acute anti-inflammatory effect of Vasambu Eannai by Carrageenin induced hind paw oedema method in Albino rats.

**Materials and Methods:**

2 ml Vasambu Eannai was suspended in 10ml of distilled water with gum acacia as suspending agent.

**Carrageenin induced Hind Paw Method:**

Six healthy albino rats of either sex weighing between 80-100 gm were selected. The volume of each hind paw was measured by using the mercury – plethysmograph.

After the measurement of hind paw of all the rats, they were divided into the groups each containing two rats.

First group was kept as control by giving distilled water 1ml/100gm of body weight. The second group was given Inbuprofen 20mg/100gm body, weight and kept as standard. Third group was given test drug Vasambu Eannai 2 ml/100gm body weight.

The drugs were administered orally. One hour after drug administration, 0.1ml 1% (w/v) of carrageenin suspension in water is injected in the plantar surface of Hind Paw of all rats.

All the animals thus given carrageenin injection subcutaneously.

Three hour after carrageenin injection the hind paw volume was measured once again. From the differences in the initial and final hind paw volume, the degree of the inflammation was calculated by taking the volume in the untreated control group as 100%.

The percentage of inflammation of the other group was calculated.

**Results:**

The details of the experimental results shown in the table.

**EFFECT OF VASAMBU EANNAI :**

| Group | Drugs | Dose/100gm of body weight | Initial value | Final value | Mean difference | % Inflammation | % Inhibition |
|---|---|---|---|---|---|---|---|
| Control | Water | 2ml | 0.55 | 1.45 | 0.9 | 100 | - |
| Standard | Ibuprofen | 2ml | 0.55 | 0.75 | 0.20 | 22.2 | 77.8 |
| Test Drug | Vasambu Eannai | 2ml | 0.45 | 0.75 | 0.30 | 33 | 67 |

**Inference**:

The test drug Vasambu Eannai has **Significant** Acute Anti – inflammtory action.

# CHORNIC ANTI – INFLAMMATORY EFFECT OF VASAMBU EANNAI

**Aim:**

To evaluate the chronic anti – inflammatory effect of Vasambu Eannai in rats by cotton pellets granuloma method.

**Materials and method:**

**Drug preparation:**

2 ml of Vasambu Eannai was suspended in 10ml of distilled water with gum acacia as suspending agent.

**Cotton pellect Granuloma method:**

**Procedure:**

Six healthy albino rats of either sex weighing between 80-100 gm were selected and divided into 3 groups each containing 2 rats.

In this procedure the drugs were given daily for 7 days. Before giving the drug cotton pellets each weighing 10 mg were prepared and sterilized in an autoclave for about one hour under 15 Pounds atmospheric pressure.

On the day of experiment, each rat was anaesthetised with ether to implant 10mg of sterilized cotton pellet subcutaneously in the lower abdomen two on each side after making suitable incision and sutured carefully.

First group was kept as control group by giving distilled water of 1ml/100gm of body weight. To the second group the standard drug Ibuprofen in a does of 20mg/100gm of body weight was given.

The third group of animals was given tested drug Vasambu ennai in a does of 100mg/100g of body weight.

On the $8^{th}$ day of the experiment, all the rates were sacrificed and cotton pellets found to be surrounded by granulation tissue were removed and dried in hot air oven at $55^0$C-$60^0$C.

**Results:**

The details of the experimental results are shown in the table.

**Study of Chronic Anti-Inflammatory effect by Cotton Pellet method**

**EFFECT ON VASAMBU EANNAI**

| **Groups** | **Dose/ 100gm body weight** | **Pellet weight** | **Pellet weight of the granuloma of drugs** | **% inflammation** | **% inhibition** |
|---|---|---|---|---|---|
| Control | 1ml | 10mg | 250 | 100 | - |
| Ibu Brufen | 20mg/1ml | 10mg | 55mg | 22 | 78 |
| Vasambu Eannai | 2ml | 10mg | 100mg | 40 | 60 |

**Result:**

The test drug Vasambu Eannai has **Significant** Chronic Anti – inflammatory action.

## ANTI – HISTAMINIC STUDY OF

## VASAMBU EANNAI

**Aim:**

To study the Anti – histaminic effect of Vasambu Eannai

**Preparation of the test drug:**

1gm of Vasambu Eannai was boiled with 20ml of water for 15 mins. 2ml of decoction was taken as the test drug.

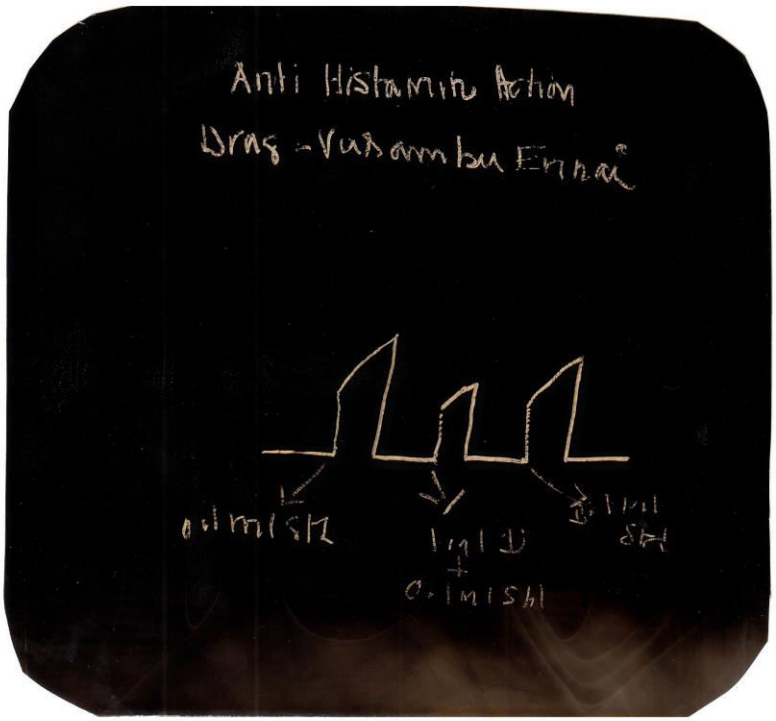
**Procedure:**

A guinea pig weighed about 350gm was starved for 48 hours. It was sacrificed by a blow on the head and external jugular vein was allowed to bleed. The abdomen was then cut and ileum was cut out and placed in a tray which contained warm tyrode solution ($37^0$C) and continuously aerated. The contents of the lumen of the ileum were washed and utmost care was taken to avoid any damage to the gut muscle. An ileum segment having a length of about 3cm was taken and tied in both ends with thread. One end was tied in a 'j' tube and the other end was tied in a frontal lever. The tissue was put in an organ bath and the effect of drug on histamine induced contractions was recorded.

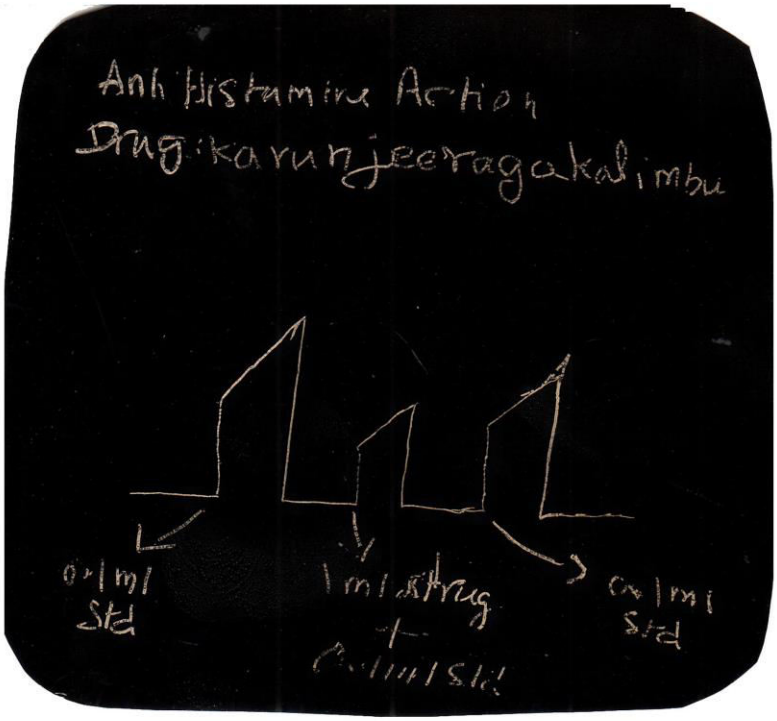
**Inference:**

The drug Vasambu Eannai has **significant** Anti-histamine action.

## ANIT HISTAMINE ACTION ON VASAMBU ENNAI



***ANIT HISTAMINE ACTION ON KARUNJEERAGA KALIMBU***



## ACUTE ANTI-INFLAMMATORY STUDY OF KARUNJEERAGA KALIMBU (Externally) BY HINDPAW METHOD IN ALBINO RATS

**Procedure:**

Anti-inflammatory activity of Sirangu ennai was studied in healthy albino rats.

Six rats were selected and divided into three groups. To the first group distilled water was given and kept as control. The second group was given the standard drug Ibuprofen at a dose of 20mg/ 100gm body weight. The third group was treated with the test drug externally. Before the application of the drug the hindpaw volume of all rats was measured. This was done by dipping the hindpaw upto the tibio dorsal junction in a mercury plethysmography. Subcutaneous injection of 0.1 ml of 1% w/v carrageenin in water was made into plantar surface of both the hindpaw of each rat. Three hours after injection, the hindpaw volume was measured once again. The difference between the initial and final volume would show the amount of inflammation.

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

| Drugs | Dose/100gm of body weight | Initial value | Final value | Mean difference | % Inflammation | % Inhibition |
|---|---|---|---|---|---|---|
| Control (Water) | 2ml | 0.55 | 1.45 | 0.9 | 100 | - |
| Standard (Ibuprofen) | 20mg/2ml | 0.55 | 0.75 | 0.20 | 22.2 | 77.8 |
| Test Drug (Sirangu ennai) | External | 0.5 | 0.87 | 0.37 | 41.0 | 59.0 |

**Inference:**

It is observed that Karunjeeraga Kalimbu has **significant** Acute Anti-inflammatory action.

**GOVERNMENT SIDDHA MEDICAL COLLEGE ANDHOSPITAL**

**BRANCH IV – KUZHANTHAI MARUTHUVAM**

**PALAYAMKOTTAI – 627 002.**

# CASE SHEET PROFORMA FOR SIRANGU

| | | | |
|---|---|---|---|
| Name of the Medical unit: | | Nationality | : |
| I.P. No. | : | Religion | : |
| Bed. No. | : | Date of Admission | : |
| Name | : | Date of Discharge | : |
| Age/ Sex | : | Duration of treatment | : |
| Occupation (Parents) | : | Diagnosis | : |
| Income (parents) | : | Medical Officer | : |
| Informant | : | | |
| Address | : | | |

Complaints and duration :

History of present illness :

History of past illness :

Antenatal History :

Birth and Neonatal History :

Dietetic and Nutritional History :

Developmental History :

Family History :

Social History :

Immunization History :

Contact History :

**General Examination**

1. Consciousness :

2. Decubitus :

3. Anaemia :

4. Jaundice :

5. Cyanosis :

6. Clubbing :

7. Pedal oedema :

8. Lymphadenopathy :

9. Nourishment :

10. Skin changes :

**Vital Signs**

1. Pulse

- Rate :

- Rhythm :

- Volume :

- Character :

2. B.P. :

3. R.R. :

4. Temperature :

**Anthropometry**

1. Wt – Weight :

2. Ht – Height :

3. Mid arm circumference :

4. Head circumference :

5. Chest :

6. Skin fold thickness :

**Siddha System - Clinical Examination:**

**Poripulangal**

Mei :

Vai :

Kaan :

Mookku :

Sevi :

**Kanmendriyam – Kanmavidayam**

Kai :

Kaal :

Vaai :

Eruvaai :

Karuvaai :

**Gunam**

Sathuvam :

Rajo :

Thamo :

**Nilam**

Kurinchi :

Mullai :

Marutham :

Neithal :

Palai :

**Paruva Kaalam**

Kar :

Koothir :

Munpani :

Pinpani :

Elavenil :

Muthuvenil :

**Utkayam – Athakayam**

Puyam :

Sayam :

Kaal :

Paatham :

**Pira Uruppugalin Nilai**

Moolai :

Iruthayam :

Puppusam :

Kalleeral :

Manneeral :

Kudal :

Siruneeragam :

Kuri :

**Mummalam**

Viyarvai :

Malam :

Moothiram :

**Mukkutra Udal**

Vaatha thegi :

Piththa thegi :

Kabha thegi :

Kalappu thegi :

**Udal thathugal:**

**Vaatham**

Piranan :

Abaanan :

Uthaanan :

Viyaanan :

Samaanan :

Naagan :

Koorman :

Kirugaran :

Devathathan :

Dhananjeyan :

**Pitham**

Anilam :

Ranjagam :

Sathagam :

Alosagam :

Pirasagam :

**Kabam**

Avalambagam :

Kiletham :

Pothagam :

Tharpagam

Santhigam :

**Udal Kattugal**

Saaram :

Senneer :

Oon :

Kozhuppu :

Enbu :

Moolai :

Sukkilam/Suronitham :

**Envagai Thervugal**

Naadi :

Sparisam :

Naa :

Niram :

Mozhi :

Vizhi :

Malam :

Moothiram :

**Neerkuri**

Niram :

Manam :

Nurai :

Edai :

Enjal :

**Neikuri :**

**Malakuri**

Niram :

Nurai :

Elagal :

Erugal :

**Clinical Examination of Skin**

Site of the lesion :

Size :

Shape :

General colour of the skin :

Colour of lesion :

Pruritis :

Erythema :

Scaling :

Oozing :

Crusting :

Lichenified :

Hair follicular involvement :

Exudation :

Excoriation :

Ulceration :

Bleeding :

Macule :

Papule :

Pustule :

Nodule :

- wheal :
- Scar :

**Blister**

Vesicle :

Bullae :

Scald like :

Haemorrhage :

**Examination of other systems**

CNS :

CVS :

RS :

Abdomen :

**Lab Investigations**

**1. Blood**

TC :

DC :

Hb :

ESR :

HIV :

VDRL :

Sugar :

Urea :

Cholesterol :

IgE :

**2. Urine**

Albumin :

Sugar :

Deposits :

**3. Motion**

Ova :

Cyst :

RBC :

Pus Cells :

**4. Skin Scrapping :**

**5. Skin clipping :**

**6. Skin biopsy :**

**7. Culture and sensitivity :**

**DIFFERNTIAL DIAGNOSIS :**

**PROGNOSIS :**

**MARUTHUVAMURAI :**

**DAILY PROGRESS :**

**ADVICE**

**GOVERNMENT SIDDHA MEDICAL COLLEGE AND HOSPITAL**

**BRANCH IV – KUZHANTHAI MARUTHUVAM**

**PALAYAMKOTTAI – 627 002.**

**ADMISSION – DISCHARGE SHEET**

Name of the medical unit : Nationality :

I.P.NO : Religion :

Bed No : Informant :

Name : Date of admission :

Age/Sex : Date of Discharge :

Occupation (parents) : No. of days treated :

Income (Parents) : Diagnosis :

| S. No. | Clinical Features | During admission | During discharge |
|---|---|---|---|
| 1. | Itching | | |
| 2. | Burrows | | |
| 3. | Pruritic papules | | |
| 4. | Inflammatory papules | | |
| 5. | Vesicles | | |
| 6. | Pustules | | |

**Place :**

**Date :** **Signature of the Medical Officer**

# GLOSSARY

| | | |
|---|---|---|
| IP | - | In-Patient |
| OP | - | Out-Patient |
| TC | - | Total White blood Corpuscle |
| DC | - | Differential Count |
| P | - | Polymorphs |
| L | - | Lymphocytes |
| E | - | Eosinophils |
| B | - | Basophils |
| M | - | Monocytes |
| ESR | - | Erythrocyte Sedimentation Rate |
| MC | - | Male Child |
| FC | - | Female Child |
| Sec | - | Seconds |
| Mts | - | Minutes |
| Hr | - | Hour |
| Alb | - | Albumin |
| Dep | - | Deposits |

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- Sekhicha Ratna Deepam-C.Kannusamy Pillai.
- Siddha Maruthuvam Sirappu-Dr.Thiyagarajan
- Noi Naadal Noi Muthal Naadal – Part – I- Dr .M.Shanmuga Velu.
- Siddha Maruthuvanga Churukkam- Dr .K.S. Uttamarayan
- Noi illa neeri – Dr.G.Durairajan
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# GOVT. SIDDHA MEDICAL COLLEGE

# PALAYAMKOTTAI

## CERTIFICATE OF MERIT

Certify that Dr. M. SARAVANA KUMAR PG SCHOLAR, DEPT OF KUZHANTHAI MARUTHUVAM FOR ACTIVE PARTICIPATION/~~PRESENTATION~~ IN **"SYMPOSIUM ON ANEMIA"** HELD ON 24th & 25th August 2011.

Dr. D.K. Soundararajan M.D(s).,
Reader
Dept. of Kuzhanthai Maruthuvam

Prof. Dr. N. Chandramohandoss M.D(s).,
Principal I/C
H.O.D
Dept. of Kuzhanthai Maruthuvam

# THE TAMIL NADU Dr. M.G.R. MEDICAL UNIVERSITY

69, Anna Salai, Guindy, Chennai - 32.

## DEPARTMENT OF SIDDHA

# CERTIFICATE OF PARTICIPATION

This is to certify that Dr. M. SARAVANAKUMAR

has participated as ~~Resource Person~~ / Delegate in the Workshop on

**"Research Methodology & Biostatistics"** for AYUSH Post Graduates &

Researchers organized by the Dept. of Siddha from 14-06-10 to 18-06-10

Dr. N. Kabilan
Prof. & Head

Dr. Sudha Seshayyan
Registrar i/c

Dr. Mayil Vahanan Natarajan
Vice-Chancellor

# INSTITUTIONAL ANIMAL ETHICS COMMITTEE (I.A.E.C)

## GOVERNMENT SIDDHA MEDICAL COLLEGE

## PALAYAMKOTTAI

No...../IAEC/GSMC/2011-12 DT 3.05.2011

## CERTIFICATE

This to certify that the project title ..A Study on "SIRANGU" and the drug of choice is "VASAMBU ENNAI" (Int) and KARUNJEERAGA KALIMBU (Ext)

Has been approved by the IAEC on condition basis.

Name of chairman:

Name of Member secretary:

Nominee:

Signature with date:

(Kindly make sure that minutes of the meeting duly signed by all the participants are maintained by office)

# SCREENING COMMITTEE

1. CHAIRMAN

2. MEMBER 1

Screning Committee
Govt. Siddha Medical College Hospital,
Palayamkottai - 627 002.

3. MEMBER 2

Screning Committee
Govt. Siddha Medical College Hospital,
Palayamkottai - 627 002.

4. REMARKS

# வசம்பு எண்ணை
# (உள் மருந்து)

## 1. வசம்பு

## 2. பூண்டு

## 3. அவுரி

## 4. குப்பைமேனி

## 5. கோரோசனம்

## 6. சிற்றாமணக்கு நெய்

# கருஞ்சீரக களிம்பு
# (வெளி மருந்து)

## 1. கருஞ்சீரகம்

## 2. கடுகு

## 3. புங்கம்பட்டை

## 4. துரிசு

## 1. வசம்பு எண்ணை (உள் மருந்து)

## 2. கருஞ்சீரக களிம்பு (வெளி மருந்து)

I.P.NO : 3300
NAME : Krishna
AGE / SEX : 4 / Mc

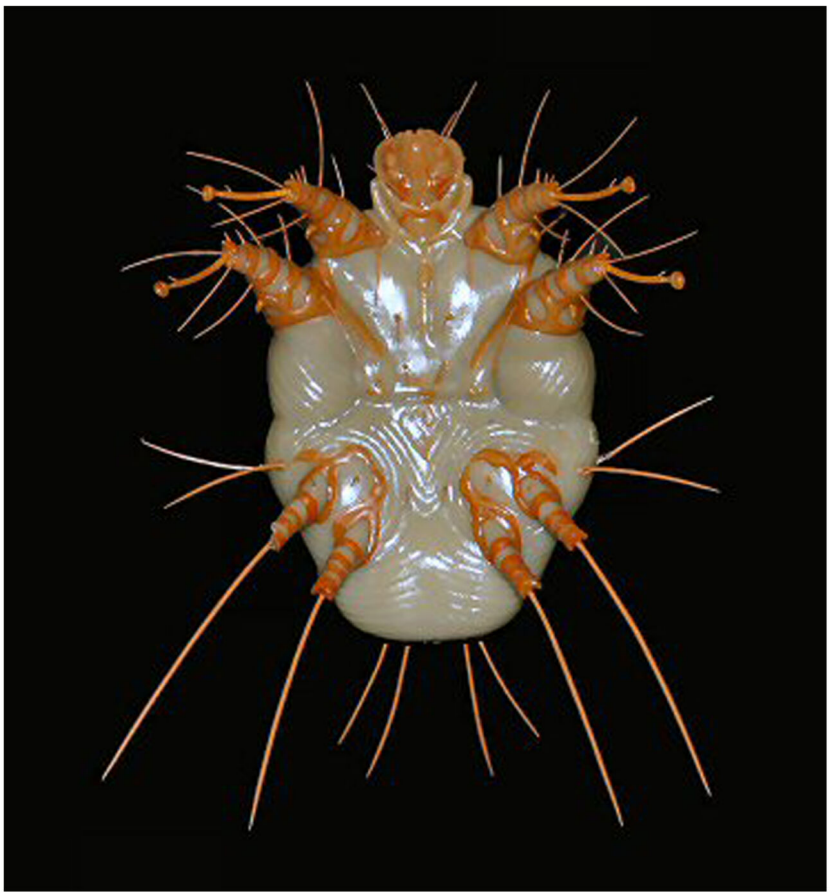
# BEFORE TREATMENT

# AFTER TREATMENT

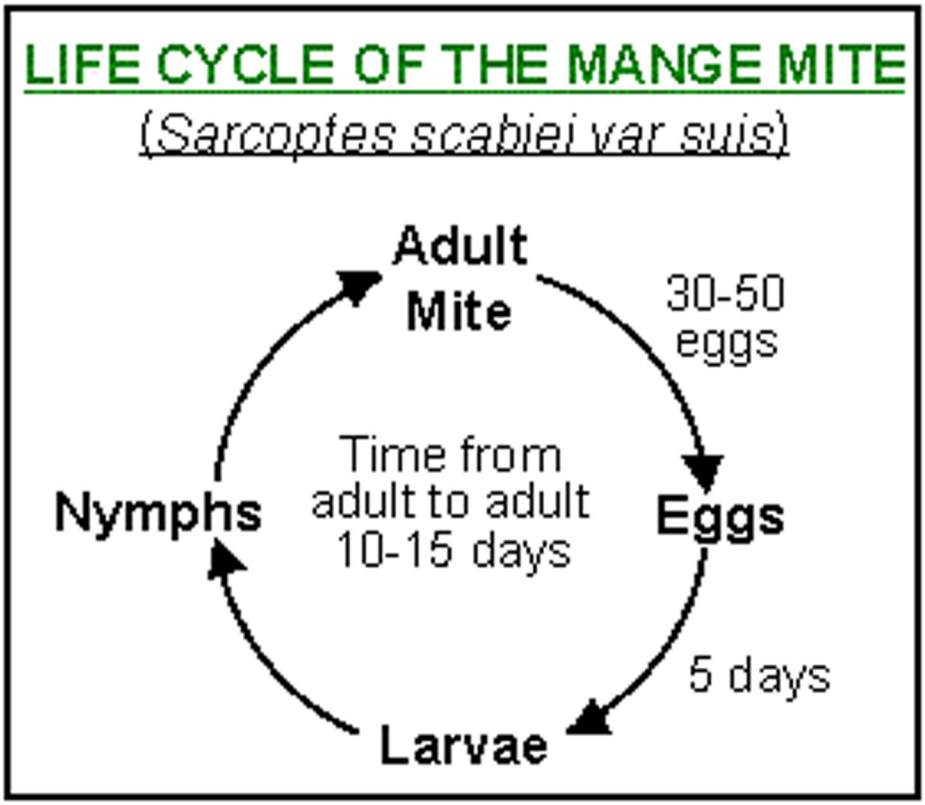
# NODULAR SCABIES

# CRUSTED SCABIES

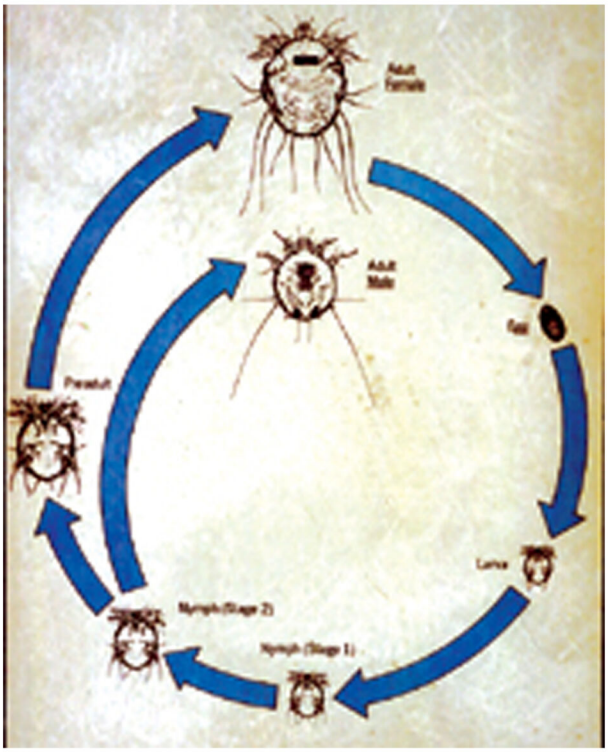
# SARCOPTES SCABIEI



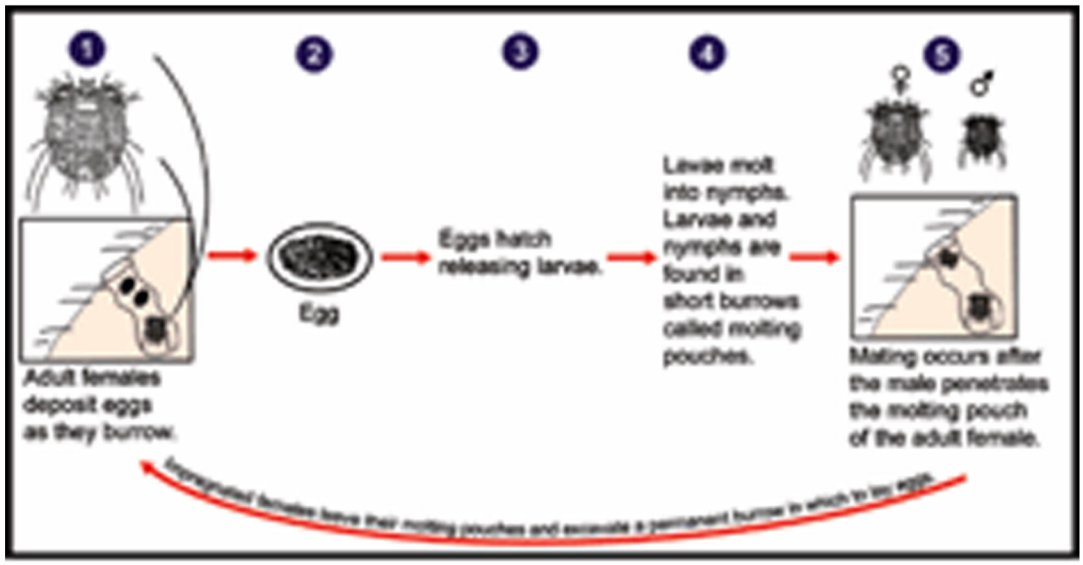
# LIFE CYCLE OF SCABIES MITE



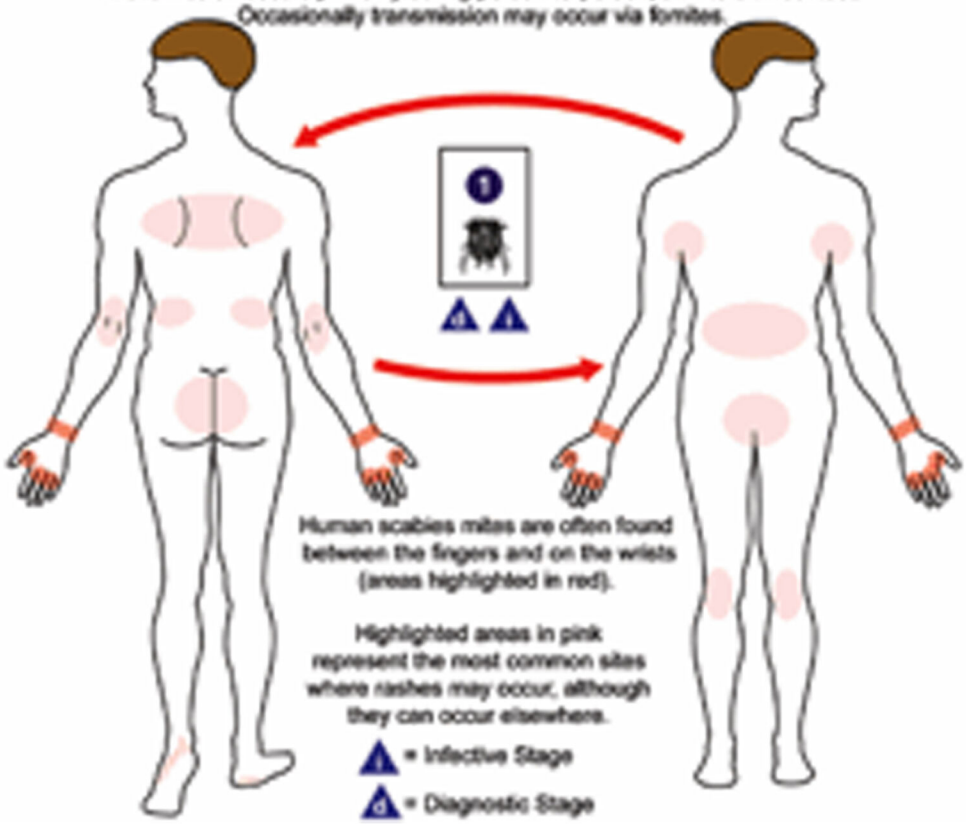

**(Fig.11-15)**



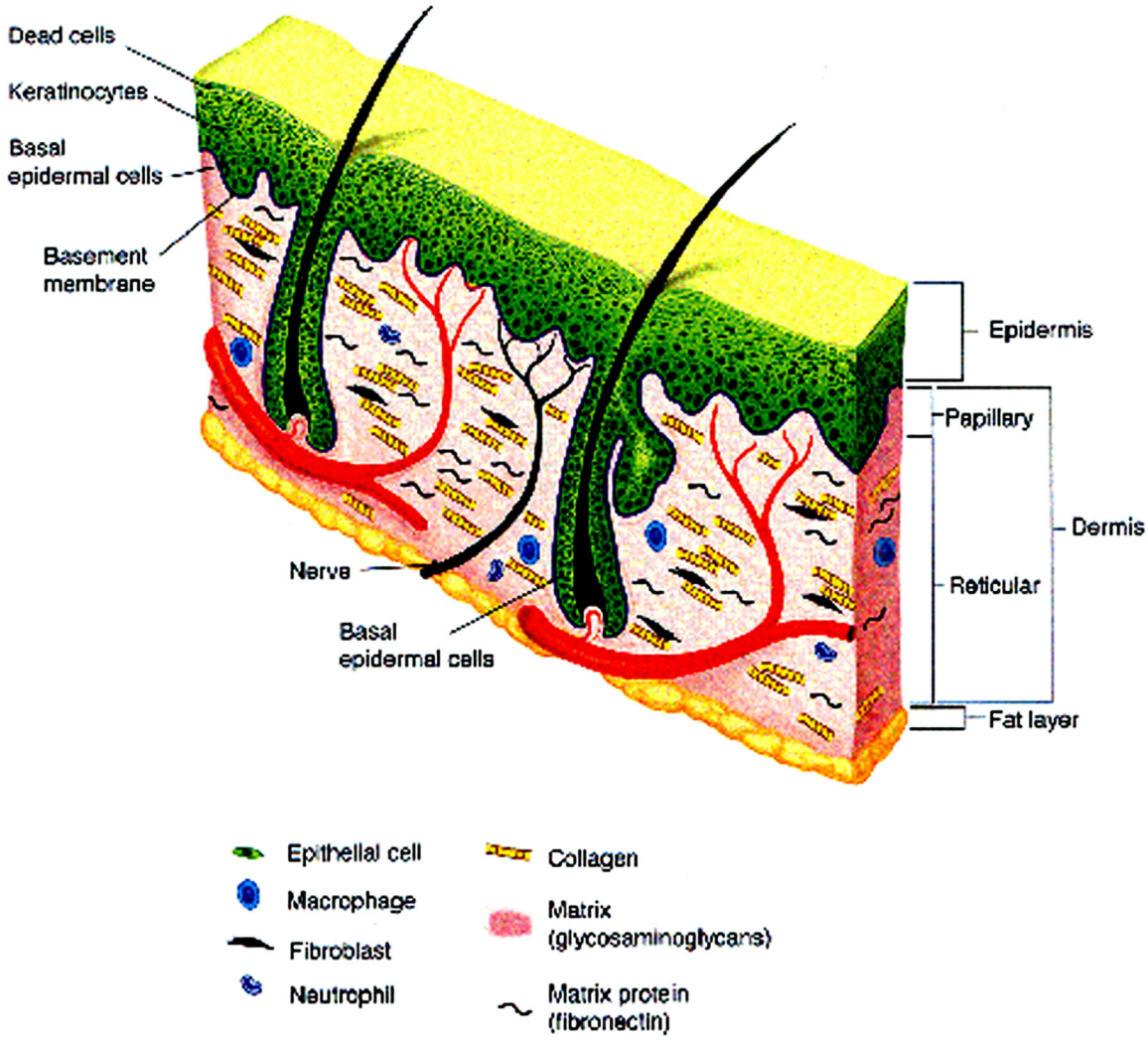
# LIFE CYCLE OF SCABIES MITE & AFFECTED AREA




Transmission occurs primarily during person-to-person, skin-to-skin contact. Occasionally transmission may occur via fomites.



# STRUCTURE OF SKIN ANATOMY



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