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PRECLINICAL & CLINICAL

STUDY ON

VENPULLI

(DISSERTATION SUBJECT)

For the partial fulfillment of the

Requirements to the Degree of

DOCTOR OF MEDICINE (SIDDHA)

BRANCH III – DEPARTMENT OF SIRAPPU MARUTHUVAM

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CERTIFICATE

Certified that I have gone through the dissertation submitted by **Dr. A.SUGANYA, (Reg .NO.32102206)** a student of final M.D(S), Branch-III, Department of **Sirappu Maruthuvam**, **National Institute of Siddha**, Tambaram Sanatorium, Chennai-47, and the dissertation work has been carried out by the individual only. This dissertation does not represent or reproduce the dissertation submitted and approved earlier.

Place: Chennai-47

Date:

Prof. Dr.K.MANICKAVASAKAM,M.D(s).,
Head of the Department, i/c,
Dept. of Sirappu Maruthuvam,
National Institute of Siddha,
Chennai – 600 047.

INTRODUCTION

The history of Siddha medicine is as old as history of Tamil culture and civilization. “Siddha system” is an unique system of medicine because it is both medically and spiritually enriched. Siddha heritage is invaluable as it helps to acquire health for physique, peace for mind and purity for the soul. Siddha System of medicine is considered the oldest documented medical system of the world. Siddhars are those who have attained perfection in yogic practices to ultimately reach the stage of immortality. Siddhars are those who have attained perfection in yogic practice ultimately reach the stage of immortality. In Siddha system of medicine the total number of diseases are said to be 4448 but the sub classification methodology and enumeration differ from one source to another. However, the classification of the majority of these diseases is either based on clinical symptoms or vitiation of humor. Further they have been sub-classified on the basis of the predominant symptoms, affected organs and etiological factors.

Venpulli is also called ‘Suvetha kuttam’ which is one of the 18 varieties of skin disorders, under kuttam noted in Yugi Chinthamani. The Siddhars were further the greatest scientists in ancient times. They were men of highly cultured intellectual and spiritual faculties combined with super nature powers.

People with Venpulli (Vitiligo) develop white spots in the skin that vary in size and location. The spots occur when pigment cells, melanocytes, are destroyed and the pigment melanin can no longer be produced. Melanocytes normally occur throughout the skin, and in the hair follicles, mouth, eyes, and some parts of the central nervous system. Regarding Venpulli, there are many misgivings about this diseases in the minds of the public

It is still a wrong notion of the people that it is contagious and it will lead to Hansen’s diseases because of the name Venkuttam and also believe that it is due to sin and karma.

So the author decided to use form ‘Venpulli’ instead of Venkuttam for this study. The depigmentation disorder affecting 0.5 - 1% of the world population. In India 0.25% - 2.5% of populations are affected. These people may have difficulties in finding partners and also in making a successful carrier professions.

The clinical signs of Vitiligo are correlated with Venpulli or Venpadai in Siddha system of medicine. Venpulli is a great handicap in the society why because it is visible and one of the cosmetic problem also. People with Venpulli (Vitiligo) develop white spots in the

skin that vary in size and location. The spots occur when pigment cells, or melanocytes, are destroyed and the pigment melanin can no longer be produced. Considerable number of cases visited opd for the treatment of Venpulli at Ayothidoss pandithar hospital.

In the present study the author has taken the Siddha formulations *Yaanai Nerunjil Chooranam* as internal medicine (Reference: Pathartha Guna Vilakkam) and *Pathiyaa Lebanam* as external medicine (Reference: Agathiyar Vaithiya Pillai Tamil). These drugs are indicated for Venpulli noi and their efficacy is not proven till now. These formulations are made by easily available herbs in rural India. Hence the author has chosen the above drugs to evaluate its therapeutic efficacy in treating Venpulli Noi. Apart from the trial drugs the efficacy of Yogam in the treatment of Venpulli noi is also studied.

AIM AND OBJECTIVES

Primary aim and objective:

- To study the efficacy of "**Yaanai Nerunjil Chooranam**" (Internal medicine) and "**Pathiyaa Lebanam**" (External medicine) in producing repigmentation and reducing the size of the depigmented patches in the treatment of "**Venpulli**" (Vitiligo).

Secondary objectives:

- To study the effectiveness of Yogam (Postures and Pranayamam techniques), along with the efficacy of "Yaanai Nerunjil Chooranam" (Internal medicine) and "Pathiyaa Lebanam" (External medicine) in the treatment of Venpulli (Vitiligo).
- To study Venpulli on the basis of Siddha parameters, in order to evaluate the pathology.
- To access the predominance of the disease related to age, sex, socio-economic status, habits, family history etc.
- To correlate the aetiology, clinical features, symptoms and signs of Venpulli in Siddha system to Vitiligo in Modern science.
- To evaluate toxicity of the trial drug in animal models to prove the safety of the drug.
- To do biochemical analysis of the internal drug.
- To find out any side effect/adverse effect during the trial.

REVIEW OF LITERATURE

SIDDHA ASPECTS

VENPULLI

Synonyms:

Venkuttam, Suvetha Kuttam, Venthittu, Venpadai.

Definition:

Venpulli is defined as the discoloration of the skin characterized by the presence of the de-pigmented patches of irregular shape in the epidermis of skin and sometimes hair also involved.

Siddhar Yugimuni, mentioned this condition as Suvetha Kuttam in the text "Yugimuni Vaithiya Chinthamani – 800" which is one among the Eighteen types of Kuttam.

"தடிப்பாக தவளநிறம் போல்வெ ளுத்துச்
சர்வாங்கமும் வெளுத்தாற் றான்றி ரும்பும்
மடிப்பாக மயிர்வெளுத்தா லசாத்ய மாகும்
வரிவுதடு வுள்ளங்கைக் குதங் குய்யந்தான்
நெடிப்பாக நெருப்புப்பட்டது போல புண்ணாய்
நிறமிருந்தா லசாத்தியமென்றே யுரக்க லாகும்
வெடிப்பாக மேனியெல்லாம் வெளுத்து வீங்கில்
வெண்சுவேத குட்டமென்றே விளம்ப லாமே."

- யூகி முனி வைத்திய சிந்தாமணி 800

Aetiology:

Siddha system attributes the aetiology of the disease to heredity, stress and strain, malnutrition and venereal exposure. No specific causes were mentioned for Venpulli but general descriptions have been given. Extrinsic and intrinsic causes have been attributed to the manifestation of Venpulli.

1) According to "Yugimuni Vaithiya Chinthamani – 800" the causes for the 18 types of Kuttam are mentioned as:

"விளம்பவே மிகுந்தஉஷ் ணந்தன் னாலும்
மிகுந்த சீதளத்தாலு மழற்சி யாலும்
வளம்பவே மந்தத்தால் வாந்தி யாலும்
மகத்தான பெண்ணோடு மருவ லாலும்

கிளம்பவே கிலேசங்கள் மிகுத லாலும்
கெடியான வுரக்கங்கள டைத லாலும்
தளம்பவே மயிருகற்கள் தவிடு மண்கள்
சாதத்திற் பருகலால் மிகுக்குங் குஷ்டம்

குட்டந்தான் பதினெட்டு வரவே தென்னிற்
குருநிந்தை சிவநிந்தை மறையோர் நிந்தை
திட்டந்தான் தேவதையைத் தூஷணைக்கு ரோதம்
செப்பலாற் றிருடலாற் பரதா ரத்தை
அட்டந்தா னாசையால டைக்க லத்தை
அபகரித்த லகதிபர தேசி தன்னை
வட்டந்தான் வைதலாற் கற்ப ழித்தல்
வந்திடுமே பதினெட்டுக் குட்டந் தானே"

Excessive heat and cold exposure, lazziness, sleep in day time, unbridled sexual indulgence, robbery etc. These habits are supposed to be the factors, which lower the immune mechanism of the body (Udal vanmai) and makes the body liable for the disease.

Excessive intake of food which are hard to digest, frequent intake of food mixed with fragments of stone and hair, prolonged mental depression, intention to spoil others, raping, greedy, abusing god and noble people, neglecting refuges and beggars, cursing the elders are said to the causes for this condition.

2) According to "Agathiyar Vaithyam"

"குயல்வாய் குஷ்டம் சயங்குன்ம நீரிழிவு சுரக்கிராணி
நீரடைப்பு பாண்டு மூல வாய்வு
கயல் வாயு வருங்கண்ணில் குத்தாய் கடிந்த தசவாய்வு
காணவாக முன் செய்த உயிர்களும் வினைதானே".

Kuttam may be hereditary, apart from all other etiological factors Kuttam is also considered to be followed by sins committed in the previous birth (Kanma vinai).

3) According to "Siddha Maruthuvam Sirappu"

The aetiology and the characters of Venpulli are clearly explained in the text **"**Siddha Maruthuvam Sirappu**"** as follows:

In the affected area, reduction or total loss of skin pigment melanin on the epidermis is observed. As the distinct aetiology is not known, there exist certain beliefs and hypothesis about the disease. They are: 1.Constant irritation to the skin owing to clothes, rubber, plastics or other chemical substances. 2. Some essential metal or mineral deficiency in the food

4) According to "Thirumoolar Karukkadai Vaithiya Nool"

"வியாதியுண் மூவாறு விளங்கிய குட்டங்கேள்
சுயாதிக் கிரந்தி சுழன் மேகத்தாலாறும்
பயாதி மண்ணுளப் பலவண்டினா லெட்டும்
நியாதி புழுநாலாய் நின்றதிக் குட்டமே".

Among the Eighteen types of Kuttam six are caused by Kirandhi and Megam. Eight types are caused by insects in the soil and the remaining four types are caused by Worms.

Classification:

1) According to "Yugimuni Vaithiya Chinthamani – 800"

In "Yugimuni Vaithiya Chinthamani – 800", Kuttam is classified into 18 types. Suvetha Kuttam (Venpadai) is one among them. It is mentioned as below:

"முத்தாகுங் குட்டந்தான் பதினெட் டுக்கும்
முனியான யூகிநான் சொல்லக் கேளாய்
புத்தாகும் புண்டரீக குட்டத் தோடு
பொருகின்ற விற்போடக குஷ்ட மாகும்
பத்தாகும் பரமகுஷ்டம் கேசர குஷ்டம்
பரிவான கர்ணகுட்டம் சிகும குட்டம்
கித்தாகுங் கிருஷ்ணகுட்ட அதுவும்பர் குட்டம்
கெடியான மண்டலகுட் டமுமா மென்னே
குட்டமாம் பரப்பரிச குட்ட மொடு
குடிலமாம் விகர்ச்சீக குட்ட மாகும்
வட்டமாம் வையாதி குட்ட மோடு
மருவலாங் கிடீபகுட்டஞ் சர்ம தேவம்
திட்டமா தேத்திருக் குட்ட மோடு
சித்துமா குட்டஞ்சா காறுகுட்டம்
துட்டமாஞ் சுவேதகுட்டந் தன்னோ டொக்கச்
சுயம்பான பதினெட்டு குட்ட மாச்சே"

1.Pundarega Kuttam	(Padar thamarai Peru Noi)
2.Virpotaka Kuttam	(Koppula Peru Noi)
3.Baama Kuttam	(Sirangu Peru Noi)
4.Gaja Saruma Kuttam	(Yaanaithol Peru Noi, Yaega Saruma Kuttam)
5.Karna Kuttam	(Kaathu Peru Noi)
6.Sigura Kuttam	(Thol Peru Noi)
7.Krishna Kuttam	(Karu Peru Noi)
8.Avudhumbara Kuttam	(Atthikkaai Peru Noi)
9.Mandala Kuttam	(Valaiya Peru Noi)
10.Abarisa Kuttam	(Vali Peru Noi)
11.Visarchika Kuttam	(Sori Peru Noi)
12.Vibaathika Kuttam	(Sempadai, Senkuttam)
13.Kideeba Kuttam	(Pandrithol Peru Noi)
14.Sarmathala Kuttam	(Tholvedi Peru Noi)
15.Thethru Kuttam	(Thadippu Peru Noi)
16.Sithuma Kuttam	(Naa Peru Noi)
17.Sathaaru Kuttam	(Purai Peru Noi)
18.Suvetha kuttam	(Venpadai, Venkuttam, Ven Peru Noi).

2) According to "Siddha Maruthuvam Sirappu"

According to "Siddha Maruthuvam Sirappu", Venpulli has been classified into 4 types:

1. Vaatha Venpadai
2. Pitha Venpadai
3. Kaba Venpadai
4. Mega Venpadai.

3) According to "Siddhar Aruvai Maruthuvam" and "Anubava Vaithiya Deva Ragasiyam"

Venpadai has been classified into 3 types on the basis of Mukkutram. They are,

1. Vaatha Venpadai
2. Pitha Venpadai
3. Kaba Venpadai.

4) According to "Athma Rakthamirutha Vaithiya Sarasankiraham"

Kuttam is classified into 4 types:

1. Venkuttam
2. Senkuttam
3. Karunkuttam
4. Peru viyathi.

5) According to "Pararasa Sekaram"

Kuttam is classified into 5 types:

1. Venkuttam
2. Senkuttam
3. Karunkuttam
4. Vishakuttam
5. Azhukannikuttam

Clinical features:

1) According to "Yugimuni Vaithiya Chinthamani – 800"

Yugimuni shortly attributed the Venpadai under the headline of Suvetha Kuttam which is one of the Eighteen kuttams and he mentioned the clinical features of Suvetha kuttam as below:

"தடிப்பாக தவளநிறம் போல்வெ ளுத்துச்
சர்வாங்கமும் வெளுத்தாற் றான்றி ரும்பும்
மடிப்பாக மயிர்வெளுத்தா லசாத்ய மாகும்
வரிவுதடு வுள்ளங்கைக் குதங் குய்யந்தான்
நெடிப்பாக நெருப்புப்பட்டது போல புண்ணாய்
நிறமிருந்தா லசாத்தியமென்றே யுரைக்க லாகும்
வெடிப்பாக மேனியெல்லாம் வெளுத்து வீங்கில்
வெண்சுவேத குட்டமென்றே விளம்ப லாமே."

Yugimuni gives a clear definition of Venpadai and he mentioned the conditions which will not responded to treatment (Asathiyam) as said below:

1. Whitish discoloration of the part of the body or entire body. Sometimes hair also turns white.

2. When white patches occur on the palms or muco-cutaneous junctions like lips, anus and genitals, it is said to be rarely curable.
3. If the hair becomes white, prognosis will be very bad.
4. Fissured body becomes oedematous.

2) According to "Siddha Maruthuvam Sirappu"

In the text 'Siddha Maruthuvam Sirappu', Venpadai has been classified into 4 types and the clinical features are also described:

I. Vaatham Venpadai
II. Pitha Venpadai
III. Kaba Venpadai
IV. Mega Venpadai.

I. Vaatham Venpadai:

It is characterized by the presence of depigmented patches, which are dry, rough and reddish or somewhat pale-black in color.

II. Pitha Venpadai:

It is characterized by the presence of depigmented patches red in color like the flower of thamarai (lotus flower), spreading with burning sensation and loss of hairs on that area.

III. Kaba Venpadai:

It is characterized by the presence of depigmented patches white in color like the flower of Thumbai (Leucas aspera), spreading with itching sensation and mild elevation of the lesion.

IV. Mega Venpadai:

It is followed by venereal diseases. It may develop in 4 to 6 months after the venereal exposure. This Venpadai develops initially in the nape and the adjoining spaces. It then gradually spreads to involve the shoulder joints and back of the trunk.

Clinical features: Depigmented patches are small in number, pale in colour or light turmeric in colour or dark colour and margins marked by hyperpigmention. These lesions are circumscribed with 2 mm to 3 mm diameter or above. This correct picture of depigmented and hyperpigmented skin seems to be more or less a multi eyed filter (sieve like).

Females are more prone to this Mega Venpadai and the treatment takes longer period. Therefore drugs to be given for the treatment of Mega noi (Venereal disease) before treating Venpadai.

Siddha Pathology:

As per Siddha system, the human body is composed of 96 Thaththuvams (constituent principle in nature including Panchaboothams and Three Thodams).

The Siddha system of Medicine is based on the Thrithodam theory. They are Vaatham, Pitham Kabam; the manifestations of all diseases are the result of derangement of these Uyir thathus (Thrithodam).

These three humours are primary and essential factors of human body. These factors exist in 1: ½: ¼ ratio respectively in the normal body and this humoural existence is responsible for the proper functioning of the body. Any alteration in the above ratio can cause disease in the body like, Vaatham disease, Pitham disease and Kabam disease.

- According to Siddha literature, equilibrium of Vaatham, Pitham and Kabam is responsible for the normal color and texture of skin by the way of equilibrium of black, yellow and white colour.

According to Noi Naadal Noi Mudhlal Naadal thirattu, Pitham kurai kunam and Senneer kurai kunam result in loss of color and shining of skin.

- Pitham is responsible for the yellow/ red colour of skin. Pitham kurai kunam leads to Ranjaga kuraivu, Prasaga kuraivu and senneer kuraivu. Decreased Ranjagam, Pirasagam, and Senneer results in hypo/ depigmentation of skin.
- According to Theraiyar Pinikalin Mudhar Kaaranam, “without variation in Vaatham, body will not be affected”. Owing to defective food habits, Vaatham gets vitiated and affects body fluids, blood and other body parts and alters the complexion.

‘Vaathamalaathu meni kedaathu’

-Theran.

Prognosis of the disease:

The prognosis of the disease is also mentioned in Siddha literature:

1) According to the text "Yugimuni Vaithiya Chinthamani – 800"

curable types - 10:

"குட்டந்தான் பதினெட்டில் சாத்தி யந்தான்
கூறக்கேள் விற்போடக பரமற் குட்டம்
கிட்டந்தான் கேச்சர்ம குட்ட மோடு
கிருஷ்ண குட்டமவுதம்ப ரகுட்டந் தானும்
திட்டமாந் தேத்திருக் குட்ட மோடு
செயசித்து மாகுட்டங் கிடீப குட்டம்
தட்டந்தான் மிகுந்தசா தாரு குட்டம்
சமகிருஷ்ண குட்டம் சாத் தியமா மென்னே"

1. Virpodaga Kuttam
2. Baama Kuttam
3. Gaja Sarma Kuttam
4. Krishna Kuttam
5. Avuthumbara Kuttam
6. Thethru Kuttam
7. Sithuma Kuttam
8. Kideepa Kuttam
9. Satharu Kuttam
10. Sarmathala Kuttam

Incurable Types - 8:

"ஆமென்ற பத்துந்தான் சாத்ய மாகும்
அசாத்ய மதுதானெட்டு அறிந்து பாரு
போமென்ற பூர்வத்தின் கன்மத் தாலும்
புவிதனக் கும்மிகுகன்மஞ் செய்த பாவம்
பாமென்ற பெரியோர்கள் சாபத் தாலும்
பாதகங்கள் மனதறியப் பண்ணும் பேர்க்கும்
கோமென்ற குட்டமாம் ரோகம் வந்து
கூடுமென்று யூகிமுனி கூறினேனே".

1. Pundareega Kuttam
2. Karna Kuttam
3. Sigura Kuttam
4. Mandala Kuttam
5. Abarisa Kuttam
6. Visarchiga Kuttam
7. Vibaathiga Kuttam
8. Suvetha Kuttam

2) According to the text "Siddha Maruthuvam Sirappu"

Curable conditions in Venpadai are:

- Lesions without any change in hair colour.
- Lesions without coarse texture.
- Lesions that are not appearing like white burnt scar.

Incurable conditions in Venpadai are:

- Lesions with whitened hair.
- Lesions feeling rough.
- Lesion appearing like white burnt scar.
- If the lesion first appears on genitalia, anus, palms and lips.
- Lesions of fast spreading nature.

Management in Siddha:

"மிகினும் குறையினும் நோய்செய்யும் நூலோர்
வளிமுதலா வெண்ணிய மூன்று".

-திருக்குறள்.

According to Siddha System, the main aim of the treatment is to cure Udarpini (physical illness) and manappini (mental illness). Treatment is not only for complete healing but also for the prevention and rejuvenation.

In Siddha system, the line of treatment consists of

1. Neekkam (Treatment)
2. Niraivu (Rejuvenation of well being)
3. Kaappu (Prevention)

1. Neekkam (Treatment):

Siddha system of Medicine is based on Mukkutram Theory and hence the treatment is mainly aimed to bring the Three Thodams to equilibrium state and thereby restoring the physiological condition of the Seven Thathukkal.

The Three Thodams organize, regularize and integrate the bodily structure and their functions. They are always kept in a state of balance by thought, word, deed and food. Any imbalance will lead to disease. The imbalanced Thodams are balanced by administrating purgatives or emetics or application of Anjanam (application on eyes) and followed by the appropriate systemic therapy by giving Siddha drugs. It mentioned as below:

"விரேசனத்தால் வாதந் தாழும்".

The purgatives should be given before starting the trial to normalize the deranged thodams to normal. In this study the purgation is induced by giving karudan kizhangu ennai - 5 ml early morning with hot water.

Then the next day onwards the trial drugs Yaanai Nerunjil Choornam (Internally) Pathiyaa Lebanam(Externally) were given.

2. Niraivu (Rejuvenation):

Physical, psychological, social and economic rehabilitation and reassurance of individuals is known as Niraivu.

3. Kaappu (Prevention):

As per Siddha science, even at the time of conception some defects may occur in the fertilized embryo forming the basic for the manifestation of certain constitutional diseases after birth. These are known as Kanma vinaigal.

Kanma Neekkam (Expiation): To prevent and expiate the misdeeds of the kanmam, planting of trees, establishing gardens, laying roads and pathways, digging wells and ponds for public use, constructing temples, donating ornaments to poor children must be done.

Dietary Advice:

In Siddha system of medicine the importance of dietary habits also emphasiszed for the diseases management and prevention. This line is well understood in these verses,

"உணவே மருந்து மருந்தே உணவு".

"மருந்தென வேண்டாவாம் யாக்கைக்கு அருந்தியது
அற்றது போற்றி உணின்".

In diseased condition diet restrictions or paththiyam are strictly followed to increase the effectiveness of medicine and to reduce the incidence of the diseases. This is given in the following verse,

"பத்தியத்தினாலே பலன் உண்டாகும் மருந்து
பத்தியங்கள் போனால் பலன்போகும் - பத்தியத்தில்
பத்தியமே வெற்றிதரும் பண்டிதர்க்கு ஆதலினால்
பத்தியமே உத்தியென்று பார்"

- தேரையர் வெண்பா.

Dietary and other restrictions for Venpulli patients:

Diet restrictions or pathiyam should be strictly followed in Venpulli patients. These are prescribed to normalize the deranged Thodam and to increase the potency of the drugs. Patients are a

Patients are strictly advised to follow the dietary and other restrictions:

- Avoid all non-vegetarian foods except goat's meat.
- Avoid food items which are enriched with alcohol.
- Avoid the Sesban, Brinjal, Kaar arisi, Green plantain, Bitter gourd, Pickles, Tamarind.
- Vitamin C rich fruits and vegetables like lemon, goose-berry, orange, etc. Vitamin C must be avoided in diet, since in the formation of melanin, tyrosine plays an important role. But in the metabolic pathway of tyrosine a metabolic error happens due to increased presence of vitamin C (Ascorbic acid). If this error occurs continuously the tyrosine cannot be absorbed by the body and is execrated through urine.
- To avoid substances allergic to the particular individual.

- To take Thiridhoda samapporulkal (elam, manjal, seeragam, kaayam, chukku, venthayam, poondu, milagu).
- To take vegetables and green leafy vegetables
- To take more germinated grams, dates, figs and powder of fenugreek regularly.
- Using of soaps and detergents should be avoided. To take neutral value pH soaps for bath purpose.
- To use Nalunguma a Siddha herbal preparation which contains sandanam, vetti ver, vilamacham ver, kichili kizhangu, karbogi, paasipayiru instead of soap and other detergents for bath.

Special treatments:

In Venpulli, patients are advised to do Pranayamam, Dhyanam and Asanams for speedy cure and prevention of recurrences.

1) Yogasanam (Posture):

Asanam is defined as keeping the body or part of the body steady and motionless in a particular posture for a specific time. Regular practice of asanam maintains both physical and mental health.

The specific asanams which are advised to the Venpulli patients are:

1. Kiriya Gnayiru Vanakkam, (Kiriya Pose of Sun Salutation)
2. Meditative postures,
    - Thamarai Asanam (Padmasanam)
    - Mandi Uruthi Asanam (Vajrasanam)
3. Shanthi Asanam (Savasanam).

The asanams advised to Venpadai patients with thyroid disorders are:

1. Meenasanam (Machasanam)
2. Sarvangasanam.

2) Pranayamam (breathing technique):

It is a form of Kayakalpam method and by practicing this, one can prevent many diseases. This is mentioned in the verse as:

"ஏற்றி இறக்கி இருகாலும் பூரிக்கும்

காற்றைப் பிடிக்கும் கணக்கறி வாரில்லை

காற்றைப் பிடிக்கும் கணக்கறி வாளர்க்கு

கூற்றை உதைக்கும் குறியது வாமே".

- **திருமந்திரம்.**

The pranayamam techniques advised for Venpulli patients are:

1. Mathrika Pranayamam,
2. Omkhara Pranayamam,
3. Nithirai Pranayamam.

These techniques are very helpful to relieve the stress and strain of the patients. Also it increases alertness, memory and maintains a clear mind.

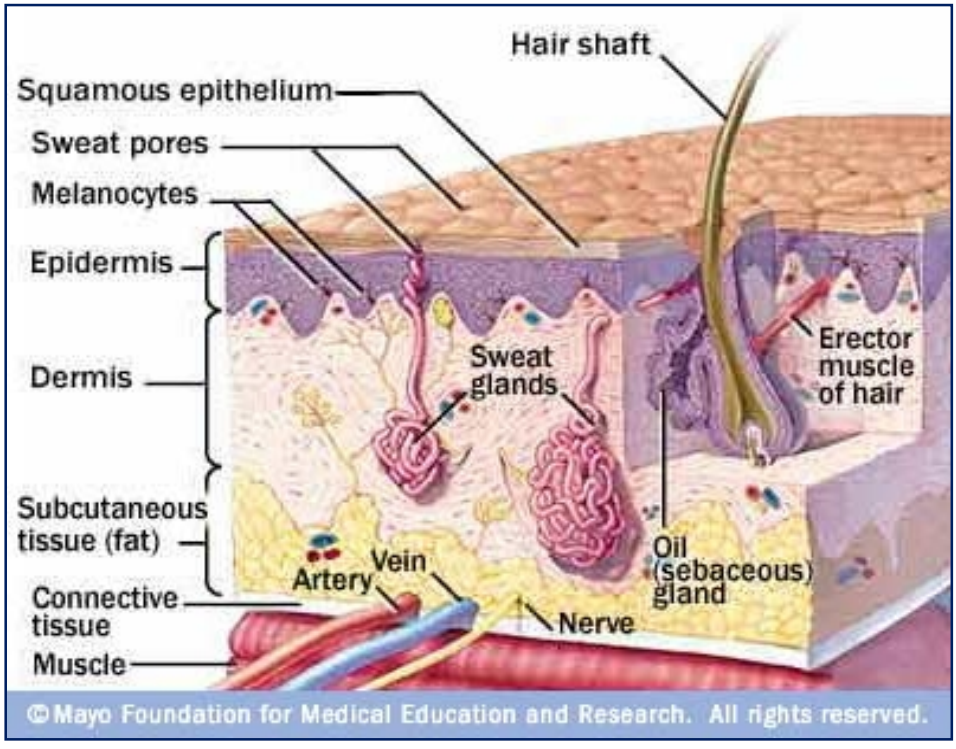
MODERN ASPECTS

Skin Anatomy

The human skin is the outer covering of the body and is continuous with the mucous membranes in the region of the mouth, nose, urogenital organs and the anus. In an adult the skin surface measures 1.5. to 2 m^2 while the thickness of the skin varies from fractions of a millimeter to 4 mm. The thickness of the epidermis varies from 0.06-0.9 mm to 0.5 – 0.6 mm. The thickness of the subcutaneous fat varies considerably. Some area is devoid of fat while in others (on the abdomen and gluteal regions). It is several centimeters thick. The mass of skin an adult accounts for approximately 5% while together with the subcutaneous fat for about 10 to 17.7% of the total body mass.

The colour of the skin may change because the amount of the pigment in it varies under the effects of external and internal factors.

The skin surface is covered with hairs over a great area. The areas devoid of hairs are the lips, the palms and soles, the palmar surface of the hand and the plantar surface of the toes, the glans penis, the inner surface of the prepuce and the inner surface of the labia marjoram and minorum.



Anatomy of skin (Cross section)

Facts about the skin:

The skin and external nucleus membranes separate the human organism from the environment and accomplish a variety of functions. Normal functioning of the skin and its appendages of high significance for the organism activity as a whole and has a positive influence on its general condition.

Skin Histology

The skin develops from two germinative zones. The ectoderm which is represented by the epidermis (the most superficial skin layer) and the mesoderm (the middle embryonal layer) represented by two layers namely the true skin, or dermis (the middle layer) and the subcutaneous fat or hypoderm the deepest skin layer.

The boundary between the epidermis and dermis and dermis forms a wavy line because of the presence of skin papillar (special out growth on the surface of the true skin). The spaces between which are filled with epithelial processes.

Specialized Epidermal Cells

There are three types of specialized cells in the epidermis

- The melanocyte produces pigment (melanin)
- The Langerhans' cell is the frontline defence of the immune system in the skin
- The Merkel's cell's function is not clearly known

Epidermis

The epidermis is the most superficial layer of the skin and provides the first barrier of protection from the invasion of foreign substances into the body. The principal cell of the epidermis is called a keratinocyte.

The epidermis is subdivided into five layers or strata,

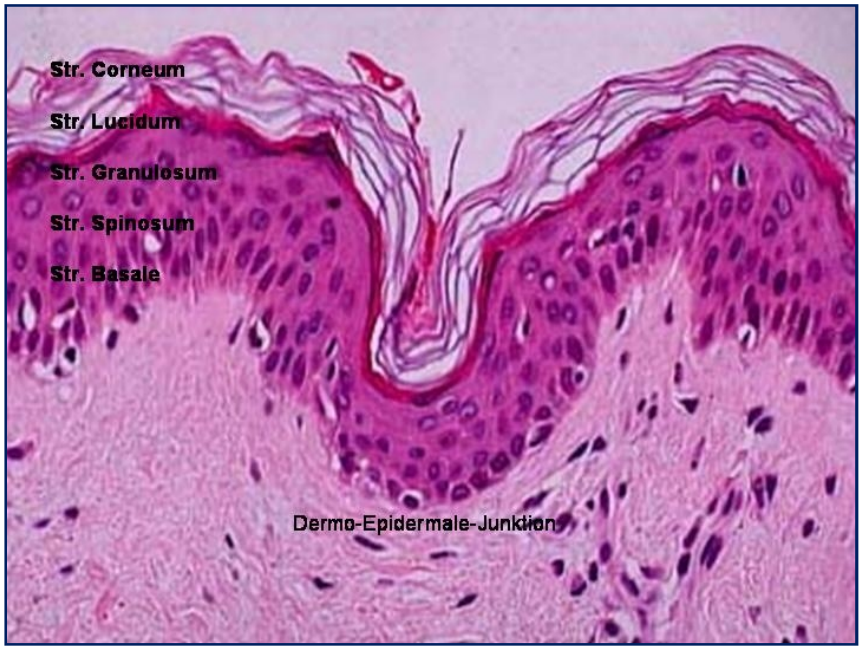
The stratum germinativum ,

The stratum spinosum,

The stratum granulosum,

The stratum lucidum and

The stratum corneum in which a keratinocyte gradually migrates to the surface and is sloughed off in a process called desquamation.



Stratum germinativum

The whole of the epidermis germinates from this layer hence the name stratum germinativum.These germinal cells are separated from the dermis by a thin layer of basement membrane. After a mitotic division a newly formed cell will undergo a progressive maturation called keratinization as it migrates to the surface.

Stratum spinosum

The cells that divide in the statum germinativum soon begin to accumulate many desmosomes on their outer surface which provide the characteristic “prickles” (seen on the close-up view) of the stratum spinosum, which is often called the prickle-cell layer.

Stratum granulosum

The progressive maturation of a keratinocyte is charcterized by the accumulation of keratin, called keratinization. The cells of the stratum granulosum accumlate dense basophilic keratohyalin granules (seen on the close-up view). These granules contain lipids, which along with the desmosomal connections, help to form a waterproof barrier that functions to prevent fluid loss from the body. The cells that divide in the statum germinativum soon begin to accumulate many desmosomes on their outer surface which provide the characteristic “prickles” (seen on the close-up view) of the stratum spinosum, which is often called the prickle-cell layer.

Stratum Lucidum

Epidermis varies in thickness throughout the body depending mainly on frictional forces and is thickest on the palms of the hands and soles of the feet. The stratum lucidum is normally only well seen in thick epidermis and represents a transition from the stratum granulosum to the stratum corneum.

Stratum corneum

As a cell accumulates keratinohyalin granules, it is thought that rupture of lysosomal membranes release lysosomal enzymes that eventually cause cell death. The dead and dying cells filled with mature keratin form the stratum corneum. The deeper cells of the stratum corneum retain their desmosomal junctions, but as they are pushed to the surface by newly forming cells of the stratum germinativum, the dead cells gradually break apart and are lost, a process called desquamation.

Dermis

The dermis assumes the important functions of thermoregulation and supports the vasular network to supply the avascular epidermis with nutrients. The dermis is typically subdivided into two zones, a papillary dermis and a reticular layer. The dermis contains mostly fibroblasts which are responsible for secreting collagen, elastin and ground substance that give the support and elasticity of the skin. Also present are immune cells that are involved in defence against foreign invaders passing through the epidermis.

Papillary dermis

The papillary dermis contains vascular networks that have two important functions. The first, to support the avascular epidermis with vital nutrients and secondly to provide a network for thermoregulation. The vasculature is organized so that by increasing or decreasing blood flow, heat can either be conserved or dissipated. The vasculature interdigitates in areas called dermal papillae. The papillary dermis also contains the free sensory nerve endings and structures called Meissner's corpuscles.

Vascular system of Skin:

Vascular system of the skin is formed of several networks of blood vessels. Large arterial vessels stretch from the fascia through the subcutaneous fat and give off small branches to the fat lobules. On the boundary of the dermis and hypoderm, they divide into branches which stretch horizontally and anastomose with one another. A deep arterial plexus

of skin forms, which gives rise to branches supplying the holes of the sweat glands, the hair follicles and the fat lobules. The epidermis is devoid of blood vessels. The most powerful network of blood vessels is located in the skin of the face, palms, soles, lips, genitals and in the skin around the anus.

Lymphatic system of the Skin:

The lymphatic system of the skin forms a superficial and deep network. The superficial lymphatic network arises on the papillary layer as blind rounded dilated capillaries between which there are numerous anastamosis. The second network of lymph vessels is in the lower part of the dermis and already has valves. There is a network of wide loops forming lymphatic plexus and deeper parts are continuous with lymph trunks.

Skin Physiology The skin is the body's largest organ, covering the entire body. In addition to serving as a protective shield against heat, light, injury, and infection, the skin also.

- regulates body temperature.
- stores water and fat.
- functions as sensory organ.
- prevents water loss.
- Secretion and excretion
- Absorption
- gaseous exchange

FUNCTIONS OF SKIN:

Sl. No	FUNCTIONS	STRUCTURE
1	Barrier protection:	
	UV rays	Melanocytes
	Infection & Fluid homeostasis	Keratinocytes
	Protection from trauma	Epidermis & dermis
2	Thermoregulation	Blood vessels in superficial & deep dermal plexus
3	Immuno regulation	Langerhans cells &Inflammatory cells of all types
4	Sense perception	
	Pain, touch,temperature	Peripheral nerve trunks
	Pressure	Pacini vater corpuscles
	Discriminant touch	Meissners corpuscles

Melanocytes

Melanocytes are derived from stem cells in the neural crest that normally migrate to the epidermis, where they are scattered along the basal layer. Melanocytes produce melanin within cytoplasmic packets called melanosomes. These contain greater amounts of melanin in darker skinned individuals. The melanin is distributed to keratinocytes via dendrites when stimulated by exposure to ultraviolet radiation and other factors.

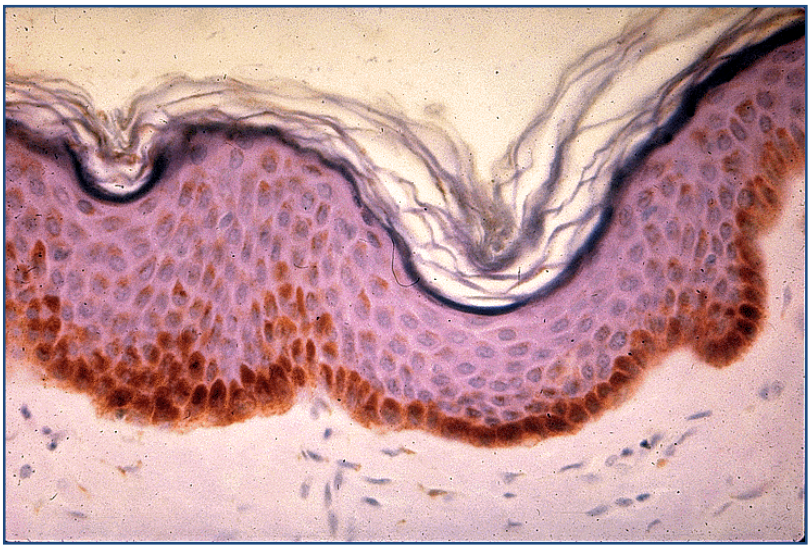
Melanin

Melanin – Dervied from the Greek word Melas, meaning black.

Melanin is a complex black-brown polymer synthesized from the aminoacid L-**DOPA**.

Melanin is endogenous nonhaemoglobin derived or brown black pigment (formed). When the enzyme tyrosinase catalyses the oxidation of tyrosin to dihydroxy phenylalanine (DOPA) in melanocytes.

Melanin layer of skin:



Distribution

It is widely distributed in the body but peculiarity enough it is limited only to those structures which have got an ectodermal origin, for skin, hair, choroid coat of retina and substanita nigra of the brain. It is formed from tyrosine by oxidation metabolism and polymarization.

Pigmentation of the Skin

The colour of the skin may be brown or even black according to the amount of pigment present. Even in white races most parts of the skin contain brown pigment granules in the deepest layers of the germinative zone of the epidermis. In dark races they are more abundant and extend through out the whole zone.

Melanin Formation

Melanin synthesis is initially catalysed by a copper containing enzyme known as tyrosinase. The broad of melanin synthesis from the oxidation of phenylalanine or tyrosine are as follows.

1. Tyrosine ⟶ DOPA ⟶ DOPA quinone

2. DOPA – quinone ⟶ 2-Carboxy 2, 3 – dihydro – 5, 6 – dihydroxyindole

⟶ 2 – Carboxy – 2, 3 – dihydro – indole – 5, 6 – quinone ⟶ 5, 6 Dihydroxyindole.

3. 5, 6 Dihydroxyindole ⟶ Indole - 5, 6 Quinone ⟶ Melanin

Melanin produced in the melanocytes is donated via their dendrites to neighbouring keratinocytes. Melanin formation in both human and amphibian skin is augmented by the hormone known as intermedin or melanocyte – stimulating hormone (MSH) secreted by the pars intermedia of the pituitary gland. Adrenocartico tropic hormone (ACTH) secreted by Anterior Pituitary has melanocyte – stimulating activity similar to MSH although to a much lower degree. Melatonin extract from bovine pineal gland, causes concentration of melanin near the nuclei of melanocytes in frog and as a result of this the skin becomes paler. Its role in the human is not known. MSH causes the serum copper to rise and this is accompanied by inner case in the melanin formation. Diminished formation of melanin is seen in albinism and leucoderma. In melanotic sarcoma, melanin may be found in the urine.

Vitiligo

The name ‘vitiligo’ is derived from the Latin word skin eruption, victim meaning a blemish (spoil the beauty of) happens to be a synonym for it. White skin is the literal meaning of leucoderma, derma being derived from the greek words, leucas and dermis. Leucas means white and dermis means skin. Celeus was the first Roman physician of the 2nd century to coin the word vitilligo, because the disease resembles the white patches of a spotted calf (vitelus).

Vitiligo is characterized by the presence of non-pigmented areas of irregular shape, which develop on the epidermis of skin and hair.

Definition

Vitiligo is a common skin disorder in which there is focal failure of pigmentation due to destruction of melanocytes that is thought to be mediated by immunological mechanism. It is characterized by sharply demarcated, milky white patches with Hyperpigmented borders.

It is quite clear that vitiligo is due to some derangement in the pigment metabolism resulting in appearance of white patches in the skin. It is hard to say whether the site of derangement is usually general or local, but the main affected part is the skin, which is the most exposed part of the body. It can be examined by naked eye and can furnish a lot of information about the person and the disease.

Epidemiology

Vitiligo is an acquired idiopathic depigmentary condition, which though worldwide in distribution is most common in India, Egypt, and other tropical countries.If affects all age groups with no predilection to either sex.

About 0.5 to 1 percent of the world's population, or as many as 65 million people, have vitiligo.

Vitiligo affects 8.8% of population in India.

It is present in adult life in 25% of patients.

Gross Anatomical Changes in Vitiligo

Vitiligo represents an acquired patchy loss of pigments of the skin. There are no gross changes seen except irregularly demarcated depigmented patches of varying size, usually surrounded by hyper pigmented skin. These are seen distributed symmetrically or asymmetrically at various parts of the body.

Histopathalogic Changes in Vitiligo

Marked histological changes do not occur in cases of vitiligo. All the layers of the epidermis and dermis appear normal except a few changes which can be seen after special stains.

Absence of melanocytes

Negative silver stain for melanin

Negative dopa reaction

Lymphocytic inflammation may be seen

Melanophages may be seen.

In the affected area the basal cells and the keratinzing cells of the other layers of epidermis do not contain melanin pigment granules in them.

At the border of the patches of vitiligo the melanocytes often appear large and posses long dendritic process filled with melanin granules. Electron microscopic studies confirm the absence of melanocytes in areas of long standing vitiligo.

There are collections of monomuclear cells at dermo epidermal junction at the border between vitilliginous and normal skin. These cells are predominately small lymphocytes. In the long standing cases where the skin has become thick and scaly, varying amount of keratosis is seen.

Pathophysiology

Vitiligo is a multifactorial polygenic disorder with a complex pathogenesis. It is related to both genetic and nongenetic factors. Although several theories have been proposed about the pathogenesis of vitiligo, the precise cause remains unknown. Generally agreed upon principles are an absence of functional melanocytes in vitiligo skin and a loss of histochemically recognized melanocytes, owing to their destruction. However, the destruction is most likely a slow process resulting in a progressive decrease of melanocytes.

Theories regarding destruction of melanocytes include autoimmune mechanisms, cytotoxic mechanisms, intrinsic melanocyte defects, oxidant-antioxidant mechanisms, and neural mechanisms.

- Autoimmune and cytotoxic hypotheses: Aberration of immune surveillance results in melanocyte dysfunction or destruction.
- Neural hypothesis: A neurochemical mediator destroys melanocytes or inhibits melanin production.
- Oxidant-antioxidant mechanisms: An intermediate or metabolic product of melanin synthesis causes melanocyte destruction.
- Intrinsic defect of melanocytes: Melanocytes have an inherent abnormality that impedes their growth and differentiation in conditions that support normal melanocytes.

Autoimmune destruction of melanocytes:

The autoimmune theory proposes alteration in humoral and cellular immunity in the destruction of melanocytes of vitiligo.

The most convincing evidence of an autoimmune pathogenesis is the presence of circulating antibodies in patients with Vitiligo.The role of humoral immunity is further supported by the observation that melanocytes are destroyed in healthy skin engrafted onto nude mice injected with vitiligo patient sera.

In addition to the involvement of humoral immune mechanisms in the pathogenesis of vitiligo, strong evidence indicates involvement of cellular immunity in vitiligo. Destruction of melanocytes may be directly mediated by autoreactive $CD8^+$ T cells. Activated $CD8^+$ T cells have been demonstrated in perilesional vitiligo skin. In addition, melanocyte-specific T cells have been detected in peripheral blood of patients with autoimmune vitiligo.

Thyroid disorders, particularly Hashimoto thyroiditis and Graves disease; other endocrinopathies, such as Addison disease and diabetes mellitus; and alopecia areata; pernicious anemia; inflammatory bowel disease; psoriasis; and autoimmune polyglandular syndrome are all associated with vitiligo.

Intrinsic defect of melanocytes

Vitiligo melanocytes may have an intrinsic defect leading to melanocyte death. These melanocytes demonstrate various abnormalities, including abnormal, rough endoplasmic reticulum and incompetent synthesis and processing of melanocytes. In addition, homing-receptor dysregulation has also been detected. Early apoptosis of melanocytes has also been suggested as a cause of reduced melanocyte survival; however, subsequent investigation

found that the relative apoptosis susceptibility of vitiligo melanocytes was comparable with that of normal control pigment cells.

Disturbance in oxidant-antioxidant system in vitiligo

Oxidant stress may also play an essential role in the pathogenesis of vitiligo. Studies suggest that accumulation of free radicals, toxic to melanocytes leads to their destruction. Because patients with vitiligo exhibit a characteristic yellow/green or bluish fluorescence in clinically affected skin, this led to the discovery that the fluorescence is due to accumulation of 2 different oxidized pteridines. The overproduction of pteridines led to the discovery of a metabolic defect in tetrahydrobiopterin homeostasis in patients with vitiligo, which results in the accumulation of melanocytotoxic hydrogen peroxide.

Because oxidative stress has been suggested to be the initial pathogenic event in melanocyte degeneration, several studies have been conducted to evaluate this theory. Recent investigations set out to evaluate the role of oxidative stress by measuring levels of the antioxidant enzymes superoxide dismutase (SOD) and catalase (CAT) in lesional and normal skin of patients with vitiligo and in the skin of normal control subjects. They concluded oxidative stress is increased in vitiligo, as indicated by high levels of SOD and low levels of CAT in the skin of vitiligo patients.

Neural theory

Case reports describe patients afflicted with a nerve injury who also have vitiligo have hypopigmentation or depigmentation in denervated areas. Additionally, segmental vitiligo frequently occurs in a dermatomal pattern, which suggests that certain chemical mediators are released from nerve endings that affect melanin production. Further, sweating and vasoconstriction are increased in depigmented patches of vitiligo, implying an increase in adrenergic activity. Finally, increased urinary excretion of homovanillic acid and vanilmandelic acid (neurometabolites) has been documented in patients with vitiligo. This may be a secondary or primary phenomenon.

In summary, although the ultimate cause of vitiligo is not completely known, this condition does not reflect simple melanocyte loss, but possible immunologic alterations and other molecular defects leading to pigment cell destruction; however, melanocytes may be present in depigmented skin after years of onset and may still respond to medical therapy under appropriate stimulation.

Genetics of vitiligo

Vitiligo is characterized by incomplete penetrance, multiple susceptibility loci, and genetic heterogeneity. The inheritance of vitiligo may involve genes associated with the biosynthesis of melanin, a response to oxidative stress, and regulation of autoimmunity.

Human leukocyte antigens (HLAs) may be associated, but not in a consistent manner. For example, HLA-DR4 is increased in blacks, HLA-B13 is increased in Moroccan Jews, and HLA-B35 is increased in Yemenite Jews. An association with HLA-B13 is described in the presence of antithyroid antibodies.

A genome-wide association study of generalized vitiligo in an isolated European founder population identified that the group had significant association with single-nucleotide polymorphisms in a 30-kb LD block on band 6q27, in close vicinity to IDDM8, which is a linkage and an association signal for type I diabetes mellitus and rheumatoid arthritis. Only one gene, *SMOC2*, is in the region of association, within which SNP rs13208776 attained genome-wide significance for association with other autoimmune diseases and vitiligo

Important known causative factors are:

- Nutritional – defects in copper, proteins and vitamins in diet, digestive upsets like amoebiasis, helminthics, chronic diarrhoea, dysentery etc.,
- Endocrines – Association with thyrotoxicosis and diabetes.
- Trophoneurosis and autonomic imbalance – emotional stress and strain.
- Infections and toxic products, Enteric fever ill health, focal sepsis.
- Drugs and chemicals – like quinines, guano furacin, amylphenol, chlorthiazide broad spectrum antibiotics and chloroquin.

Chemicals are known to inhibit melanogenesis, enzymatic actions and several chain biochemical reactions. They can also cause interference with nutrition of the tissues. Hence tie up of the chemicals and nutrition may provide the answer. Role of food adulterants, industrial chemicals and dyes, contaminating water and foods may be guess work at this stage but may prove to be ultimate causes.

Hereditary Factors

- Vitiligo has a genetic background.
- >30% of affected individuals have reported vitiligo in a parent, sibling or child.
- Vitiligo in identical twins has been reported.
- Transmission is most likely polygenic with variable expression.
- The risk of vitiligo for children of affected individual is unknown but may be <10%
- Familial incidence has been reported in 7.5 to 21% in India and 33 to 40% in western countries.

Psychology of vitiligo Patients

White patches of vitiligo can affect emotional and psychological well-being and self-esteem. People with vitiligo can experience emotional stress, particularly if the condition develops on visible areas of the body.

The main symptom of vitiligo is the appearance of lesions, with an often distressing sense of disfigurement and associated stigma. Social isolation, reduced sense of worth, adverse effects on education, occupation, and personal relationships and depressive illness can be consequences

Although vitiligo is usually not harmful medically, its emotional and psychological effects can be devastating. In fact, in India, women with the disease are sometimes discriminated against in marriage. Developing vitiligo after marriage can be grounds for divorce. This disease attaches a social stigma. Inferiority complex immediately following the start of disease, the patient thinks himself inferior to those with whom he was at par or excelled for so long. Naturally, at the beginning the individual tries to hide the patches of lesion and when fails in this effort, the individual often feels shy of friends and relatives.

Psychosis:

As the patient tries to feels shy of the surrounding environment, he may gradually feel more and more lonely and withdrawn, ultimately plunging in to a state.

Anxiety:

As the disease spreads it may give rise to a state of acute anxiety and insomnia, mixed with depression.

Pathology:

Chemically melanin pigment is a group of chromo proteins with coloured prosthetic groups, which is derived from the precursor tyrosine in the following way, Tyrosine Tyrinase Dihydroxy phenylalanin (DOPA) Melanogenase Melanin (Dopa oxidase).

Melanin + Protein = Melano protein

In the skin, the pigment is produced by the melanocytes of their precursor melanoblasts. The melanoblasts are supposed to be derived from the cells of neuro ectodermal origin during the embryonic life. After birth, these cells migrate to their definitive position. The melanocytes appear as clear cells within the basal cell layer of the epidermis and show dendritic processes after special staining. These processes come in contact to similar process of other melanocytes and epithelial cells through which the melanin pigments are donated to the basal cells of epidermis. The dermis of normal skin also shows macrophages containing melanin pigments known as melanophores, which are incapable to produce the melanin pigments.

Both the melanocytes and melanoblasts contain the enzyme melanogenase or Dopa oxidase, and they are able to convert dihydroxy phyenylalanine into melanin and such cells are called DOPA positive.

In Behl's practice of Dermatology, it is shortly described. A defect in enzyme tyrosinase is held responsible for vitiligo. According to some, it is a metatarin; a substance secreted at nerve endings inhibits tyrosinase, thus interfering in pigment formation. DOPA staining shows that melanocytes are deficient. In active cases mononuclear hugging at the junction of the lesion and normal skin is a prominent feature.

Causes of Hypo pigmentation

Leukoderma can be subdivided in to melanocytopenic and melanopenic disorders.

Melanocytopenic disorders: Melanocytes are decreased in number or absent. e.g Vitiligo.

Melanopenic disorders: Absence or reduction in the amount of melanin . Melanocytes are present although not functioning properly. e.g. Albinism

Generalised depigmentation is found mostly in albinos. In this case, the characteristic dendritic melanocytes are present in the skin, but they are unable to produce melanin pigment

due to defective tyrosinase activity. In albinis, the skin looks milky white, the hairs are pale looking and the iris is transparent. This generalized pallor is also noticed in panhypopituitiarism, male eunuchoidism and phenyl ketonuria.

Vitiligo in patients in whom the disease spreads very fast or those having halo-navi or malignant melanoma is believed to be based on auto-immune mechanisms, where auto antibodies or sensitized lymphocytes are supposed to act on the melanocytes.

Leucoderma is also commonly seen on the flanks of ladies wearing tight petticoat strings where the prolonged pressure is presumed to lead to depigmentation. Sometimes vitiligo can be caused by the action of monobenzyl ether of hydroquinone which is present in the slippers, gloves (or) other articles made of rubber. Recently vitiligo has also been observed to occur from plastic slippers as well as plastic 'bindis'.

CLINICAL FEATURES:

Vitiligo manifests as acquired white or hypopigmented macules or patches. The onset is slow and the course insidious but enigmatic. It may continue to increase slowly or come to a half and then increase again. It is reported that the malady usually starts and increasing in the summer months in northern India.

The lesions are usually well demarcated, and they are round, oval, or linear in shape. The borders may be convex.

Lesions enlarge centrifugally over time at an unpredictable rate. Lesions range from millimeters to centimeters in size. Initial lesions occur most frequently on the hands, forearms, feet, and face, favoring a perioral and periocular distribution.

Vitiligo lesions may be localized or generalized, with the latter being more common than the former.

Localized vitiligo is restricted to one general area with a segmental or quasidermatomal distribution. Generalized vitiligo implies more than one general area of involvement. In this situation, the macules are usually found on both sides of the trunk, either symmetrically or asymmetrically arrayed.

The most common sites of vitiligo involvement are the face, neck, and scalp. Many of the most common sites of occurrence are areas subjected to repeated trauma, including the following:

- Bony prominences
- Extensor forearm
- Ventral wrists
- Dorsal hands
- Digital phalanges

Involvement of the mucous membranes is frequently observed in the setting of generalized vitiligo. Vitiligo often occurs around body orifices such as the lips, genitals, gingiva, areolas, and nipples.

Body hair (leukotrichia) in vitiliginous macules may be depigmented. Vitiligo of the scalp usually appears as a localized patch of white or gray hair, but total depigmentation of all scalp hair may occur. Scalp involvement is the most frequent, followed by involvement of the eyebrows, pubic hair, and axillary hair, respectively. Leukotrichia may indicate a poor prognosis in regard to repigmentation. Spontaneous repigmentation of depigmented hair in vitiligo does not occur.

- ❖ Vitiligo is most noticeable in the summer when the normal skin is tanned by the sun. The white areas having not protected pigment are easily made red and sore by exposure to sun or artificial ultraviolet light.
- ❖ Early lesions may be pale white and ill defined. At this stage, wood's lamp helps to confirm the diagnosis. Patches enlarge slowly and may affect the whole body. Patients skin is susceptible to even minor trauma, it heals with depigmentation.
- ❖ At time lesions develop along the distribution of a peripheral nerve, zosteriform vitiligo. It is interesting sometimes to see a bunch of hair burning in that area of skin.
- ❖ Occasionaly, vitiligo develops around pigmented moles – 'Halo naevus'.
- ❖ Haemoglobin content of the blood is low and sometimes intestinal parasites and infections can be detected. Patients complaint of easy fatiguability.
- ❖ Vitiligo sometimes disappears spontaneously after months or years but more usually the conditions spreads slowly and may eventually involve nearly the whole of the skin.

Clinical variants

a. Trichrome vitiligo has an intermediate zone of hypochromia located between the achromic center and the peripheral unaffected skin. The natural evolution of the hypopigmented areas is progression to full depigmentation. This results in 3 shades of color—brown, tan, and white—in the same patient

b. Zosteriform: Unilateral distribution of lesions, preferably along the course of nerves.

c. Koebner phenomenon is defined as the development of vitiligo in sites of specific trauma, such as a cut, burn, or abrasion. Minimum injury is required for Koebner phenomenon to occur.

Clinical classifications of vitiligo

The classification system is important because of the special significance assigned by some authorities to each type of vitiligo. The most widely used classification of vitiligo is localized, generalized, and universal types and is based on the distribution, as follows:

Localized vitiligo

- Focal: This type is characterized by one or more macules in one area, most commonly in the distribution of the trigeminal nerve.
- Segmental: This type manifests as one or more macules in a dermatomal or quasidermatomal pattern. It occurs most commonly in children. More than half the patients with segmental vitiligo have patches of white hair or poliosis. This type of vitiligo is not associated with thyroid or other autoimmune disorders.
- Mucosal: Mucous membranes alone are affected.

Generalized vitiligo

- Acrofacial: Depigmentation occurs on the distal fingers and periorificial areas.
- Vulgaris: This is characterized by scattered patches that are widely distributed.
- Mixed: Acrofacial and vulgaris vitiligo occur in combination, or segmental and acrofacial vitiligo and/or vulgaris involvement are noted in combination.

Universal vitiligo: This is complete or nearly complete depigmentation. It is often associated with multiple endocrinopathy syndromes.

Classification of vitiligo by progression, prognosis, and treatment

When progression, prognosis, and treatment are considered, vitiligo can be classified into 2 major clinical types: segmental and nonsegmental, as demonstrated in the images below.

- Segmental: This usually has an onset early in life and rapidly spreads in the affected area. The course of segmental vitiligo can arrest, and depigmented patches can persist unchanged for the life of the patient.
- Nonsegmental: This type includes all types of vitiligo, except segmental vitiligo.[12]

Clinical Criteria for Classification on Vitiligo

Stage of Clinical Features

Vitiligo

Active (V1)

i) New lesions developing

ii) Lesions increasing in size

iii) Border ill defined

Quiescent (V2)

i) No new lesions developing

ii) Lesion stationary in size

iii) Border hyperpigmented and well-defined.

Improving (V3)

i) Lesions decreasing in size

ii) No new lesions developing

iii) Border defined and signs of spontaneous regimentation (follicular and peripheral)

Causes of Localised Hypopigmentation

Vitiligo	Destruction of melanocytes; common; acquired, multiple sharply defined nonpigmented patches any where.
Pityriasis versicolor	Superficial fungus infection leading to disturbance in pigment production, common multiple pale scaling patches on trunk
Pityrisis alba	Mild patchy eczema of the face in children causing a disturbance in pigment production.
Leprosy	One or several paler macules on trunk or limbs that are hypoaesthetic.
White macules of affecting tuberous sclerosis	Uncomming development of anomaly of CNS, connective tissue and skin; several "maple leaf" shaped hypopigmented macules.
Postinflammatory hypopigmentation	After inflammatory skin disease (after eczema or trauma to the skin; irregular in shape and in depth of pallor).
Naevous anaemicus	Rare developmental solitary white patch uaually on trunk; thought to have vascular basis.
Chemical toxicity	May look very much like vitiligo; seen in workers in rubber industry exposed to parateriary benzyltoluence.

Diagnosis:

1) The distribution, the age of onset and the hyper pigmented border will suggest the diagnosis.
2) Vitiligo areas are milky white while other lack this milky white colouration.
3) It is usually apparent. In doubtful and early case, Wood's lamp is great help in diagnosis.
4) Usually in macularleprosy, seborrhoeides, pityriasis versicolour and nevoid condition, its assistance is called for.
5) In piebaldism the lesions are present at birth, are usually confined to the head and trunk and rarely show a hyperpigmented border.
6) Careful examination of the texture of the unpigmented skin should exclue lichen sclerosus and scleroderma.
7) Post-inflammatory leucoderma, which is frequent in the darker races, shows an irregular mottling of hyper pigmented and hypopigmented blotches.

8) Hypomelanosis of the affected skin is commonly seen in pityriasis alba, producing slightly scaly areas with rather ill defined edges of children's faces.
9) Hypopigmented, slightly scaly macules are seen in pityriasis versicolor.
10) Stationary patches are well-defined and have hyperpigmented borders.
11) Sensations are normal, so is texture unless the patches have been irritated with treatment.
12) Absence of scaling, crusting and itching help to eliminate seborrhoeids and pityriasis versicolor.
13) These areas often fluorescence a golden yellow when examined under a Wood's lamp. The hypomelanotic macules in leprosy are anaesthetic.
14) Examination of the skin in long wave UVR helps distinguish whether there is total depigmenation (as in Vitiligo) or not. It may also detect areas of depigmenation not easily seen in ordinary daylight, as well as detecting a lemon-yellow fluorescence seen in some cases of pityriasis versicolor.

Prognosis

It has improved considerably in recent years because of better understanding of etiological factors and advances made in theraphy. Analyses of cases which have failed to respond have usually shown the following features:

1) Poor nutritional state or digestion, use of broad – spectrum antibiotics over long periods. Emotional stress and nervous debility.
2) Presence of vitiligo on resistant sites like the hands and the feet, front of wrists, the elbows, the waist, the eyelids and lips.
3) Depigmented hair in vitiliginous areas.

Treatment

In many cases the onset of venpulli and periods of active extension of pigment loss occasionally seem to be related to periods of severe physical or emotional stress. So from this, it is understood that mental helath is very much important in treatment.

Therefore before treating the patients with the drug it is necessary to make the patient mentally fit. The mental fitness of a patient chiefly depends on his family so that the family members aware that it is just depigmentation of the skin and neither it is neither contagious nor any dangerous disease.

In 6% of those who had perinicious anaemia the haemoglobin content in blood is low. So the patients' nutritional state has to be increased as high as possible. This is very particular when venpadai is active and progressively increasing.

Highly nutritious food like spinach, pomegranate, cheese, butter, milk, almond, germinating grams and foods rich in tyrosinase to be added.

Vit-C (Ascorbic acid) must be avoided in diet, since in the formation of melanin, tyrosine, plays an important role. But in the metabolic pathway of tyrosine a metabolic error happens due to the presence of vitamin C (Ascorbic acid). If this error happens continuously the tyrosine cannot be absorbed by the body and is excreted through urine.

Treatment:

The main goal of treating Vitiligo is to improve appearance. The choice of therapy depends on the number of white patches; their location, sizes, and how widespread they are; and what you prefer in terms of treatment. Each patient responds differently to therapy, and a particular treatment may not work for everyone. Current treatment options for Vitiligo include medication, surgery, and adjunctive therapies (used along with surgical or medical treatments).

Medical therapies:

1. Topical steroid therapy:

2. Psoralen photochemotherapy:

3. Depigmentation:

Surgical therapies:

1. Autologous skin grafts:
2. Skin grafts using blisters:
3. Micropigmentation (tattooing):
4. Autologous melanocyte transplants:

Diet and restrictions:

- Occupation
- Cosmetic things
- Diet

During bathing – the powder of Bengal gram and green gram or any other herbal products can be used.

If any one above is the reason for allergy it must be avoided.

- Vinegar, cooking soda, food enriched with alcohol must be avoided. These items may promote bleaching of skin pigment.
- Using soaps and detergents also promote bleaching of skin.
- Copper and zinc content vegetable such as cooked greengram or Bengal gram at least one time a day.
- The role of copper in skin pigmenation can be well understood in terms of necessity of copper for tyrosinase activity. Loss of pigments has been repored in acute zinc deficiency. Also reported in vitiligenous skin, zinc and copper contents are decreased.
- Venpulli is also commonly seen on the flanks of ladies pressure is presumed to lead to depigmentation.
- Avoid Irritant cosmetic things.
- Avoid Rubber slipper, gloves etc.

At the time of discharge all the fourty patients were advised to attend the out patient department for follow up study.

PREPARATION AND PROPERTIES OF TRIAL DRUGS

INTERNAL MEDICINE: YAANAI NERUNJIL CHOORANAM

(Reference: Pathartha guna vilakkam(page no 627-628)

Ingredients:

Whole plant of Yaanai Nerunjil

Method of Purification of Raw drugs:

The leaves are wiped by a clean, dry cotton cloth. The roots are washed with pure water and dried well. *(Reference: Chikicha Rathana Deepam Pg No :28)*

Method of preparation:

The purified Yaanai Nerunjil Samoolam are dried in the shadow. The dried samoolam are grounded into fine powder and then it is sieved by using a fine silk cloth (Vasthrakayam). The fine powder is mixed with milk and placed in a cloth which is placed in a vessel containing milk with equal amount of water. This is to be closed by another vessel. This instrument is subjected to heat (Pittavial method). Then it is dried and then filtered by a cotton cloth. The fine powder is stored in a clean, dry air tight glass bottle.

Dosage: 2-5gm (twice a day)

Vehicle: Water

Duration: 48 days

EXTERNAL MEDICINE: PATHIYAA LEBANAM

(*Reference: Agasthiyar Vaithiya Pillai Tamil)*

Ingredients:

Manjal kadukkai (Terminalia chebula)	-35 gm
Kadugu (Brassica juncea)	-35 gm
Vellalari verpattai (Nerium odorum)	-35 gm
Veppaver pattai(Azadirachta indica)	-35 gm
Karbogarasi(Psoralea cordifolia)	-35 gm
Induppu (sodium chloride impura)	-35 gms

Method of preparation:

The above said raw drugs are powdered and then it is ground in a Kalvam by adding Cow's urine and made into a paste form. This paste is used externally.

PROPERTIES OF TRIAL DRUGS

YAANAI NERUNJIL

Botanical name: Pedalium murex

Family :Pedaliaceae

Useful part :Whole plant

Organoleptic Characters:

Taste -Thuvarppu (astrigent)

Potency -Seetham

Pirivu -Inippu(sweet)

Actions:

Refrigerant

Diuretic

Demulcent

Tonic

Aphrodisiac

Astrigent

General properties:

"மேகத்தைப் போக்கிவிடும் வெண்குட்டந் தானொழிக்குந்
தேகத்திற் கல்லடைப்பைத் தீர்க்குங்காண்-நாகத்தாந்
தேனையரும் பாகைத் திருத்துங் கிளீ மொழியே!
யானை நெருஞ்சி லது ."

- அகத்தியர்குணவாகடம்

Chemical Constitutions:

Oleic acid, n-hexa-deconic acid, linoleic acid, malvolic acid, palmitic acid, stearic acid . Oleic acid has anti-inflammatory activity, n-Hexadeconic acid (Palmitic acid) has anti-oxidant, hypocholesterolemic, nematicide and pesticide activities. Pedalitin (3,4',5,6 tetrahydroxy-7-methoxyflavone), diosmetin and dinatin isolated from the leaves of Pedalium murex. *(Tayal and Dutt, 1939).*

5,7- dimethoxy -2'. 4'. 5' – trimethoxyflavone and tricontanyl dotriacontanoate along with lutcolin, rubusic acid and nonacosane-β-D-glucoside isolated from fruits of Pedalium murex (Rastogi and Mehrotra, 1992)

KADUKKAI

English Name **:** Chebulic myrobalan.

Botanical Name **:** Terminalia chebula. Retz.

Family **:** Combretacea**e**

Part used **:** Dry fruit

Organoleptic characters:

Taste : Astringent, sweet, sour, acrid, bitter.

Potency : Veppam (Hot)

Pirivu : Inippu(Sweet)

Phytochemicals:

- Chebulinic acid
- Gallic acid

Activities:

- Astringent
- Laxative
- Fungicidal
- Bactericidal

General Characters:

"தாடை கழுத்தக்கி தாலு குறியிவிடப்
பீடை சிலிபதமுற் பேதிமுடம் - ஆடையெட்டாத்
தூலமிடி புண்வாத சோணிகா மாலையிரண்
டாலமிடி போம்வரிக்கா யால்".

- அகத்தியர்குணவாகடம்

Uses:

It is used in fever, cough, rheumatism, urinary tract diseases, and scorpion stings.[13]

CHEMICAL CONSTITUENTS:

It has rich source of tannins and other phenolic compounds, some triterpenes and/or their glycosides were also reported from *T. chebula* [1]. For further phytochemical

discoveries we investigated this plant and isolated olanolic acid-derived triterpenes.Their structures were determined by spectroscopic methods including NMR and HRESIMS techniques. **Ref: http://www.ncbi.nlm.nih.gov/pubmed/17365188**

KADUGU

BOTANICAL NAME : Brassica juncea

FAMILY : Brassicaceae

PARTS USED : Seed

ORGANOLEPTIC CHARACTERS:

Taste : Kaarpu(pungent)

Potency : Veppam(heat)

Pirivu : Kaarpu(pungent)

ACTIONS:

Emetic

Stimulant

Rubefacient

Vesicant

Digestive

Diuretic.

GENERAL PROPERTIES:

"மந்தமயக் கம்வாதம் வாய்நீர்ச் சுழற்றலறூ
முந்து சுகப்பிரச வங்களுண்டா மிந்துநுதன்
மாணே!கிராணீகுன்ம மாறூமுத் தோடமும்போம்
தானே கடுகிற்குத் தான்."

- அகத்தியர்குணவாகடம்

CHEMICAL CONSTITUENTS:

Seed sterols contain 19.2% brassicasterol (9.1% esterified), 23.6% free campesterol (34.0% esterified), 57.2% sitosterol (55.2% esterified), 1.7% esterified 5-avenasterol, and traces of 7-stigmasterol. It contains the glucosinolate sinigrin (potassium myronate) and the enzyme myrosin (myrosinase), sinapic acid, sinapine (sinapic acid choline ester), fixed oils (25 to 37%) consisting mainly of glycerides of erucic, eicosenoic, arachidic, nonadecanoic, behenic, oleic, and palmitic acids, among others; proteins (e.g., globulins) and mucilage (Leung, 1980). Ref: database vol -6 p-422

KARPOGARISI

BOTANICAL NAME : Psoralea corlifolia (Linn)

FAMILY : Fabaceae

ORGANOLEPTIC CHARACTERS :

Suvai : Kaippu

Thanmai : Veppam

Pirivu : Kaarppu

ACTION:

Vasodilator activity

Laxative

Stimulant

Anti-staphylococcal activity

Ref: journal . pharmacetical society of japan[1989,109(12),926-31]

GENERAL PROPERTIES:

பொதுக்குணம்:

“கார்போக மாமரிசி கண்டாற் கரப்பான்புண்
பீர்சகுவ நஞ்சிவைபோம் பித்தமுண்டாம் - பார்மீதில்
வாத கபநமைச்சல் வன்சொறிசி ரங்குமறுஞ்
சீத மலர்க்குழலாய் செப்பு”

- அகத்தியர்குணவாகடம்

CHEMICAL CONSTITUENTS:

Corlifolinin

Corylifolin

Limonene

Isonerbavachalcone

Psorlidin-2',3'-oxide diacetate

Isoflavone

corylinin

along with six known compounds, isopsoralen , psoralen ,

sophoracoumestan A , neobavaisoflavone , daidzin and uracil .

Ref: http://www.ncbi.nlm.nih.gov/pubmed/17365188

VAEPAVAERPPATTAI

BOTANICAL NAME : Azadirachta indica

FAMILY : Meliaceae

PARTS USED : Root bark, leaf, flower, unripe fruit, seed, resin, stem bark.

ORGANOPLEPTIC CHARACTERS:

Taste : Kasappu(bitter), Thuvarppu(astringent).

Potency : Veppam(heat)

Pirivu : Kaarpu(pungent)

ACTIONS:

Antiperiodic,

Tonic

Astringent.

CHEMICAL CONSTITUENTS:

Azadirachtin was isolated as the principal insecticidal and antifeedant constituent of A. indica seeds. In addition, 25 volatile compounds were identified as constituents of crushed neem seeds. The major volatile constituent identified, di-n-propyl disulfide, was shown to be larvicidal to three species of insects. Furthermore, two new insecticidal compounds, 1-cinnamoylmelianolone and 1-cinnamoyl-3,11-dihydroxymeliacarpin, were isolated from the fruit of M. azedarach. The insecticidal activities of these new compounds, compared with those of azadirachtin and several of its derivatives, suggest structure-activity relationships and a mode of action that may be useful in the design of synthetic analogs.

ALARIVAERPPATTAI

BOTANICAL NAME : Nerium odorum

FAMILY : Apocynaceae

PARTS USED : Root bark, flower.

ORGANPLEPTIC CHARACTERS:

Taste : Kasappu(bitter).

Potency : Veppam(heat)

Pirivu : Kaarpu(pungent)

ACTIONS:

Emetic,

Purgative

Anthelmintic.

CHEMICAL CONSTITUENTS:

Nerium oleander was subjected to methanol extraction and bioassay directed fractionation. This led to the isolation of two purified fractions namely, B-1 and B-3. Fractions B-1 and B-3 were studied with respect to their actions on the central nervous system and behavior pattern in mice. Both fractions were found to produce reduction in locomotor activity, rota rod performance and potentiation of hexobarbital sleeping time. These fractions also showed analgesic activity. When tested against picrotoxin induced convulsions fraction B-1 showed 40% protection, while fraction B-3 exhibited 60% protection against bicuculline induced convulsions. These findings suggest that both fractions possess a CNS depressant action.

Ref:http://www.ncbi.nlm.nih.gov/pubmed/17365188

INDHUPPU (SODIUM CHLORIDE IMPURA)

SYNONYM: Chinduram,Sainthavam,Madhiuppu.

ACTIONS:

purgative

carminative

Stomachic

digestive

alleviates Vaatham &

kabam, aggravates pitham.

GENERAL PROPERTIES:

"அட்டகுன்ம மந்தம் அசிர்கரஞ்சூர் சீதபித்தந்
துட்டவையம் நாடிப்புண் டோடங்கள்-கெட்டமலக்
கட்டுவிட விந்தையக் காமியனோய் வன்கரப்பான்
விட்டுவிட விந்துப்பை விள்."

- அகத்தியர்குணவாகடம்

CHEMICAL CONCTITUENTS:

It was estimated, that the human body contains on the average 100g of sodium, mainly present together with chloride anions; we can thus assume that the bulk of sodium is the form of sodium chloride, a common salt NaCl. An average daily diet contains 3 – 6g of Na; in other words around 10g of NaCl2. The consumption of salt varies considerably from individual to individual and there is nothing like "recommended daily intake".

COW'S URINE

ACTIONS:

Diuretic

Laxative

GENERAL PROPERTIES

"விடபாண்டு சோபைபல வீக்கஞ் சகல
விடமுதிர மாலையென மெத்தப்-புடவிதனிற்
பேசலக்க ணோடுதந்தப் பீடை யகன்றீடுமே
கோசலத்தா லாரணங்கே கூறூ."

-Patharthagunasindhamani

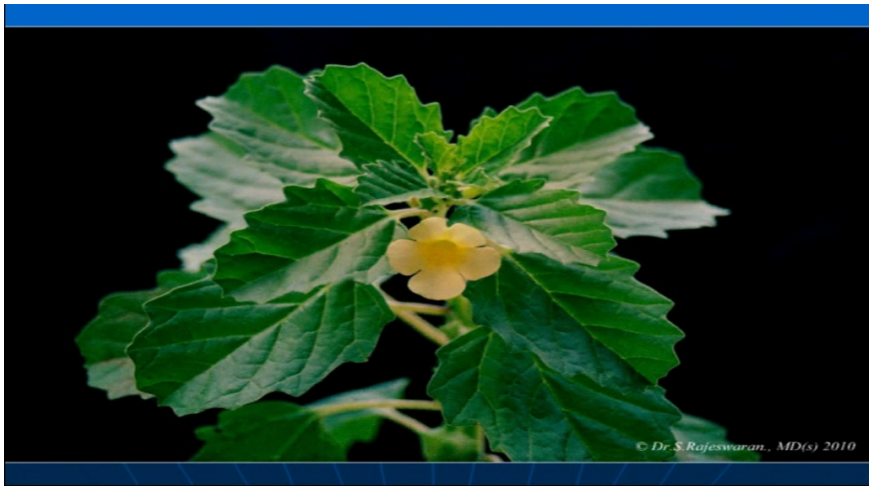
Chemical description of cow's urine as per modern concepts and cure of diseases accordingly

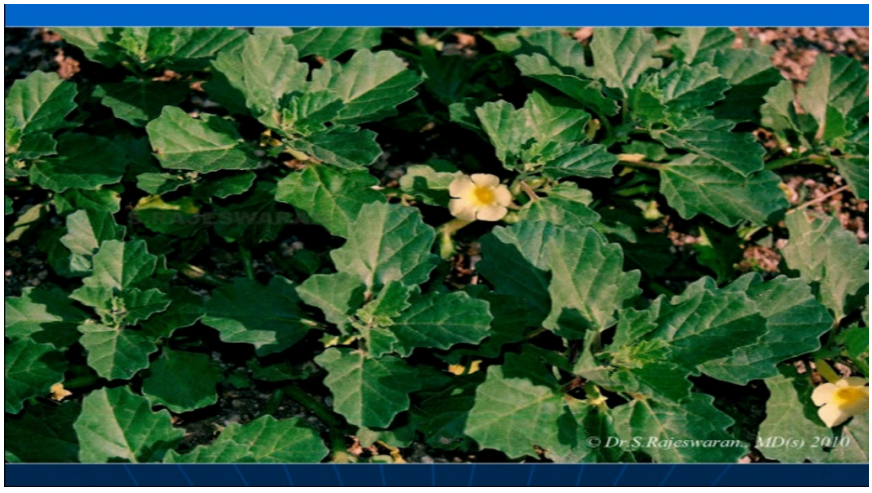
Table - Chemical contents of cow's urine and cure of diseases as per them

S. No.	Name of chemical	Effect of chemical on diseases
1.	Nitrogen N2 ,NH2	Removes blood abnormalities and toxins, Natural stimulant of urinary track, activates kidneys and it is diuretic.
2.	Sulphur S	Supports motion in large intestines. Cleanses blood.
3.	Copper Cu	Controls built up of unwanted fats
4.	Iron Fe	Maintains balance and helps in production of red blood cells & haemoglobin. Stabilises working power.
5.	Urea CO(NH2)2	Affects urine formation and removal. Germicidal.
6.	Potassium K	Cures hereditary rheumatism. Increases appetite. Removes muscular weakness and laziness.
7.	Calcium Ca	Blood purifier, bone strengthener, germicidal
8.	Salt NaCl	Decreases acidic contents of blood, germicidal
9.	Vitamins A,B,C,D,E	Vitamin B is active ingredient for energetic life and saves from nervousness and thirst, strengthens bones and reproductive ingredient for energetic life and saves from nervousness and thirst, strengthens bones and reproductive power.
10.	Enzymes	Make healthy digestive juices, increase immunity

The invention relates to an absolutely novel use of cow urine distillate as activity enhancer and availability facilitator for bioactive molecules including anti-infective and anti-cancer agents. The molecules which express any activity in form of either inhibiting or promoting a biological function have been referred in this invention as bioactive molecule e.g. antibiotics, drugs, nutraceuticals, cardiovascular, hepatoprotective, neuro-tonics etc. The present invention has direct implication in drastically reducing the dosage of antibiotics, drugs and anti-cancer agent while increasing the efficiency of absorption of bioactive molecules.

INTERNAL DRUG: YAANAI NERUNJIL





INGREDIENTS OF THE EXTERNAL MEDICINE

KADUKKAI

VELLALARI VERPATTAI

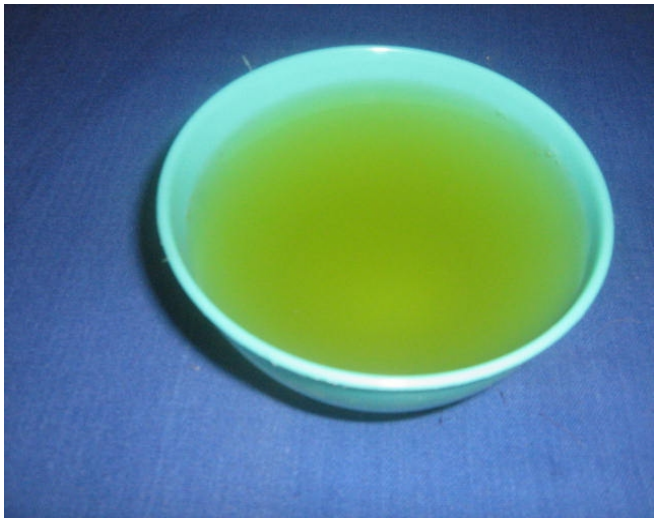
VEPPA VERPATTAI

KADUGU

INDHUPPU

KARBOGARISI

KOMOOTHIRAM



INTERNAL DRUG –YAANAI NERUNJIL CHOORANAM

EXTERNAL DRUG – PATHIYAA LEBANAM

YOGAM

.

The term Yogam means “Union”. Siddhars have defined Yogam as an art which controls the mind by preventing it from getting distracted through sense and sense organs and by uniting it with the divinity after realizing the truth of eternal bliss. Professor Yogi Ramaiah has explained this simply as “A perfect scientific art that unites the mind with God or the Truth”.

Yogam is one of the Kayakalpam methods that preserve physical and mental health by preventing the approach of grey hair, wrinkling, disease and death.

Yogam is a precious art that the Siddhars contributed to the Tamils and the Tamil medicine, i.e. the Siddha system of medicine, and to the people of the world at large.

There are people who think only of Yogasanam (postures) whenever we use the term Yogam but Yogam consists of eight steps and hence is called Attanga Yogam.

The eight steps or stages of Yogam are serially prevented in a verse of Thirumathiram, also called Tamil Moovayiram

“இயம நியமமே எண்ணிலா ஆதனம்
நயமுறு பிராணா யாமம்பிரத் தியாகாரஞ்
சயமிகு தாரணை தியானஞ் சமாதி
அயமுறும் அட்டாங்க மாவது மாமே”

- ✓ Iyamam
- ✓ Niyamam
- ✓ Asanam
- ✓ Pranayamam
- ✓ Prathyaharam
- ✓ Dharanai
- ✓ Dhyanam
- ✓ Samathi

Asanam:

Asanam means posture or pose, that is, the position of our body with reference to space. There is another interpretation by Siddhars: A + Samanam – A means athma and

Samanam means poise or relaxation. Relaxing athma implies relaxing it from streesful conditions of this worldly life. In other words, it means relieving athma from the lure of sensual pleasures. As asanam forms a part of Yogam it is also called Yogasanam.

Definition:

Keeping the body or part of the body steady and motionless in a particular posture for a specific time is Asanam.

Yogam techniques to be observed by the Venpulli patients:

- Kiriya Gnayiru Vanakkam (Kiraiya Pose of Sun Salutation)
- Meditative postures
    - Thamarai Asanam (Padmasanam)
    - Mandi Uruthi Asanam (Vajrasanam)
- Paranayamam
    - Mathrika Pranayamam
    - Omkhara Pranayamam
    - Nithirai Pranayamam
- Shanthi Asanam (Savasanam)

1.**Kiriya Gnayiru Vanakkam (Kiriya Pose of Sun salutation):**

The practice of Gnayiru vanakkam can give a patient a complete exercise regimen. One round of Sun salutation consists of twelve postures.

The Twelve Postures

Posture 1: **Vanakka Muthirai (Pranamasanam - Salutation posture)**

Stand erect with feet together. Join the palms together in front of the chest. Concentrate on standing straight, steady and in a prayerful attitude

Posture 2 : **Hastauttanasanam (Raised arm posture)**

Inhaling stretch both arms above the head, palms facing upward. Arch the back and stretch the whole body. This posture stretches the chest and the abdomen and lifts the Pranan (energy) upward to the upper parts of the body propelled by inhalation.

Posture 3: **Padahastasanam (Hand to foot posture)**

Exhaling bend the body forward and down, keeping the spine straight. Avoid collapsing the chest or "over-rounding" the upper back. Keep the legs straight and perpendicular to the ground. The knees may be allowed to bend a little if needed. The Pranan is channeled to the lower regions of the body propelled by exhalation.

Posture 4: **Ashwa Sanchalanasanam (Equestrian posture)**

On your next inhalation, extend the left leg back and drop the knee to the ground. The right knee is bent and kept between the hands and the right foot placed flat on the ground. Lift the spine and open the chest. Concentrate at the eyebrow center.

Posture 5: **Malai Asanam (Parvatasanam - Mountain posture)**

On exhalation bring the right leg back to join with the left leg. Simultaneously raise the buttocks and lower the head between the arms, so that the body forms a triangle with the floor. Try to place the heels flat on the ground. Focus awareness at the neck area. This posture strengthens the nerves and muscles in the arms and legs, stretches the calf muscles and Achilles' tendons and makes the spine straight and taut.

Posture 6: **Ettu Anga Vanakka Muthirai (Ashtanga Namaskaram - Salutation with eight limbs)**

Exhaling gently drop both knees to the ground and slowly slide the body down at an angle as you bring the chest and chin to the ground. All eight limbs - toes, knees, chest, hands and chin - touch the floor. The buttocks are kept up. Hold the breath.

Posture 7: **Pambu Asanam (Bhujangasanam - Cobra posture)**

On inhalation, lower the hips while pushing the chest forward and upward with the hands, until the spine is fully arched and the head is facing up. The knees and lower abdomen remain above the floor. Focus the awareness at the base of spine and feel the tension from the forward pull.

Posture 8: **Malai Asanam (Parvatasanam - Mountain posture)**

Exhale and get back to posture 5.

Posture 9: **Ashwa Sanchalanasanam (Equestrian posture)**

Inhale and swing the right leg forward between the hands. The left leg remains back. Resume posture 4

Posture 10: **Padahastasanam (Hand to foot posture)**

Exhaling, bring the left foot forward. Join both legs and resume posture 3

Posture 11 : **Hastauttanasanam (Raised arm posture)**

Inhale, raise the trunk up and bend backward. Resume posture 2.

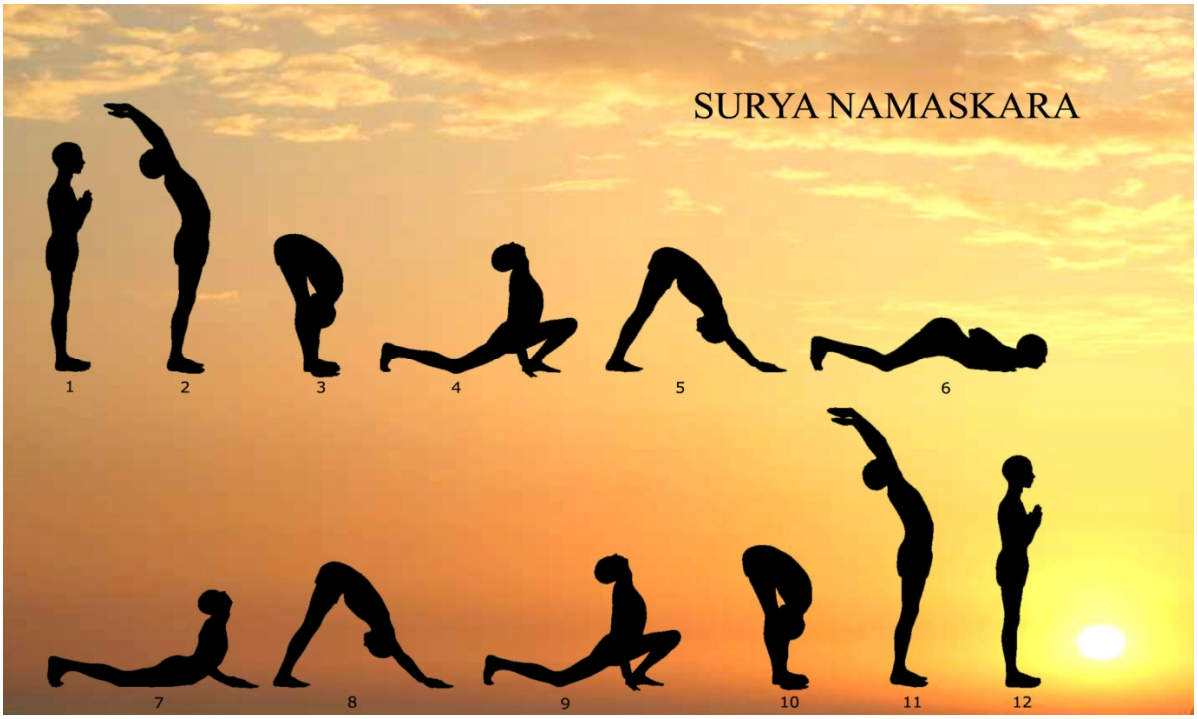
Posture 12: **Vanakka Muthirai (Pranamasana - Salutation posture)**

Straighten the body and bring the hands in front of the chest. Resume posture 1.

After performing Gnayiru Vanakkam, relaxation in Shavasanam is must.

Benifits:

- Tones up the digestive system by the alternate stretching and compression of abdominal organs. It activates digestion and gets rid of constipation and dyspepsia
- Strengthens abdominal muscles.
- Thoroughly ventilates the lungs, and oxygenates the blood.



- Acts as detoxifying agent, by getting rid of enormous quantity of carbon dioxide and other toxic gases.
- Tones up the nervous system and improves memory.
- Promotes sleep and calms anxiety.
- Normalizes the activity of the endocrine glands - especially the thyroid gland.
- Refreshes the skin. Prevents Skin disorders.
- In women, stimulates the breasts to help firmness normally. Restores any lost elasticity, through stimulation of glands and the strengthening of pectoral muscles.
- Suppresses menstrual irregularity and assists in easy childbirth.
- Prevents loss of hair and graying.
- Helps reduce fat.
- Reduces abnormal prominence of the Adam's apple.
- Eliminates unpleasant smells from the body.
- Lends grace and ease of movements to the body.
- Revives and maintains the spirit of youthfulness.
- Broadens chest and beautifies arms.
- Makes the spine and waist flexible.

- It invigorates the whole body by exercising each and every part of the body.it helps to burn out the the excessive calorie.
- It helps to exercise the lungs and chest.
- This facilitates the easy flow of air in and out.

2. Meditative postures:

2 a. Thamarai Asanam (Padmasanam)

English name: Lotus Pose

The term Padmam or Thamarai means lotus. The beginners in asanams should get trained in this asanam first, because this forms a basic asanam for many other asanams.

This asanam is one of the meditative postures.

Technique:

(1).Put the right leg on the left thigh, keeping the right heel pressing down the lower abdomen or (2).Put the left leg on the right thigh, keeping the left heel pressing down the lower abdomen. This posture is called pathi thamarai asanam (ardha padmasanam – half-lotus pose)

Beginners in Thamarai Asanam better practice half-lotus pose for some days. First day they can practice (1) and the subsequent day (2) as explained above, and this can be continued alternatively for some days and then lotus pose in its full form can be practiced as follows:

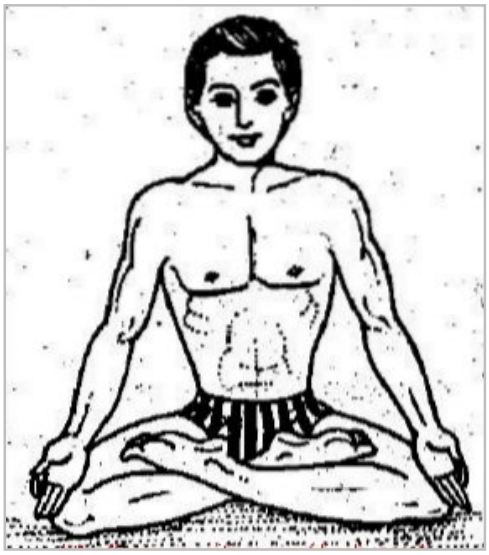
First do as explained in (1) and follow the steps as explained in (2) above. i.e., combine (1) and (2). Now place left hand with palm facing upward on the lap and then right hand similarly over the left(Pambu or Bairava Mutthirai) or place the hands on the knees, with palms facing upwards and keep the thumbs and the index fingers touching each other in the form of a circle and keep the other three fingers extended (Gnana mutthirai).

The vertebral column should be kept erect and head straight with eyes closed or open depending upon the meditation technique. This is Poorana Padmasanam (complete lotus pose)

To begin with, this Asanam can be practiced for 1 to 3 minutes and the duration can be increased according to our need in the course of time.

Relaxing the Asanam:

From the summit or the final completed stage of asanam, the asanam should be relaxed step by step in the reverse order. First, the left leg followed by the right leg should be taken away from the thighs to reach sukhasanam and then stand up and finally to the zero stage.



The counterpose for thid asanam is shavasanan or poorana shanthi asanam.

Benefits:

- Calms the brain
- Mental concentration is increased
- Stretches the ankles and knees
- Joints, especially the knee joints are strengthened
- Prevents joint disorders in old age
- Increases digestive function
- Produces clarity of the mind and briskness.
- Stimulates the pelvis, spine, abdomen, and bladder
- Eases menstrual discomfort and sciatica
- Traditional texts say that Padmasanam destroys all diseases and awakens kundalini.
- Padmasanam helps to get rid of flab around abdomen, thighs and buttocks.
- The thigh and calf muscles become stronger.
- The pose helps attain a straight posture.
- Padmasanam ensures the required blood supply to the abdomino-genital and pelvic areas.
- All muscles, tendons and ligaments are flexed and extended during Padmasanam. They are then relaxed when you relax.
- The erect spine attained in this posture prevents compression of the abdominal viscera.

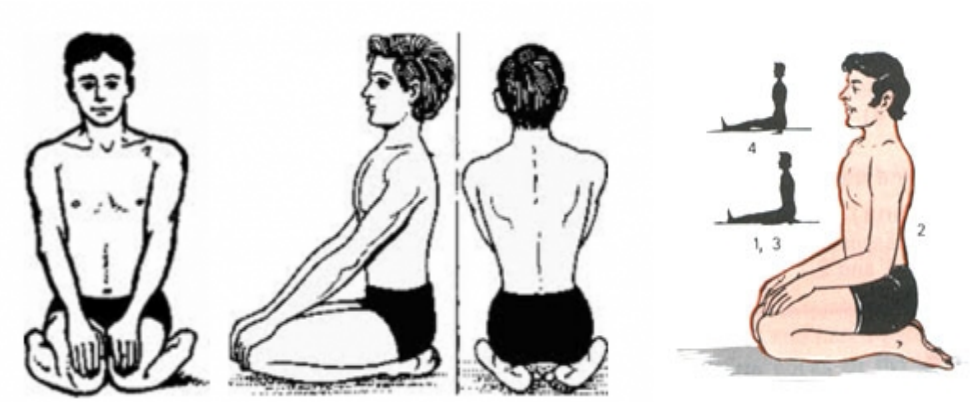
2. b. Mandi Uruthi Asanam (Vajrasanam):

This is one of the meditative postures and this Asanam can be done even immediately after taking food

English name: Kneeling pose of firmness

Technique:

Kneel down from the 1st stage of attention position. Expand the heels and sit on the V –shaped gap between. See that the right great toe overlaps the left one like a pair of scissors while expanding the heels. Maintain the neck and the spinal column in an erect position.



Benefits:

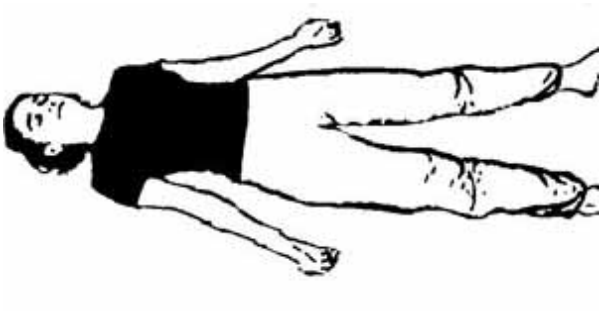
- Increases digestive power
- Relieves constipation
- Produces good appitite
- Strengthens shoulders, knee joints, ankle joints and hip joints
- Refreshes the soft parts of the abdomen
- Strengthens the spinal cord and spinal column
- Maintains good bloodsupply to thyroid and parathyroid glands
- Vajrasanam alters the flow of blood and nervous impulses in the pelvic region and strengthens the pelvic muscles.
- It is a preventative measure against hernia and also helps to relieve piles.
- It increases the efficiency of the entire digestive system, relieving stomach ailments such as hyperacidity and peptic ulcer.
- It reduces the blood flow to the genitals and massages the nerve fibers which feed them, making it useful in the treatment of dilated testicles and hydrocele in men.

- It is a very important meditation posture because the body becomes upright and straight with no effort. It is the best meditation asana for people suffering from sciatica and sacral infections.
- it is the best stretch for quadriceps muscle groups.

3. Shanthi Asanam (Savasanam):

English Name: corpse pose

This posture is so named in the summit of this posture, one observes a motionless state (except breathing) like that of deadbody.



Technique:

Lie down on the back on a nice bedspread spread out on a floor with an even surface. With palms facing upwards on the sides half a foot apart fromthe body. Leaving half a foot gap in between the heels, leep the legs in a relaxed manner.by allowing the head to turn freely to left to right side, keep the head and neck in a relaxed manner. Keep the eyes gently closed. Maintain normal breathing. Keeping the whole body from head to foot in a relaxed manner. Observe this asanam for 15 to 30 minutes or even more, if necessary.

Benefits:

- Relieves physical and mental tiredness
- One must do this asanam lastly after performing all other asanams and may maintain this till the physical and mental tiredness resulting from performing a number of asanams get relieved
- If hard physical labourers do this asanam as soon as they return home from work, it refreshes the body and relieves tiredness.
- Sound sleep ensues if one observes this asanam for about 10 minutes before retiring to bed. Calms the brain and helps relieve stress and mild depression

- Relaxes the body
- Reduces headache, fatigue, and insomnia
- Helps to lower blood pressure
- Allows the body time to process information at the end of a class.

4. Pranayamam:

The perfect and scientific art of controlling one's breathing is called Pranayamam. It is also called Vaasi or Vaasiyogam. By bringing to control the breathing that goes normally, automatically and in a regular rhythm and fixing the duration and amount of breathing differently as described by Siddhars, different types of Pranayamam are devised.

Pranayamam is one of the rejuvenation techniques which prolong one's lifetime. This is indicated by Thirumoolar as follows:

"ஏற்றி இறக்கி இருகாலும் பூரிக்கும்
காற்றை பிடிக்கும் கணக்கறி வாரில்லை
காற்றை பிடிக்கும் கணக்கறி வாளர்க்குக்
கூற்றை உதைக்கும் குறியது வாமே"

ஏற்றி இறக்கி denotes the act of increasing or decreasing the quantity of air inspired during respiration. இருகாலும் பூரிக்கும் denotes saturating the two lungs with the vital air by inspiring through the nostrils. In this காற்றை பிடிக்கும் கணக்கறி வாளர் is the one who is engaged in the practice of Pranayamam. கூற்று means Yaman, the one who takes the life from the body. கூற்றை உதைக்கும் குறி means that Pranayamam is the means of preventing Yaman from approaching the one who practices it.

Benefits:

- Pranayamam not only useful in the treatment of diseases of lungs and respiratory tract but proves beneficial as a main or supportive therapy in the treatment of diseases of skin, nervous system incluing brain, and diseases of the mind.
- It is useful in developing body resistance and also in increasing the memory and mental concentration.
- It removes bad odour and renders sattviga gunam (good characters) predominant

4. a. Mathrika Pranayamam:

Technique:

Sit in Sukhasanam or Padmasanam observing Pambu mutthirai. Inhale through both the nostrils slowly and steadily as much as possible raising the shoulders simultaneously at the same pace. Without holding the breath, start exhaling in a similar manner simultaneously depressing the shoulders at the same pace. This is counted as 'one' and this process may be repeated 30 to 50 times both morning and evening before food. This Pranayamam can be done in the afternoon and night too. After getting well trained in this, one can do this more effectively by involving the muscles of abdomen and chest. This technique is called Mathrika Pranayamam.

Timing is very important in this Pranayamam. One must see to it that the duration of exhalation is equal to that of inhalation (i.e., expiratory phase = inspiratory phase)

Benififs:

- Ensures increased supply of Pranic energy to lungs
- Purifies blood
- Increases efficiency of exercise
- Increases appitite and power of digestion
- Prevents/cures skin and nervous diseases
- Proves useful as a supportive therapy in the diseases of lungs
- Increases memory power
- Produces briskness

4. b. Nithirai Pranayamam:

English Name :(Sleeping Pranayamam)

Technique:

1. Sit on a bedspread or a smooth mat in sukhasanam or padmasanam with Pambu Muthirai (Bairava Muthirai) or Chin Muthirai.
2. Close your eyes and concentrate on your breathing.
3. Through both nostrils breath in slowly, steadily and gradually to the maximum at the same time calculating the total time taken for this Poorakam (inspiration) by counting inwardly as 1, 2. 3 ….at the same pace throughout.

4. As soon as the Poorakam is over, start rechakam (expiration) observing the same technique explained in 3 but see to it that the time taken for expiration is only half the time taken for inspiration.
5. Repeat the technique 30 to 40 times.

N.B: The above description is based on the teachings of Yogi S. A. A. Ramiah

Benefits:

- Induces sleep.
- Relieves stress and other symptoms like headache, heaviness of head, tiredness.

4. c. Omkhara pranayamam:

Technique:

1. Sit on a bedspread or a smooth mat in sukhasanam or padmasanam with Pambu Muthirai (Bairava Muthirai) or Chin Muthirai.
2. Close your eyes and concentrate on your breathing.
3. Through both nostrils breath in slowly, steadily and gradually to the maximum at the same time chanting the manthiram AUM in a such a way that the sound 'A' (i.e Akaram) occupies the 50% of the time taken for inspiration and 'U'(i.e Ukaram) 20% and 'M' (i.e Makaram) the remaining 30% of the time taken in order.
4. Repeat the process again and again for 30 to 40 times

Benefits:

- Relieves stress.
- Ensures sound sleep.
- Increases memory power and concentration.
- Increases exercise tolerance.
- Nourishes the nervous system.
- Purifies blood.

Conduct of the study:

The trial drug Yaanai Nerunjil Chooranam (Internally) and Pathiyaa Lebanam **(**Externally**)** are given for 48 days .10 IP patients are given Yogam treatment along with their internal medicine. The remaining 30 Out-Patients didn't receive Yogam treatment. The results are compared at the end of the study. The results are,

10 In-Patients, Who received Yogam treatment along with trial drugs showed good prognosis when compared to the Out- Patients who didn't receive any Yogam treatment.

All the 10 In-Patients developed repigmentation in the lesions.

Among 30 Out-Patients, 25 patients developed repigmentation in the lesions and the remaining 5 Out-Patients didn't develop any repigmentation.

Discussion:

Hence Yogam treatment along with the trial drugs is more effective in the treatment of Venpulli when compared to the treatment with the trial drugs alone.

Result:

Yogam treatment proved to be effective in producing the repigmentation in Venpulli in this clinical trial.

MATERIALS AND METHODS

The study on Venpulli was carried out in the inpatient and Out patient department of Sirappu Maruthuvam in Ayothidoss Pandhithar Hospital ,National Institute of Siddha ,Chennai-47.

The disease ‘’Venpulli’’ has been dealt in the Siddha Maruthuvam Sirappu .one among the 18 types of Kuttam .Patients were selected according to the clinical features

STUDY DESIGN :

A Pilot clinical trial

STUDY PLACE:

OPD and IPD of Ayothidoss Pandithar Hospital,

National Institute of Siddha, Tambaram Sanatorium, Chennai-47.

STUDY PERIOD:

12 months

SAMLE:

Patients having Venpulli noi reporting at Ayothidoss Pandithar Hospital, National Institute of Siddha

SAMPLE SIZE:

40 patients (30 OP +10 IP).

Out of the above, 10 patients were given Yogam treatment along with trial medicines and the remaining were given medicines only.

TRIAL DRUGS:

Internal medicine : Yaanai Nerunjil Choornam

(Reference: Pathartha guna vilakkam(page no 627-628)

Dosage: 2-5gm (twice a day)

Vehicle: Water

Duration: 48 days

External medicine: Paththiyaa Lebanam

(Reference: Agathiyar vaithiya pillai tamil, Page no 78)

Dosage : Q.S

STANDARD OPERATING PROCEDURE:

Source of raw drugs:

The required raw drugs for the preparation of Yannai Nerunjil Choornam and Pathiyaa Lebanam were purchased from a well reputed country shop and the purchased drugs were authenticated by the faculty members in charge of Gunapadam laboratory at National Institute of Siddha.

Method of Purification of Raw drugs:

The whole plant is wiped by a clean, dry, cotton cloth.

Internal drug:

Yaanai Nerunjil Choornam

Ingredients:

Yaanai Nerunjil Samoolam

Method of preparation:

The purified Yaanai Nerunjil Samoolam are dried in the shadow. The dried samoolam are grinted into fine powder and then it is sieved by using a fine silk cloth (Vasthrakayam). The fine powder is mixed with milk and placed in a cloth which is placed in vessel containing milk and that was closed by another vessel. This instrument is subjected to heat (Pittavial method). Then it is dried and then filtered by a cotton cloth. The fine powder is stored in a clean, dry air tight glass bottle.

External drug:

Paththiyaa Lebanam

Ingredients:

Manjal kadukkai (Terminalia chebula)	-35 gm
Kadugu (Brassica juncea)	-35 gm
Vellalari verpattai (Nerium odorum)	-35 gm
Veppaver pattai(Azadirachta indica)	-35 gm
Karbogarasi(Psoralea cordifolia)	-35 gm
Induppu (Sodium chloride impura)	-35 gm

Method of preparation:

The above said raw drugs are powdered and then it is grinded in a Kalvam by adding cow urine and made as a paste form. This paste used as externally.

Ref : Agasthiyar Vaithiya Pillai Tamil

Drug Storage:

The trial drugs **Yaannai Nerungil Choornam** is stored in clean and dry glass bottles and **Pathiyaa Lebanam** is stored in clean and dry glass bottles.

Dispensing:

The Choornam is given in packets and Lebanam is given in packets.

YOGAM TECHNIQUES ADVISED FOR THE TRIAL:

- Gnayiru Vanakkam (Sun salutation)
- Meditative postures
    - Padmasanam
    - Vajrasanasm
    - savasanam
- Pranayamam (Mathrika Pranayamam and Omkhara Pranayamam, Nithirai Pranayamam-SOS)

Reference:

1) *Yogam by Dr.R.S.Ramaswamy, --Siddha Maruthuvam Special areas-- Published by Tamil Valarchi Kazhagam, Chennai -5.*
2) *Yogasana –A comprehensive description about the Yogasana--- Published by Morarji Desai National Institute of Yoga 1st Edition (2008)*
3) *Pranayama - A comprehensive description about the Pranayama--- Published by Morarji Desai National Institute of Yoga 1st Edition (2008)*
4) *Yogic Management of Respiratory Disorders--- Published by Morarji Desai National Institute of Yoga 1st Edition (2008) 1st Edition (2010)*

SUBJECT SELECTION:

Patients reporting with symptoms Venpulli were screened by screening Proforma then they will be enrolled for the study.

INCLUSION CRITERIA

1. Age: between 18 - 60 years.
2. Sex: Both male and female
3. depigmented patches without any structural changes in any part of the body.
4. Patient willing to sign the informed consent stating that he/she will consciously stick to the treatment during 48days but can opt out of the trial of his/her own conscious discretion
5. Willing laboratory investigations whenever required.
6. Willing for photograph whenever required with his consent.

EXCLUSION CRITERIA:

1. Albinism
2. Thyroid disorders
3. Leprosy
4. STD
5. Burns
6. Pregnancy and Lactation
7. Cardiac diseases
8. Patients with any other serious systemic illness.

WITHDRAWAL CRITERIA

- Intolerance to the drug and development of adverse reactions during drug trial.
- Poor patient compliance & defaulters.
- Patient turned unwilling to continue in the course of clinical trial.

TESTS AND ASSESMENTS

A. Clinical assessment
B. Laboratory investigations
C. Siddha system examination

A. CLINICAL ASSESSMENT:

- Site
- Repigmentation
- Number of lesions
- Colour change
- Appearance of new lesions
- Size and shape of the lesions
- Borders
- Erythema
- Repigmentation of Hair
- Itching

Clinical Assessment of the Lesions:

Parameter	-	+	++	+++	++++
Change in colour	No change	Yellowish tint	Slight contrast between lesion color and surrounding skin color	No contrast between lesion color and surrounding skin color	100% remission in all treated lesions
Change in size	No change	Up to 5 mm reduction in diameter	Up to 10 mm reduction in diameter	More than 10 mm reduction in diameter	
Folliculocentric Repigmentation	No Repigmentation	Up to 5 mm perifollicular Repigmentation	Up to 10 mm perifollicular Repigmentation	More than 10 mm perifollicular Repigmentation	
- No response; +, mild response; ++, moderate response; +++, marked response; ++++, complete response.					

Ref: Journal of European Academy of Dermatology and Venerelogy (JEADV)

B. LABORATORY INVESTIGATIONS:

Blood

Hb

Total RBC Count

ESR

Blood sugar

Kidney Function Tests

Urea

Creatinine

Liver Function Tests

Serum total bilirubin

Direct bilirubin

Indirect bilirubin

Serum Alkaline phosphatases

SGOT

SGPT

Thyroid Profile:

T_3

T_4

TSH

Urine

Urine sugar

Albumin

Deposits

MOTION

Ova

Cyst

SIDDHA SYSTEM EXAMINATION:

1. Naadi

2. Parisam

3. Naa

4.Niram

5. Mozhi

6. Vizhi

7. Malam

8. Moothiram

Neikkuri **:**

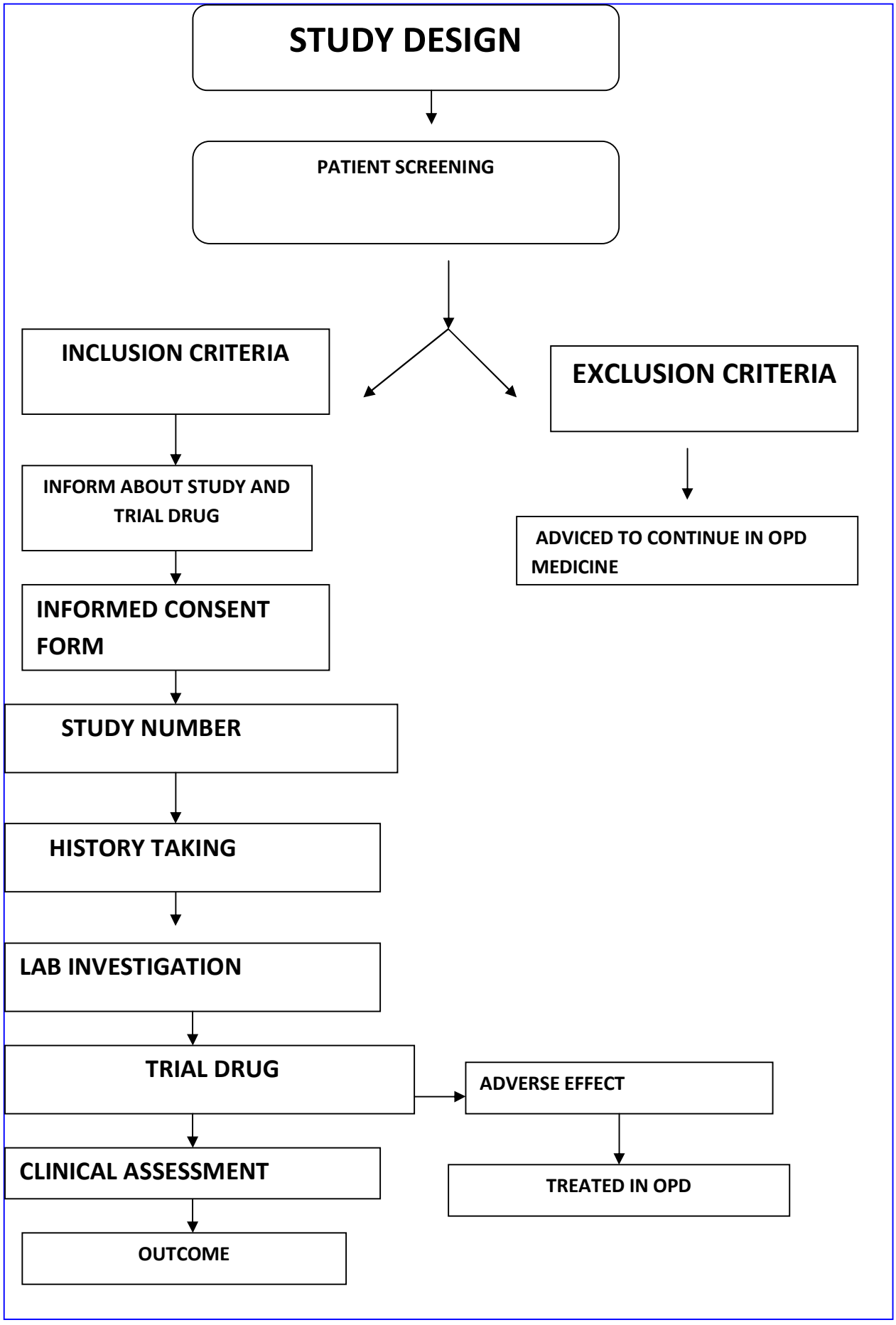
Neerkkuri:

DATA COLLECTION FORMS:

Required information was collected from each patient by using the following forms.

FORMS

FORM I	**:** Screening and Selection Proforma
FORM II	**:** History taking Proforma
FORM III	**:** Clinical Assessment Proforma
FORM III	**:** Laboratory Investigation Proforma
FORM IV	**:** Informed Consent Form
FORM V	**:** Withdrawal Form
FORM VI	**:** Patient Information Sheet
FORM VII	**:** Dietary advice Form
FORM VIII	**:**Adverse Reaction Form


STUDY DESIGN
PATIENT SCREENING
INCLUSION CRITERIA
EXCLUSION CRITERIA
INFORM ABOUT STUDY AND TRIAL DRUG
ADVICED TO CONTINUE IN OPD MEDICINE
INFORMED CONSENT FORM
STUDY NUMBER
HISTORY TAKING
LAB INVESTIGATION
TRIAL DRUG
ADVERSE EFFECT
CLINICAL ASSESSMENT
TREATED IN OPD
OUTCOME

STUDY ENROLLMENT

In this study Patients reporting at the OPD with the clinical symptoms of depigmentation, itching, burning sensation etc were examined clinically for enrolling in the study based on the inclusion and exclusion criteria.

The patients who are going to be enrolled would be informed (Form IV) about the study, trial drug, possible outcomes and the objectives of the study in the language and terms understandable to them.

After ascertaining the patient's willingness, informed consent were obtained in writing from them in the consent form (Form IV). All these patients were given unique registration card in which patients' Registration number of the study, Address, Phone number and Doctors phone number etc. will be given, so as to report easily should any complications arise.

Complete clinical history, complaints and duration, examination findings -- all were recorded in the prescribed Proformas in the history and clinical assessment forms separately. Screening Form- I will be filled up: Form – II, Form – III and Form - IV will be used for recording the patients' history, clinical examination of symptoms and signs and laboratory investigations respectively. Patients will be advised to take the trial drug and appropriate dietary advice (Form VII).

CONDUCT OF THE STUDY:

Purgation:

On the first day of the treatment Purgation with Karudan Kizhangu Ennai - 5 ml, early morning with hot water was given for balancing the deranged Udal Thathukkal.

Treatment:

The next day onwards the trial drugs **Yaanai Nerunjil Chooranam** (Internal) And **Paththiyaa Lebanam (**External**)** are given for 48 days without any break. Out patients are requested to visit once in 7 days in the OPD of Ayothidoss Pandithar Hospital of National Institute of Siddha. At each and every visit clinical assessment is is noted in the prescribed Proforma. For In patients the trail drugs are given for 48 days and the clinical assessment is done daily. 10 IP patients will be given Yogam treatment along with trial medicines. Laboratory investigations are done on the first day, and 48th day of the trial. For IP patients, who are not in a situation to stay in the hospital for a long time, are advised to attend the OPD for further follow- up. Siddha investigations like Neer kuri and Nei kuri will be done and it will be recorded the Proforma, Photographs of Neer kuri and Nei kuri will also be taken on first day, and 48th day. After the end of the treatment,

the patient was advised to visit the OPD for another two months for observing any recurrence of this disease and follow up. Defaulters were not allowed to continue the trail and withdrawn from the study.

DATA ANALYSIS:

After enrolling the patient in the study, a separate file for each patient was opened and all forms were kept in the file. Study No. and Patient No. was entered on the top of file for easy identification. Whenever study patient visits OPD during the study period, the respective patient file will be taken and necessary recordings will be made at the assessment form or other suitable form. The screening forms will be filed separately. The recorded Datas were monitored by Head of the Department and All datas were analysed with the help by Senior Research Officer (Statistics) for logical errors and incompleteness of data to avoid any bias. Then final report was generated. No modification in the results is permitted for unbiased reports.

GRADING:

GRADE 1 :Turning to normal skin.

GRADE 2 :Repigmentation in /Reduction in size of all lesions.

GRADE 3 :Repigmentation in/Reduction in size of selected lesions.

GRADE 4 :Static-remains the same-(no further lesions formed).

GRADE 5 :New lesions appearing.

OUTCOME

Primary Outcome:

The therapeutic efficacy of trail drugs were assessed - repigmentation by appearance of dots and reduction in the size of the lesion

Secondary Outcome:

The effect of Yogam in the treatment of Venpulli is assessed - repigmentation by appearance of dots and reduction in the size of the lesion

ADVERSE EFFECT/SERIOUS EFFECT MANAGEMENT:

If the trial patient develops any adverse reactions, he/she was immediately withdrawn from the trial and proper management given in OPD of National Institute of Siddha and the same were informed to the Pharmacovigilance committee of NIS.

ETHICAL ISSUES

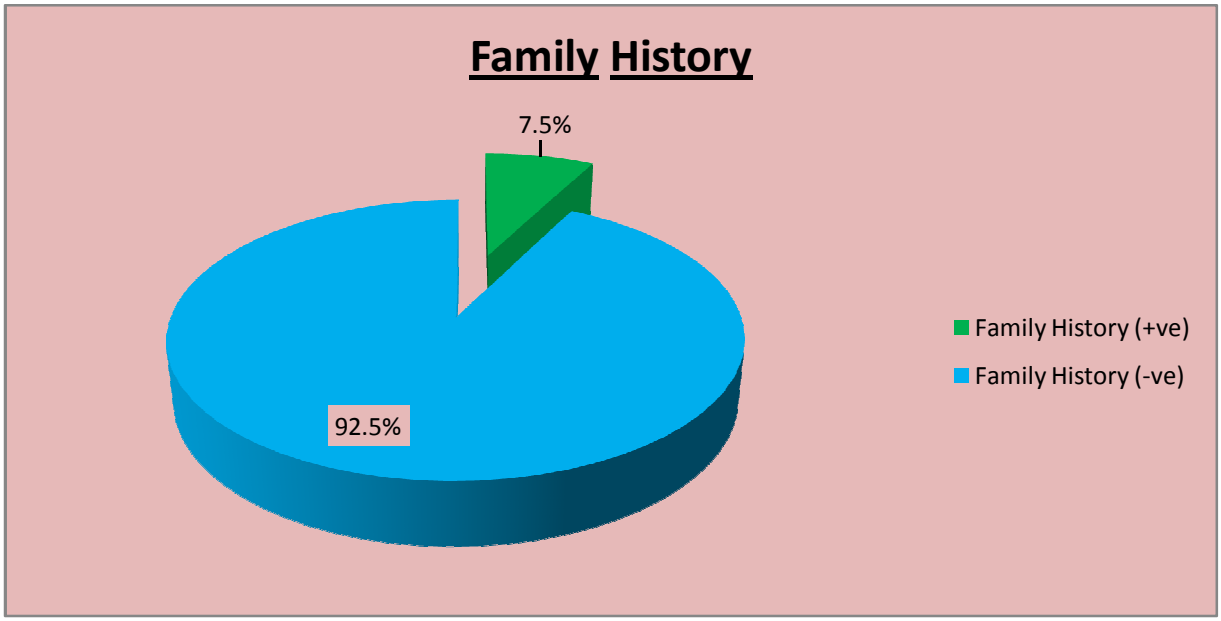
1. To prevent any infection, while collecting blood sample from the patient, only disposable syringes, disposable gloves, with proper sterilization of lab equipments were used.
2. No other external or internal medicines will be used other than the trial drug, for treating Venpulli. There were no infringement on the rights of patient.
3. The data collected from the patients were kept confidential. The patients were informed about the diagnosis, treatment and follow-up.
4. After getting written consent of the patient only (through consent form in their understandable language) they will be enrolled in the study.
5. Treatment would be provided free of cost.
6. Any serious adverse reactions happened they were referred to the OPD of National Institute of Siddha for alternative treatment.

RESULTS AND OBSERVATION

1. Family History
2. Gender distribution
3. Age Distribution
4. Kaalam distribution
5. Occupational Status
6. Seasonal variations
7. Thinai
8. Socio-economic Status
9. Yakkai Illakanam
10. Gunam
11. Dietary Habits
12. Udal kattugal
13. Distribution of Mukkutram
14. Envagai Thervugal
15. Neerkkuri
16. Neikkuri
17. Modern classification
18. Change in colour after treatment
19. Reduction in size after treatment
20. Repigmentation pattern after treatment
21. Comparison
22. Results after treatment

1. **FAMILY HISTORY:**

Sl. No	Criteria	No of Cases	Percentage
1	Family History (+ve)	3	7.5%
2	Family History (-ve)	37	92.5%

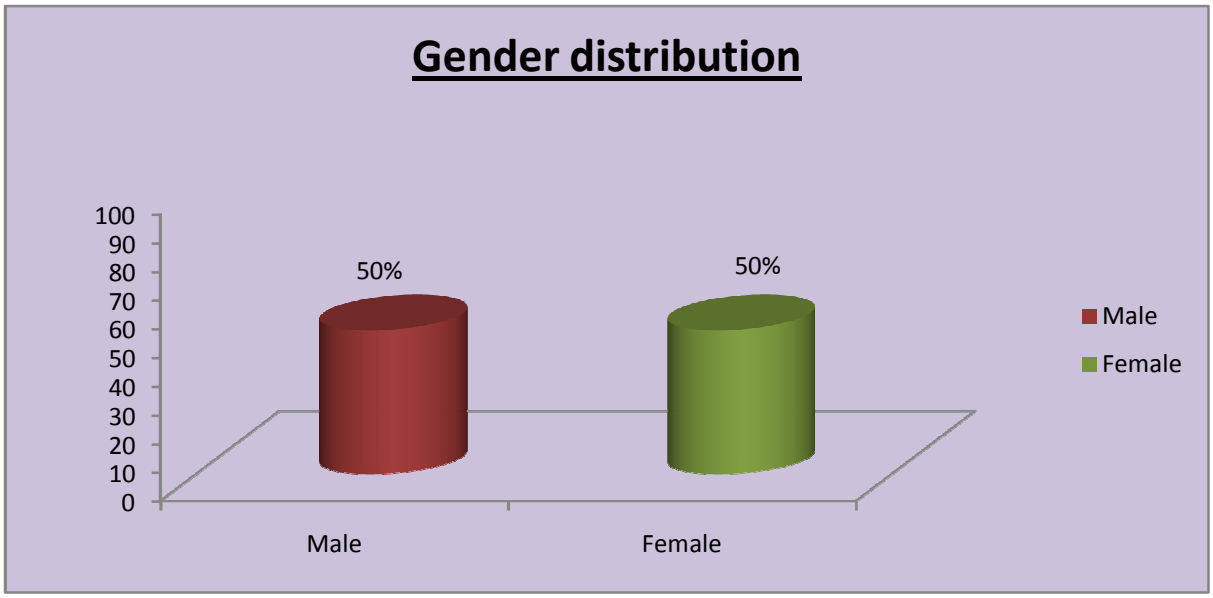


Observation

90% of the patients showed negative family history.

2. **GENDER DISTRIBUTION:**

Gender	No of Out Patients	No. of In Patients	Total	Percentage
Male	15	5	20	50
Female	15	5	20	50
Total	30	10	40	100

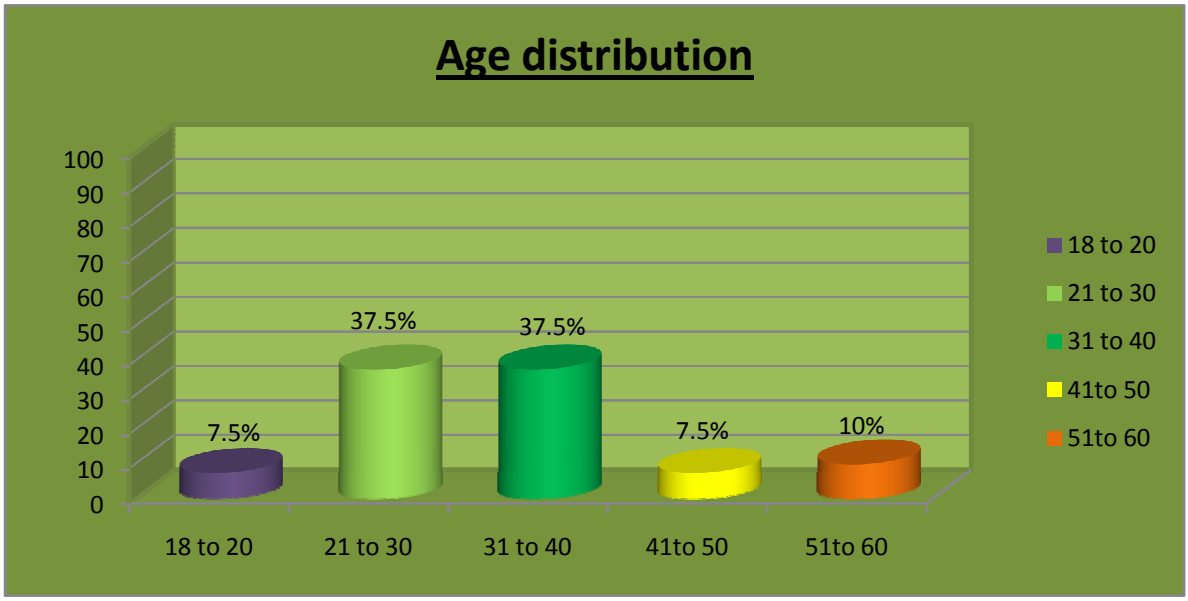


Inference:

Among 40 cases, 50% were Male, 50% cases were Female.

3. **AGE DISTRIBUTION:**

Age in Years	No. of Out Patients			No. of In Patients			Total	Percentage
	Male	Female	Total	Male	Female	Total		
18 to 20	2	1	3				3	7.5
21 to 30	5	7	12	2	1	3	15	37.5
31 to 40	6	5	11	2	2	4	15	37.5
41to 50	2	1	3	0			3	7.5
51to 60		1	1	1	2	3	4	10
Total	30			10			40	100



Inference:

Among 40 cases,7.5 % of the cases belonged to the age group of 18-20 years, 37.5% of cases 21-30 years37.5%of cases 31-40 years, and 7.5% of cases 41-50 years,10%of cases 51-60years.

4. KAALAM DISTRIBUTION (According to Age)

In Siddha literature human life has been divided into three periods as follows

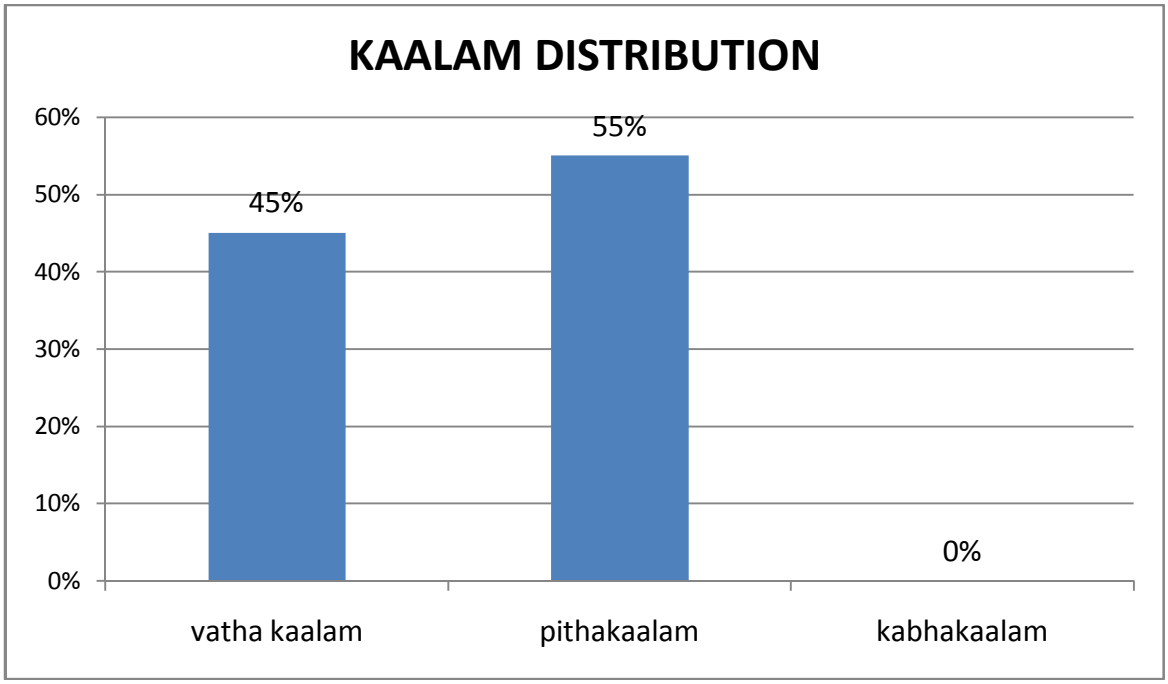
1 Vaatham

2 Pitham

3 Kabam

The duration of each period is said to be 33 years

Sl No	Kaalam	No of Cases	Percentage
1	Vaatha Kaalam (1-33 Years)	18	45%
2	Pitha Kaalam (34-66 years)	22	55%
3	Kaba Kaalam (67-100 years)	0	0%



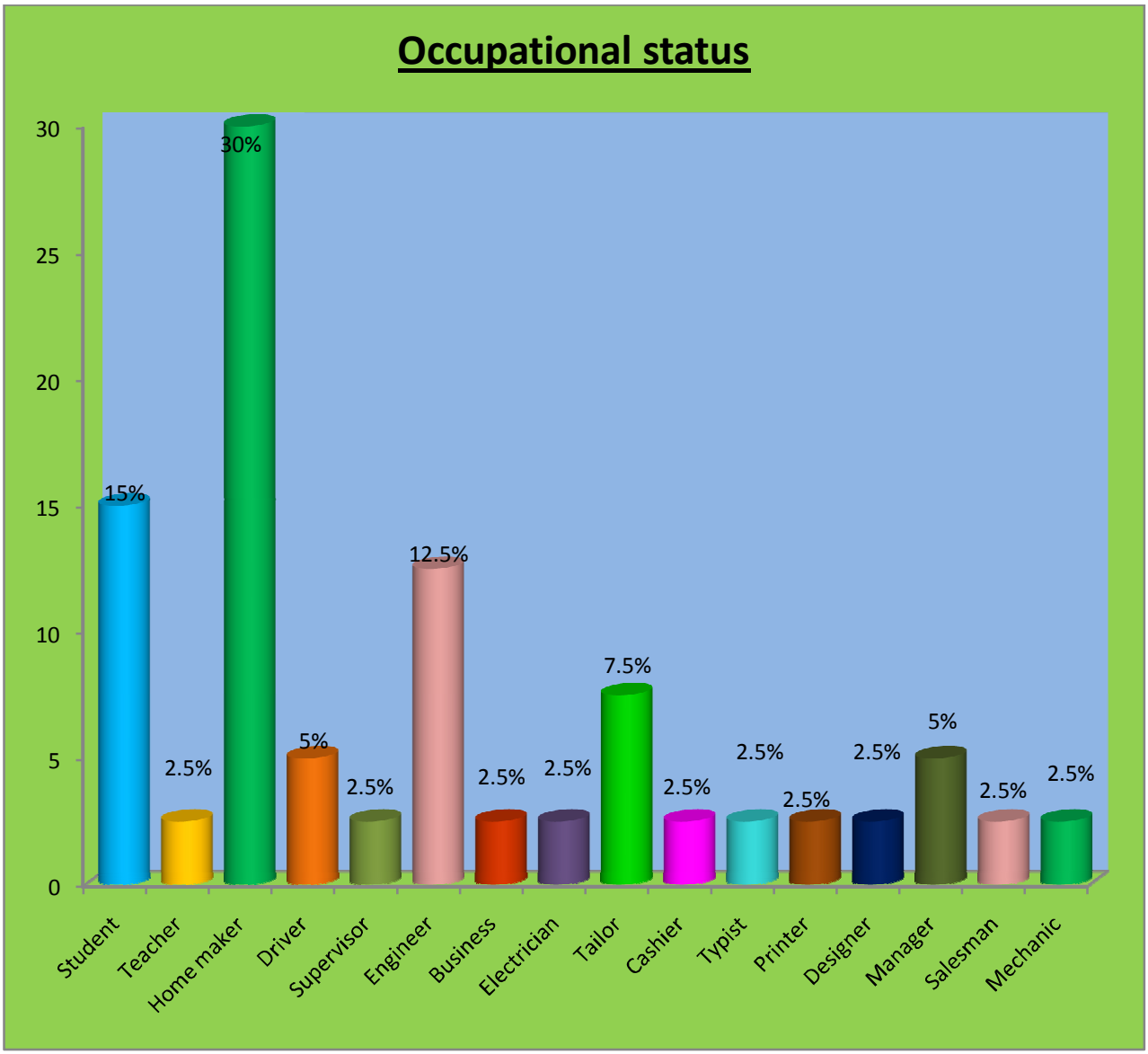
Observation

18cases(45%) reported in Vaatha Kaalam, 22Cases (55%) reported in Pitha Kaalam and none of the cases reported in Kaba Kaalam.

5. **OCCUPATIONAL STATUS:**

Occupation	No of Out Patients			No of In Patients			Total	Percentage
	Male	Fema	Total	Male	Female	Total		
Student	3	2	5	1	0	1	6	15
Teacher	0	0	0	0	1	1	1	2.5
Home maker	0	10	10	0	2	2	12	30
Driver	1	0	1	1	0	1	2	5
Supervisor	0	0	0	1	0	1	1	2.5
Engineer	3	0	3	1	1	2	5	12.5
Business	0	0	0	1	0	1	1	2.5
Electrician	1	0	1	0	0	0	1	2.5
Tailor	0	2	2	0	1	1	3	7.5
Cashier	1	1	1	0	0	0	1	2.5
Typist	0	0	1	0	0	0	1	2.5
Printer	1	0	0	0	0	0	1	2.5
Designer	1	0	1	0	0	0	1	2.5
Manager	2	0	2	0	0	0	2	5
Salesman	1	0	1	0	0	0	1	2.5
Mechanic	1	0	1	0	0	0	1	2.5
Total			30			10	40	100

5. OCCUPATIONAL STATUS:

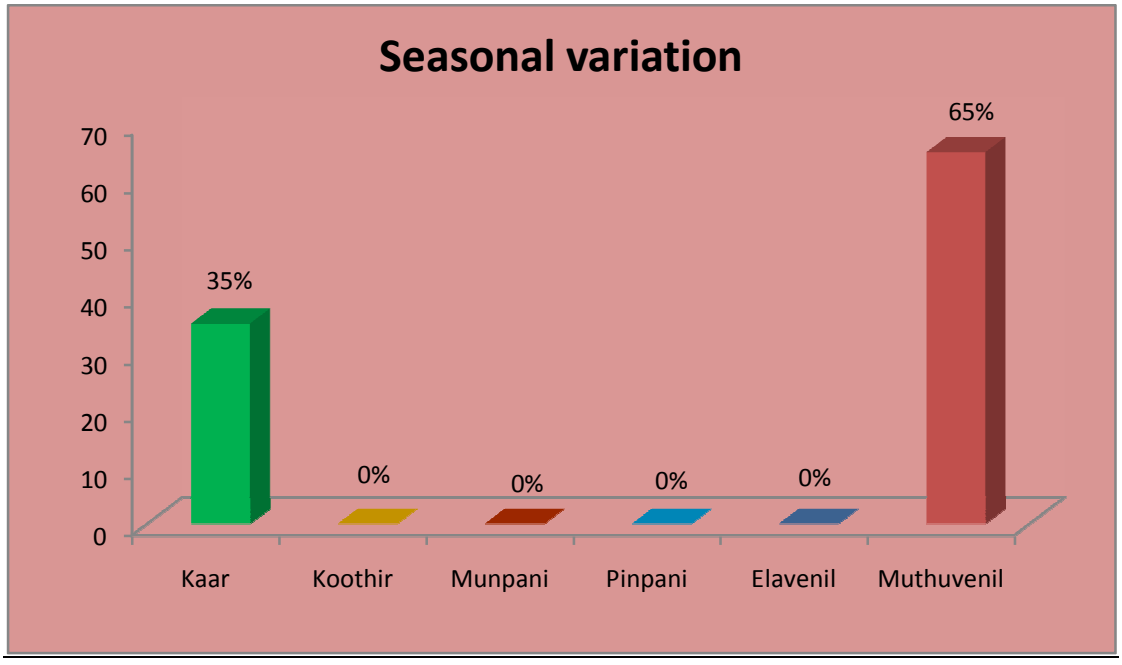


Observation:

The majority of patients in this study were home makers ,and students.

6. SEASONAL VARIATIONS

Season	No. of Out Patients			No. of In Patients			Total	Percentage
	Male	Female	Total	Male	Female	Total		
Kaar	5	4	9	3	2	5	14	35
Koothir	-	-	-	-	-	-	-	
Munpani	-	-	-	-	-	-	-	
Pinpani	-	-	-	-	-	-	-	
Elavenil	-	-	-	-	-	-	-	
Muthuvenil	10	11	21	2	3	5	26	65
Total	30			10			40	100



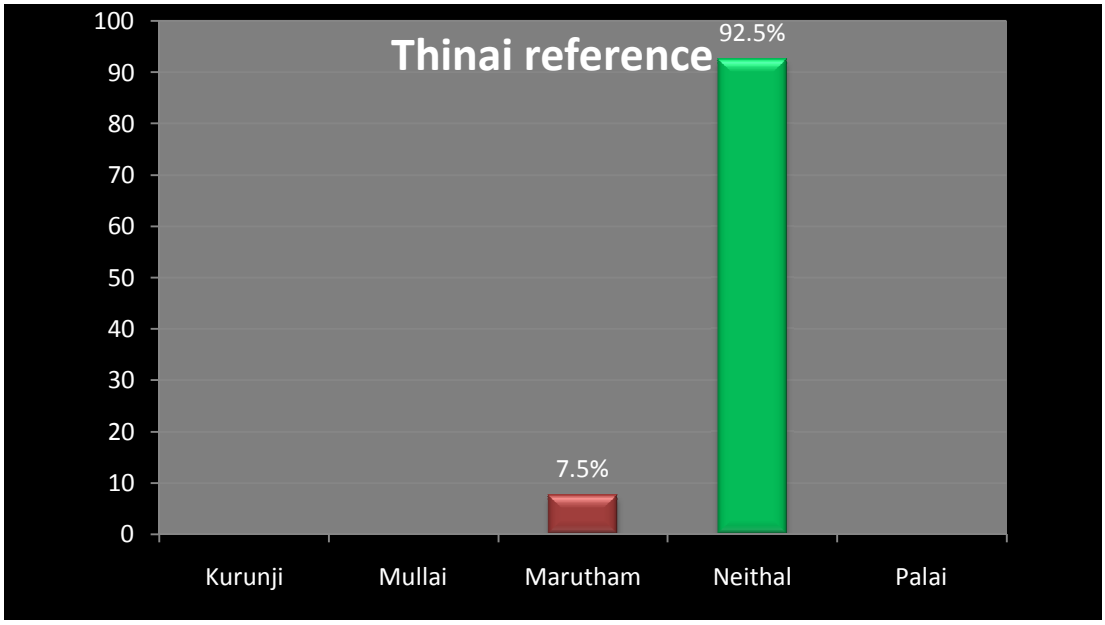
Inference:

In Siddha system, a year is divided into 6 Paruva Kaalangal (Seasons).Out of 40 cases, 14patients (35%) were admitted in Kaar Kaalam, 26 patients (65%) were admitted in Koothir Kaalam.

6. **THINAI:**

Thinai	No. of Out Patients			No. of In Patients			Total	Percentage
	Male	Female	Total	Male	Female	Total		
Kurinji	-	-	-	-	-	-	-	-
Mullai	-	-	-	-	-	-	-	-
Marutham	2	1	3	-	-	-	3	7.5
Neithal	13	14	27	5	5	10	37	92.5
Paalai	-	-	-	-	-	-	-	-
Total	30			10			40	100

THINAI

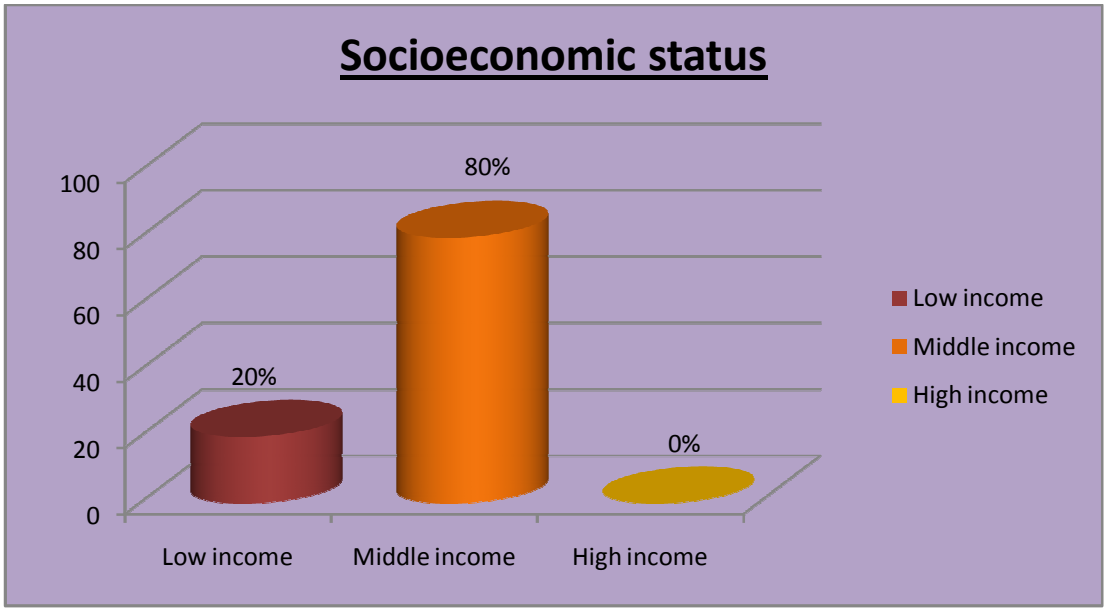


Inference:

Among the 40 patients, 3 (7.5%) were from Marutham and 37 (92.5%) were from Neithal thinai.

7. SOCIO - ECONOMIC STATUS:

Socio economic status	No. of Out Patients			No. of In Patients			Total	Percentage
	Male	Female	Total	Male	Female	Total		
Low income	4	I	5	2	1	3	8	20
Middle income	20	5	25	5	2	7	32	80
High income		-		-	-	-	-	-
Total	30			10			40	100



Inference:

Out of 40 cases 20% of cases were poor, 80% cases were from middle class.

8. **YAAKAI ILAKKANAM**

Sl. No	Yaakai Ilakkanam	No. of Cases	Percentage
1	Vaatha Udal	0	0.00%
2	Pitha Udal	0	0.00%
3	Kaba Udal	0	0.00%
4	Thontha Udal	40	100.00%

Observation

All the patients (100%) had ThonthaUdal.

9. **GUNAM (QUALITY AND CHARACTERS)**

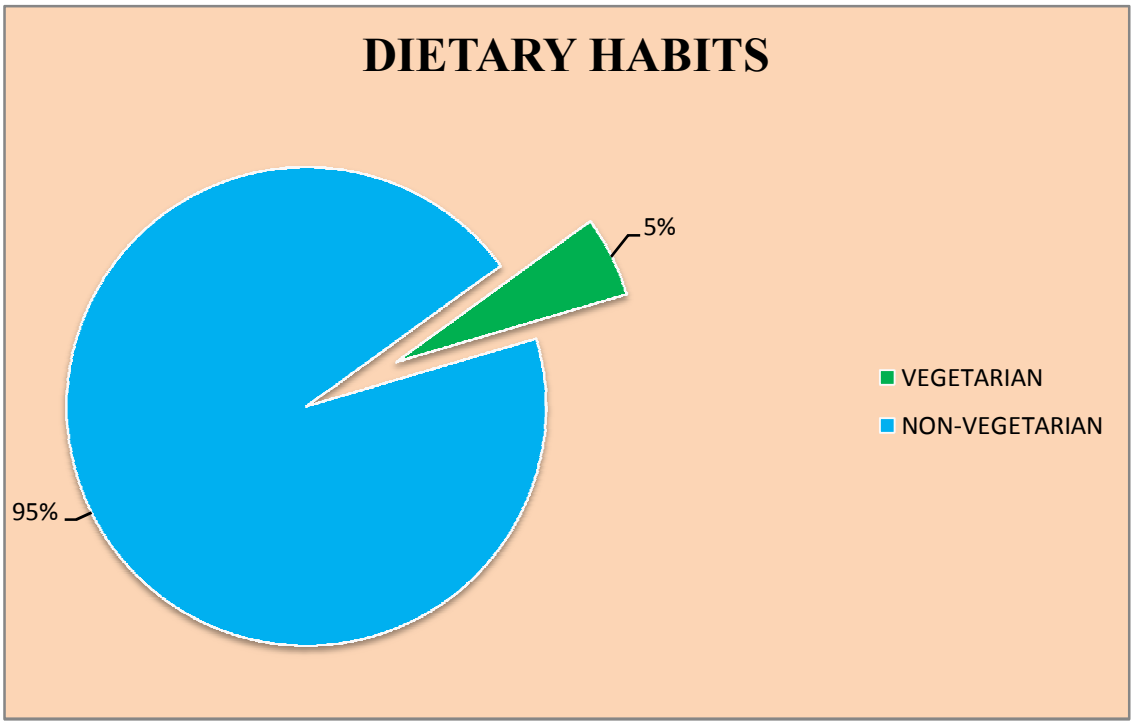
Sl. No	**Gunam**	**No of Cases**	**Percentage**
1	Sathuva Gunam	0	0.00%
2	Rajo Gunam	36	90%
3	Thamo Gunam	4	10%

Observation

90% of the patients had “Rajo Gunam” and the remaining 10% “Thamo Gunam

10. **DIETARY HABITS:**

Dietary habits	No of Out Patients			No of In Patients			Total	Percentage
	Male	Female	Total	Male	Female	Total		
Vegetarian	2		2	-		0	2	5
Non-vegetarian	13	15	28	5	5	10	38	
Total	30			10			40	100



Inference:

Out of 40 cases ,5% of cases were Vegetarians and 95% cases were Non-vegetarians.

11. **UDAL KATTUGAL**

The Seven Udal Kattugal which constitute our body structure and help to maintain the normal physiological functions get changed in Pathological conditions.

Sl. No	UdarKattugal	No of Cases	Percentage
1	Saaram	40	100.00%
2	Senneer	40	100.00%
3	Oon	0	0.00%
4	Kozhuppu	0	0.00%
5	Enbu	0	0.00%
6	Moolai	0	0.00%
7	Sukkilam/Suronitham	0	0.00%

Among 40 patients, Saaram and Seneer were affected in all the cases.

12. **DISTRIBUTION OF MUKKUTRAM**

The derangement of Vatham, Pitham and Kabam in venpulli are as follows

VATHAM

Sl. No	Classification of Vatham	No of Cases	Percentage
1	Pranan	0	0.00%
2	Abanan	0	0.00%
3	Udhanan	0	0.00%
4	Samanan	40	100.00%
5	Viyanan	40	100.00%
6	Nagan	0	0.00%
7	Koorman	0	0.00%
8	Kirukaran	0	0.00%
9	Devathathan	0	0.0%
10	Dananjayan	0	0.00%

Samanan and Viyanan was found to be affected in all the 40 patients.

PITHAM

Sl. No	Classification of Pitham	No. of Cases	Percentage
1	Anarpitham	0	0.00%
2	Ranjakam	40	100.00%
3	Sathakam	0	0.00%
4	Alosakam	0	0.00%
5	Prasakam	40	100.00%

Prasakam was affected in all the cases patients. Ranjakam too was affected in 40% of the patients.

KABAM

Sl. No	Classification of Kabam	No of Cases	Percentage
1	Avalambagam	0	0.00%
2	Kilethagam	0	0.00%
3	Pothagam	0	0.00%
4	Tharpagam	0	0.00%
5	Santhigam	0	0.00.%

No changes reported in kabam in all patients.

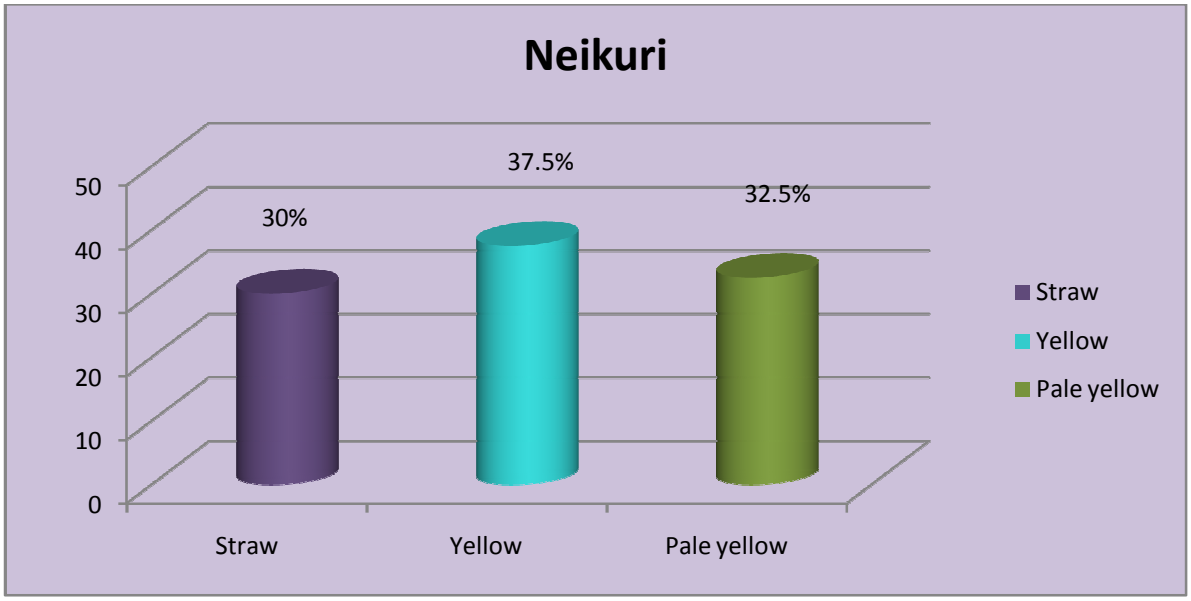
13. **EN VAGAI THERVUGAL**

Sl. No	En Vagai Thervugal	No. of Cases	Percentage
1	Naa	0	0.00%
2	Niram	40	100.00%
3	Mozhi	0	0.00%
4	Vizhi	0	0.00%
5	Sparisam	40	100.00%
6	Malam	0	0.00%
7	Moothiram	0	0.00%
8	Naadi		
	a. Vathapitham	21	52.50%
	b. Pithavatham	19	47.50%

In En vagaithervugal, Niram and Sparisam were found affected in all the 40 cases. The Naadinadai seen in venpulli patients were Vathapitham 52.50 %, Pithavatham 47.50 %.

14. **NEERKKURI:**

Niram	No. of Out Patients			No. of In Patients			Total	Percentage
	Male	Female	Total	Male	Female	Total		
Straw	8	2	10	8	2	10	12	30
Yellow	9	4	13	2	3	5	15	37.5
Pale yellow	6	5	11	3	1	4	13	32.5
Total	34			10			40	100

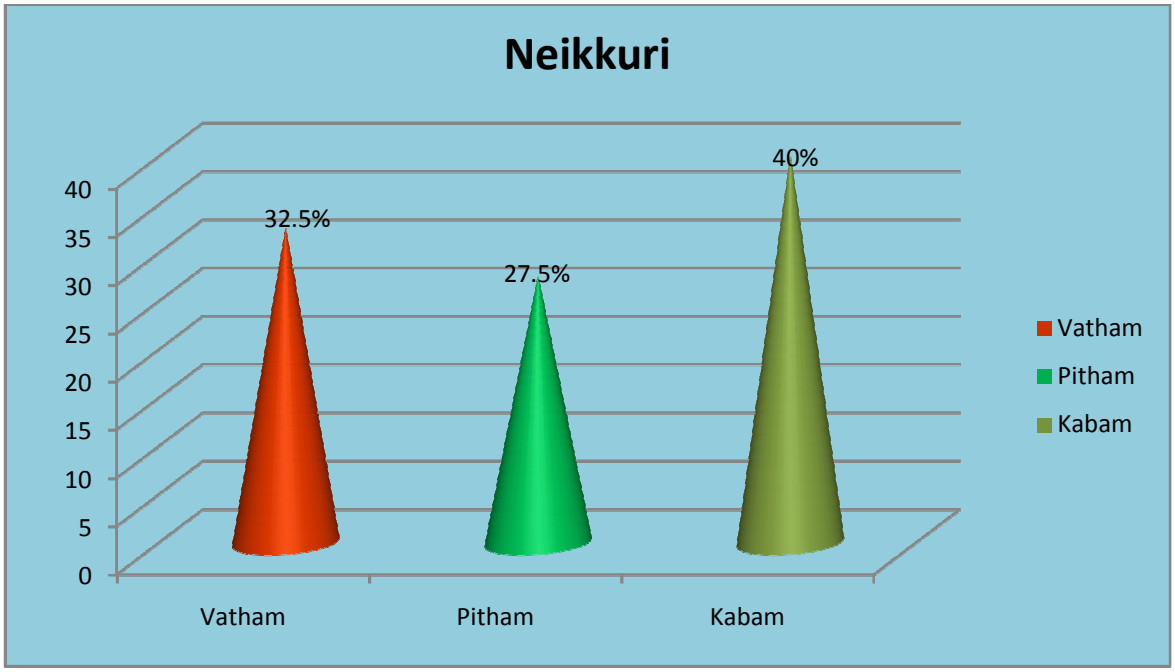


Inference:

Out of 40 cases, colour of the urine for 30% of the patients were straw coloured, 37.50% were yellow coloured, 32.50% were Pale yellow coloured.

15. **NEIKKURI:**

Neikkuri	No of Out Patients			No of In Patients			Total	Percentage
	Male	Female	Total	Male	Female	Total		
Vaatham	8	2	10	3	0	3	13	32.5
Pitham	6	3	9	1	1	2	11	27.5
Kabam	9	2	11	3	2	5	16	40
Total	30			10			40	100

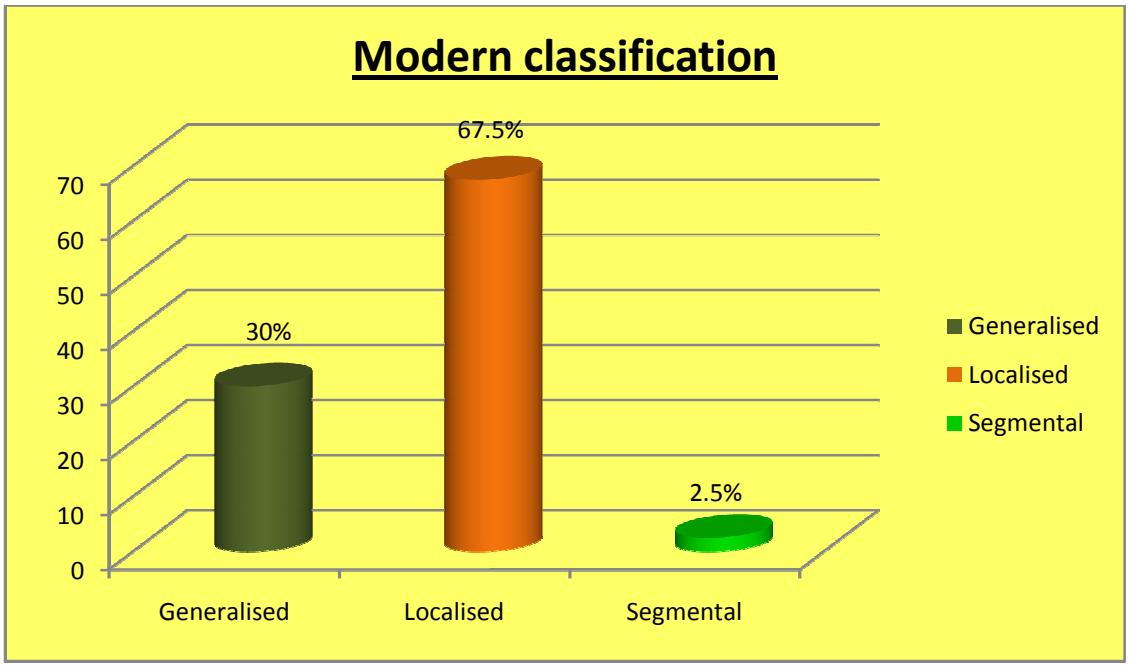


Inference:

Out of 40 cases 30% of patients showed Vaatham type of neikkuri pattern, 30% of patients showed Pitham type of neikkuri pattern and 40% of patients showed Kabam type of neikkuri pattern.

16. **MODERN CLASSIFICATION**:

Classification	No of Out Patients			No of In Patients			Total	Percentage
	Male	Female	Total	Male	Female	Total		
Generalised	1	1	2	6	4	10	12	30
Localised	21	6	27	-	-	-	27	67.5
Segmental	1	-	1	-	-	-	1	2.5
Total	30			10			40	100

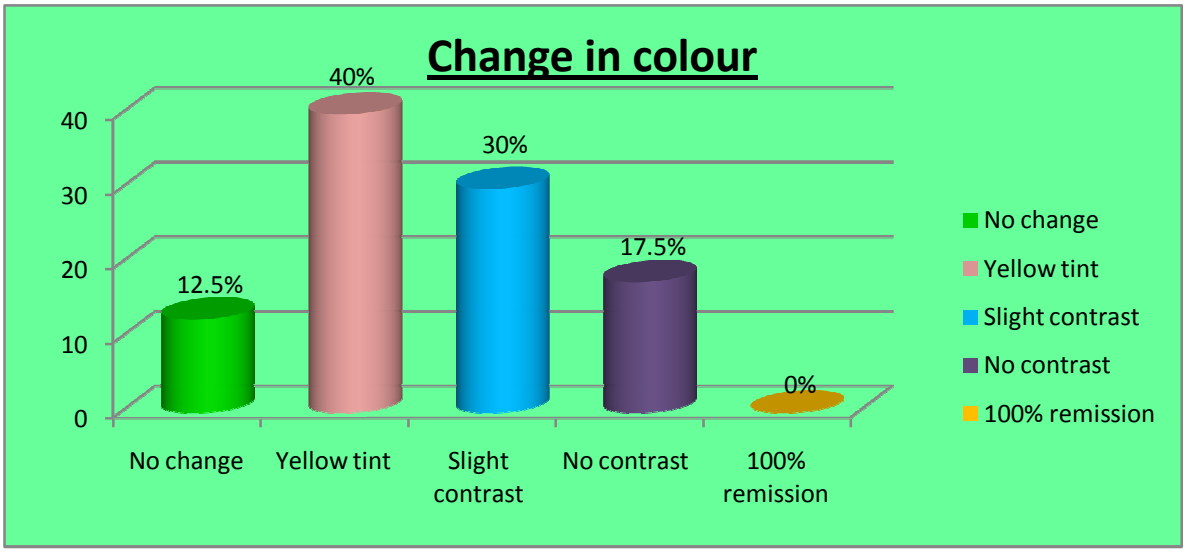


Inference:

Out of 40 cases generalised Vitiligo was seen in 30% cases, localized Vitiligo in 67.5% cases, segmental Vitiligo in 2.5% cases.

17. **CHANGE IN COLOUR AFER TREATMENT:**

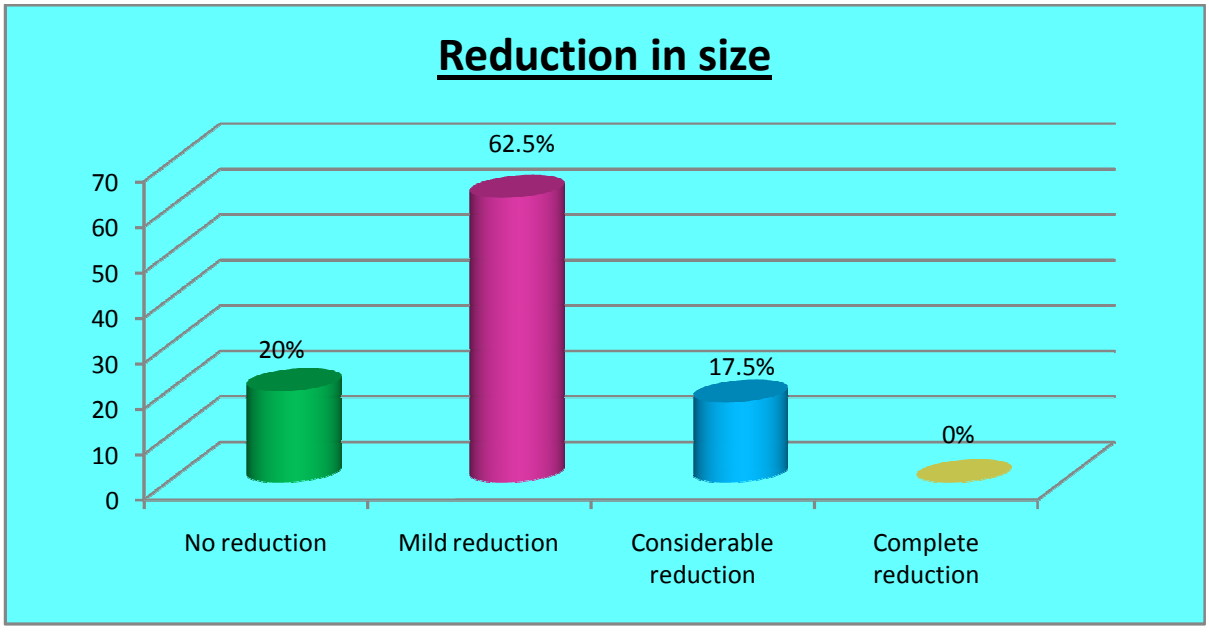
Change in colour	No. of Out Patients			No. of In Patients			Total	Percentage
	Male	Female	Total	Male	Female	Total		
No change	4	1	5				5	12.5
Yellowish tint	13	1	14	1	1	2	16	40
Slight contrast between lesion colour and surrounding skin colour	5	3	8	3	1	4	12	30
No contrast between lesion colour and surrounding skin colour	1	2	3	3	1	4	7	17.5
Total	30			10			40	100



Inference: Among 40 cases no colour change was seen in 5 (12.5%) cases, yellowish tint colour change was seen in 16 (40%) cases, slight contrast between lesion colour and surrounding skin colour was seen in 12 (30%) cases, no contrast between lesion colour and surrounding skin colour was seen in 7 (17.5%) cases,

18. **REDUCTION IN SIZE AFTER TREATMENT:**

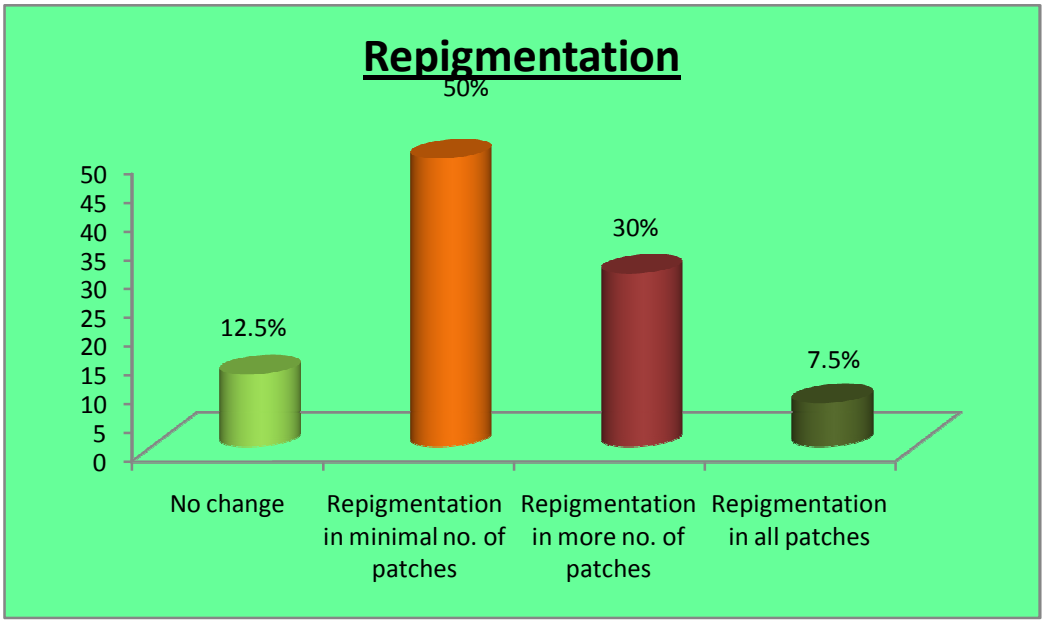
Reduction in size	No. of Out Patients			No. of In Patients			Total	Percentage
	Male	Female	Total	Male	Female	Total		
No reduction	1	1	2	5	1	6	8	20
Mild reduction	16	5	21	2	2	4	25	62.5
Considerable reduction	6	1	7	-	-	-	7	17.5
Complete reduction	-	-	-	-	-	-	-	-
Total	30			10			40	100



Inference: Among 40 cases no reduction in size was seen in 8 (20%) cases, mild reduction was seen in 25 (62.5%) cases, considerable reduction was seen in 7 (17.5%) cases.

19. **REPIGMENTATION PATTERN AFTER TREATMENT**

Change in colour	No. of Out Patients			No. of In Patients			Total	Percentage
	Male	Female	Total	Male	Female	Total		
No change	4	1	5				5	12.5
Repigmentation in minimal numbers of patches	4	8	12	5	3	8	20	50
Repigmentation in more numbers of patches	4	3	7	3	2	5	12	30
Repigmentation in all patches	1	2	3				3	7.5
Total	30			10			40	100

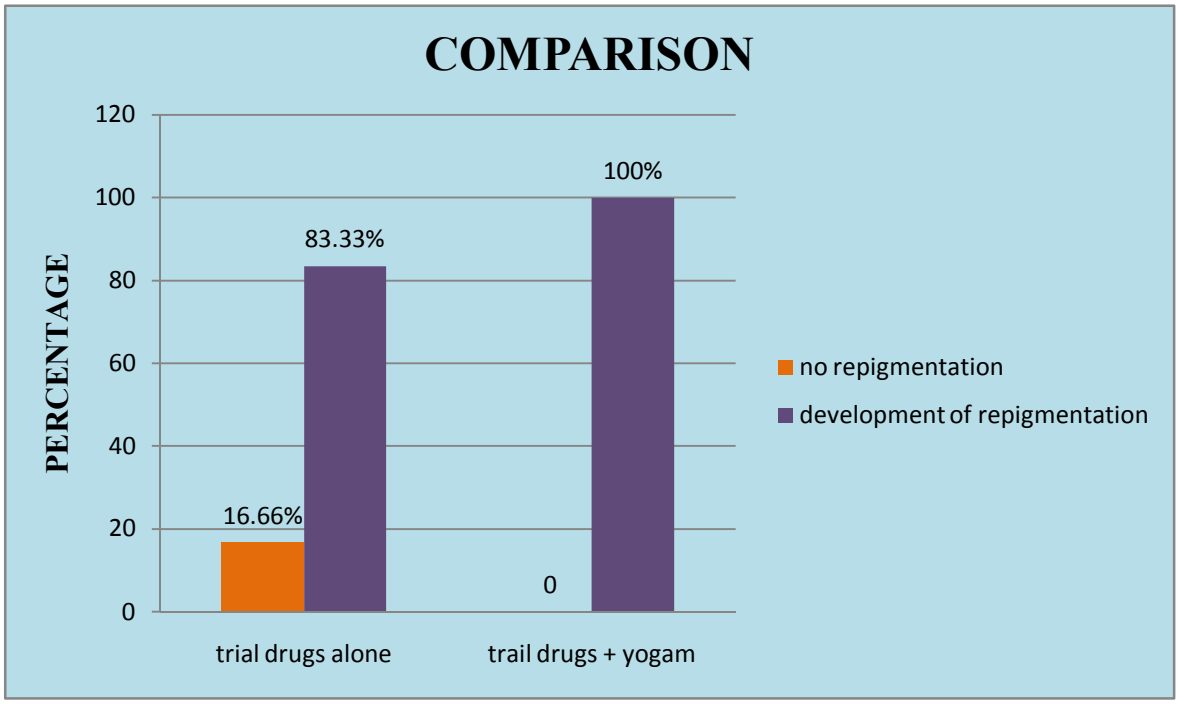


Inference:

Among 40 cases no repigmentation was seen in 5 (12.5%) cases, repigmentation in minimal numbers of patches was seen in 19 (47.5%) cases, repigmentation in more numbers of patches was seen in 11 (27.5%) cases, repigmentation in all patches colour was seen in 5 (12.5%) cases

20. **COMPARISON:**

Repigmentation	Trial drugs alone	percentage	Trial drugs+ Yogam	percentage
No repigmentation	5	16.66	0	0
Repigmentation development	25	83.33	10	100
Total	30	100	10	100



Inference:

Among 10 In-Patients, all of the 10 patients developed repigmentation in the lesions. Among 30 Out-Patients, 25 patients developed repigmentation in the lesions and the remaining 5 Out-Patients didn't develop any repigmentation.

21. **RESULTS AFTER TREATMENT**

Improvement	No. of Out Patients			No. of In Patients			Total	Percentage
	Male	Female	Total	Male	Female	Total		
Good (Grade 1)	-	-	-	-	-	-	-	-
Moderate (Grade 2)	3	1	4	2	1	3	7	17.5
Mild (Grade 3)	16	5	21	5	2	7	28	70
No (Grade 4)	2	3	5	-	-	-	5	12.5
Deteriorated (Grade 5)	-	-	-	-	-	-	-	-
Total	30			10			40	100

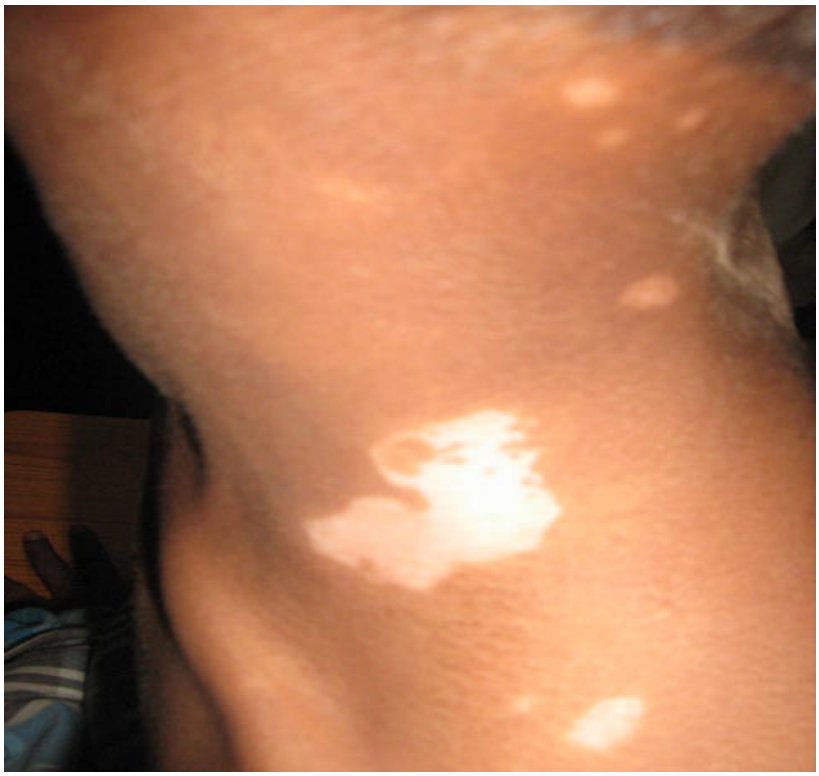
Inference:

Among 40 cases no improvement was seen in 5 (12.5%) cases, mild improvement was seen in 28 (70%) cases moderate improvement was seen in 7 (17.5%)

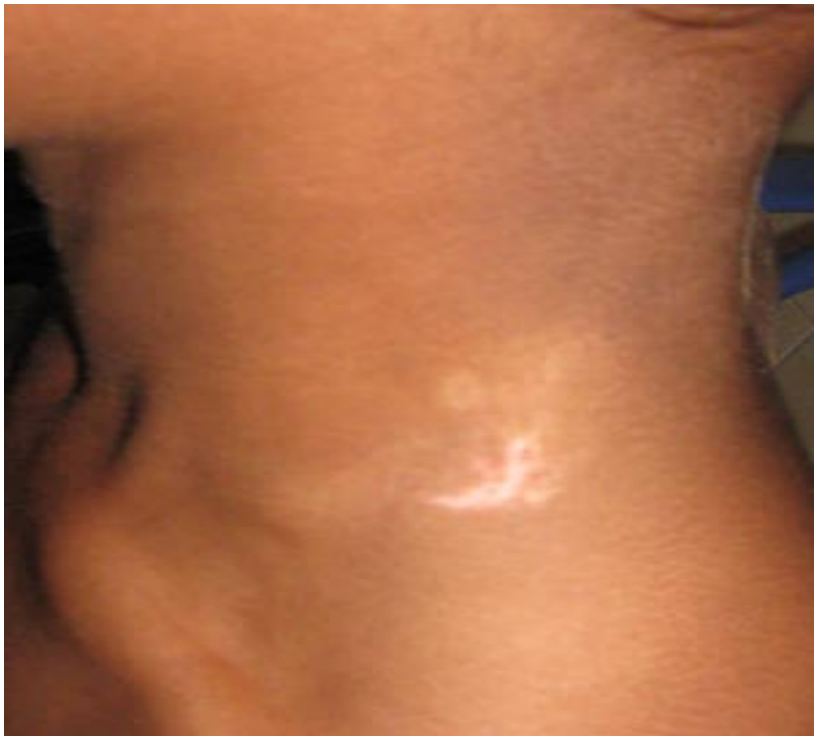
BEFORE TREATMENT

PATIENT'S NAME : Mr.R.SUDHAKARAN 38/M (IP.NO.4973)

SITE OF THE LESION : LEFT SIDE OF THE NECK



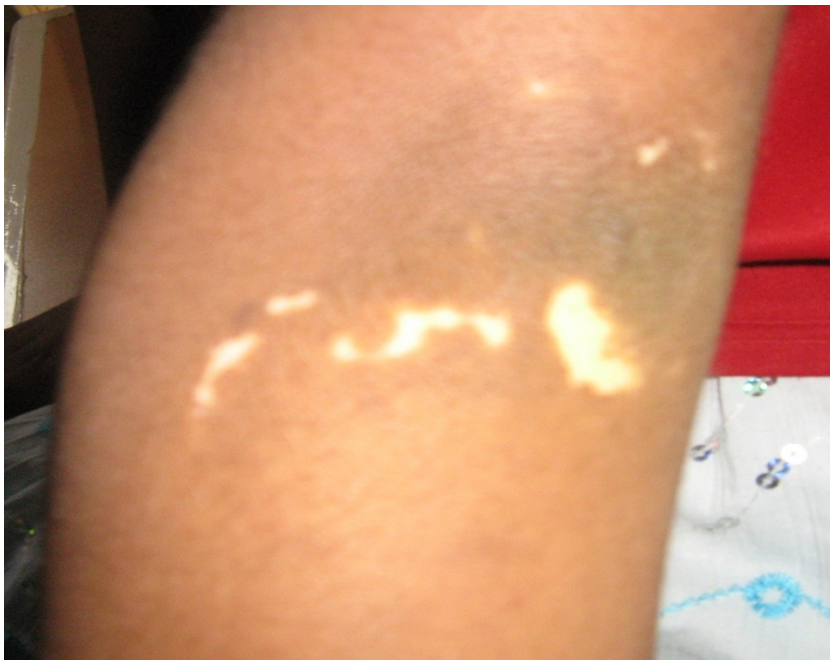
AFTER TREATMENT



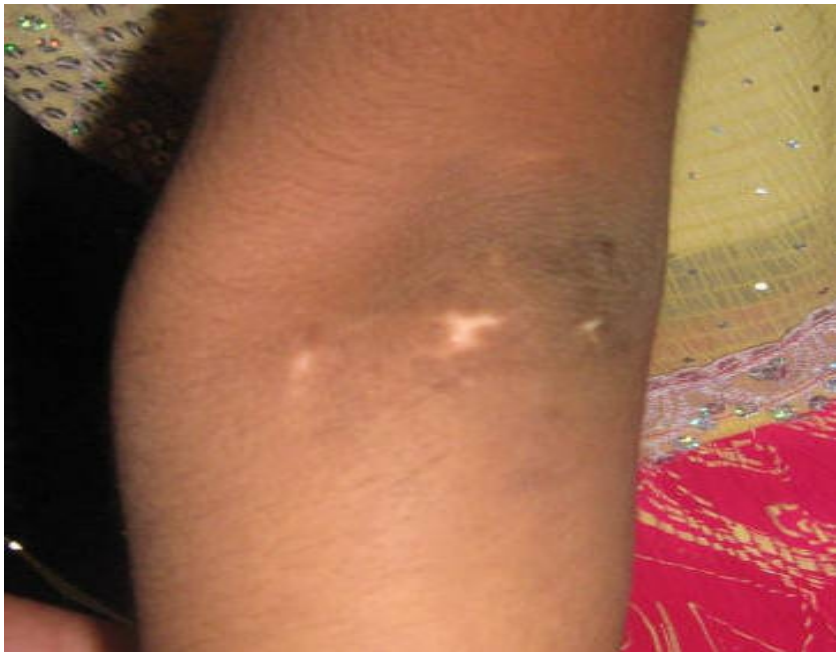
BEFORE TREATMENT

PATIENT'S NAME :Mrs.R. KAMATCHI 41/F (OP.NO.78437)

SITE OF THE LESION :BACK OF THE LEFT ELBOW JOINT



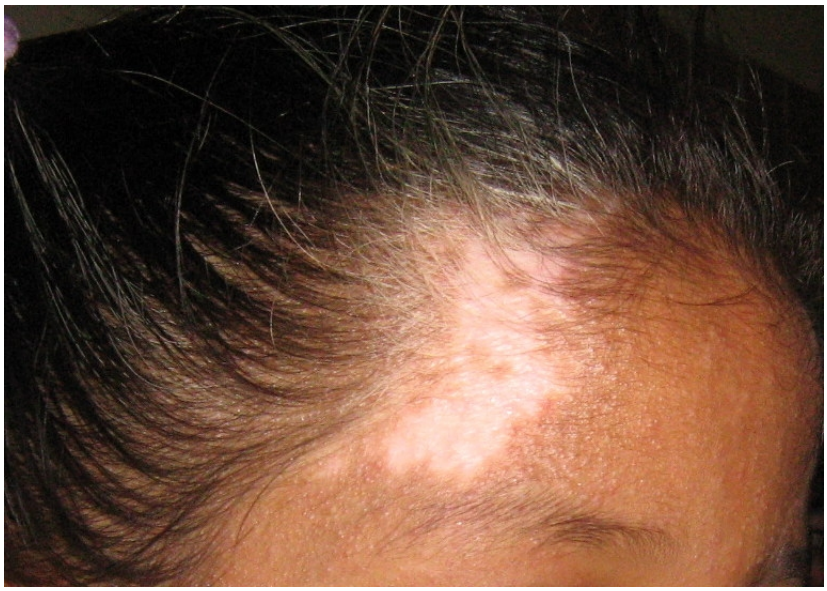
AFTER TREATMENT



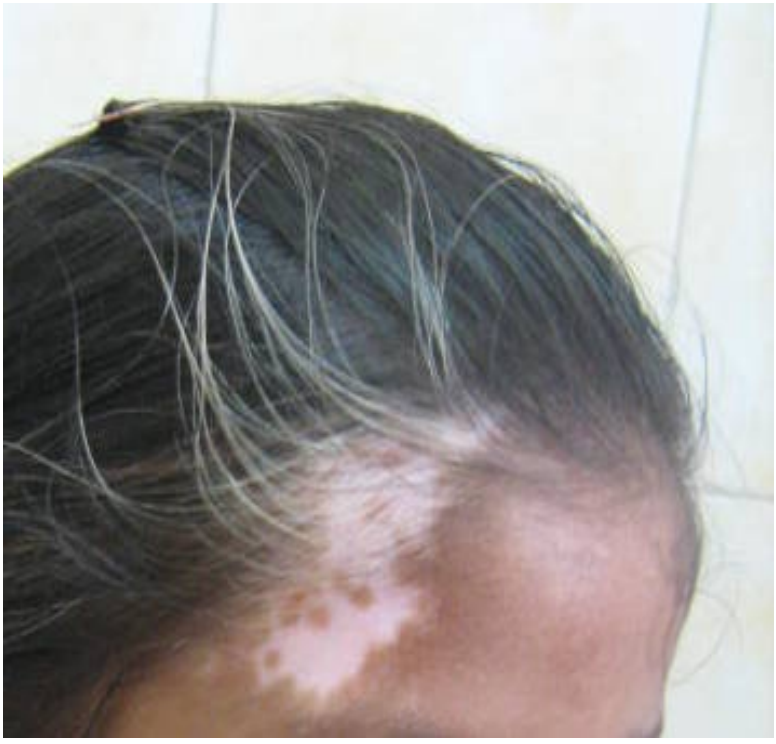
BEFORE TREATMENT

PATIENT'S NAME :Mrs.S. VANATHI SRI 37/F (OP.NO.C40748)

SITE OF THE LESION :RIGHT SIDE OF THE FOREHEAD



AFTER TREATMENT

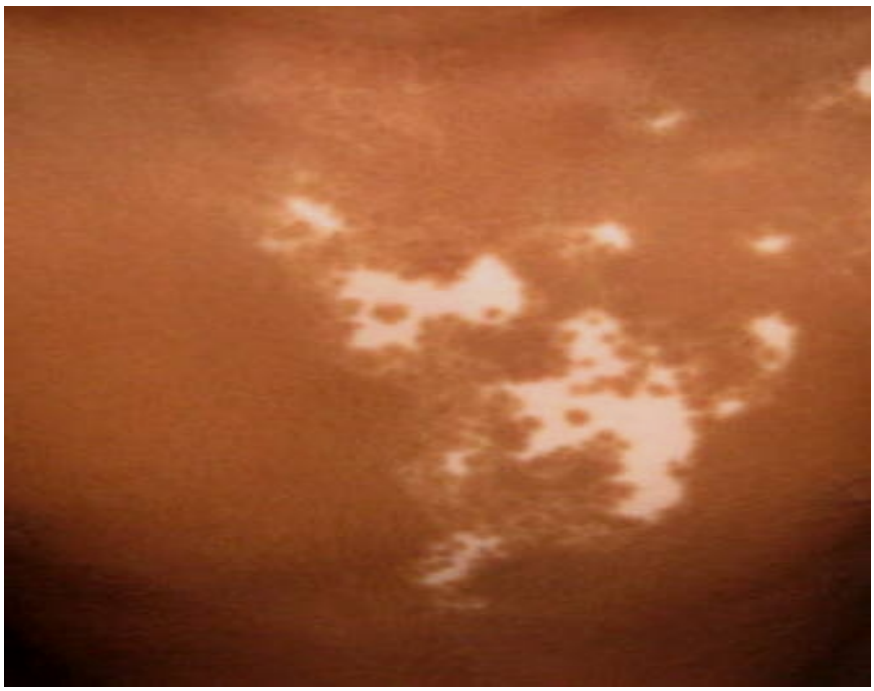


BEFORE TREATMENT

PATIENT'S NAME:Mr.R. SATHEESH KUMAR25/M (OP.NO.58672)

SITE OF THE LESION :CHEST REGION

AFTER TREATMENT



OP AND IP CASES CLINICAL IMPROVEMENT

S.NO	OP & IP NO	NAME	AGE	SEX	DOA	TIME PERIOD	DOD	DAYS	RESULT
1	C78264	J.RADHAKRISHNAN	48	M	22.7.12	5 YEARS	10.9.12	48	NO
2	C40748	S.VANATHISRI	37	F	24.7.12	15 YEARS	2.10.12	48	MLD
3	C58672	S.SATHISHKUMAR	25	M	27.7.12	7 YEARS	25.10.12	48	MODERATE
4	C62577	A.JAYAKUMAR	25	M	27.7.12	20 YEARS	22.9.12	48	MILD
5	W2115	B.KAVITHA	39	F	27.7.12	7 YEARS	24.9.12	48	MILD
6	C67074	M.SARAVANAKUMAR	30	M	28.7.12	3 YEARS	30.10.12	48	MILD
7	C26240	RAJESH KANNA	34	M	28.7.12	12 YEARS	18.9.12	48	NO
8	C72874	P.KUMARI	51	F	28.7.12	15 YEARS	18.9.12	48	MILD
9	B85008	RANJITHKUMAR	31	M	28.7.12	11 YEARS	18.9.12	48	MILD
10	C80290	S.RANGANATHAN	46	M	29.7.12	13 YEARS	1.10.12	48	NO
11	C26766	JOTHILAKSHMI	23	F	29.7.12	1 1/2 MONTHS	6.10.12	48	MILD
12	C69625	M.DURAIBABU	33	M	25.7.12	3 YEARS	3.10.12	48	MILD
13	C72769	P.REVATHY	22	F	2.8.12	7 YEARS	20.11.12	48	MILD
14	C51835	B.SHANKARI	35	F	3.8.12	5 YEARS	21.11.12	48	NO
15	C3326	VIJAYALAKSHMI	29	F	5.8.12	5 YEARS	23.11.12	48	NO
16	C20487	K.NAGAMMAL	33	F	5.8.12	15 YEARS	23.11.12	48	MILD
17	C78437	R.KAMATCHI	41	F	6.8.12	5 YEARS	2.11.12	48	GOOD
18	C78792	S.USHA	24	F	13.8.12	7 YEARS	3.10.12	48	MILD
19	C87874	V.SUDHARSAN	23	M	3.8.12	10 MONTHS	2.10.12	48	MODERATE
20	C88480	V.AMUDHA	30	F	18.8.12	9 YEARS	27.10.12	48	MILD
21	C760521	J.JOSHWA JAYASEELAN R	18	M	18.8.12	4 YEARS	27.10.12	48	MODERATE
22	C77212	B.REVATHY	24	F	19.8.12	2 YEARS	28.10.12	48	MILD
23	C73596	A.GOKULAKANNAN	18	M	20.8.12	3 YEARS	26.10.12	48	MILD
24	B13375	MURUGAMMAL	39	F	22.8.12	10 YEARS	28.10.12	48	MILD
25	C19651	S.VIJAYAKUMAR	37	M	23.8.12	3 YEARS	29.10.12	48	MILD
26	C54015	T.KANNAN	29	M	25.8.12	15 YEARS	24.10.12	48	MILD
27	C93640	S.PRIYA	20	F	1.9.12	2 YEARS	22.10.12	48	MILD
28	C95201	P.SASIKUMAR ROW	37	M	6.9.12	7 MONTH	2.11.12	48	MILD
29	C94503	S.MAHALAKSHMI	26	F	11.9.12	21 YEARS	1.11.12	48	MILD
30	C94449	P.BASKARAN	37	M	14.9.12	2 MONTHS	4.11.12	48	MLD
31	40021	R.RUKMANI	55	F	25.7.12	2 YEARS	16.9.12	48	MLD
32	4973	K.SUDHAKARAN	38	M	27.7.12	5 YEARS	16.9.12	48	MODERATE
33	B90639	E.DHANALAKSHMI	36	F	28.7.12	7 YEARS	28.9.12	48	MILD
34	4012	V.SAROJA	55	F	28.7.12	2 MONTHS	20.8.12	48	MILD
35	4977	G.KANNAN	35	M	28.7.12	2 MONTHS	13.9.12	48	MODERATE
36	5032	M.JULION	54	M	16.8.12	12 YEARS	7.9.12	48	MODERATE
37	4127	R.GNANASUNDARI	30	F	27.8.12	2 YEARS	10.9.12	48	MILD
38	5095	V.SATHISHKUMAR	21	M	3.9.12	3 YEARS	23.10.12	48	GOOD
39	84807	R.MATHANRAJ	26	M	13.9.12	3 MONTHS	3.11.12	48	MILD
40	4196	S.NEELA	40	F	20.9.12	1 YEAR	10.11.12	48	MILD

INVESTIGATIONS BEFORE AND AFTER TREATMENT

S.No	OP/IP No	NAME	AGE/SEX	Hb (gm/dl)		TOTAL RBC COUNT (million/cu.mm)		ESR (mm/hour)	
				BT	AT	BT	AT	BT	AT
1.	C78264	R.Radhakrishnan	48/M	13.7	14.1	4.8	4.8	8/16	2/12
2.	C40748	S.Vanathisri	37/F	14.4	11.9	4.6	4.4	10/22	4/8
3.	C58672	S.Sathishkumar	25/M	14.1	15.3	4.7	5.2	4/8	2/4
4.	C62577	A.Jayakumar	25/M	15.2	16	5.1	5.4	2/4	2/4
5	W2115	B.Kavitha	39/F	10.9	13	4.2	4.4	52/100	22/44
6	C67074	M.Saravanakumar	30/M	16.09	15.8	5.3	5.2	2/4	2/4
7	C26240	Rajeshkumar	34/M	10.8	10.4	5.1	4.9	12/22	6/14
8	C72874	P.kumari	51/F	13.9	14.6	4.4	4.8	8/20	4/8
9	B85008	Ranjithkumar	31/M	15.1	13.3	5.8	5.7	6/14	2/4
10	C80290	S.Ranganathan	46/M	14.9	15	5.2	5.2	2/6	2/4
11	C26766	Jothilaksmi	23/F	14.2	14.8	4.7	4.9	2/4	2/6
12	C69625	M.Duraibabu	33/M	15	12.9	5.3	5.2	2/6	2/4
13	C72769	P.Revathy	22/F	12.7	11.3	4.1	4.3	4/20	2/6
14	C51835	B.Shankari	35/F	13.7	13.7	5.0	5.1	2/4	2/4
15	C3326	B.Vijayalaksmi	29/F	14	11.5	4.3	4.3	20/42	2/4
16	C20487	K.Nagammal	33/F	13.6	14	4.5	4.5	4/8	4/8
17	C78437	R.Kamatchi	41/F	11.7	10.9	4.3	4.5	2/4	2/4
18	C78792	Usha	24/F	12.2	11.6	4.3	3.9	20/40	8/16
19	C87874	V.Sudharsan	23/M	16.3	15.5	5.0	5.3	2/4	2/4
20	C88480	V.Amudha	30/F	12.7	10.5	5.1	5.1	2/6	2/4

INVESTIGATIONS BEFORE AND AFTER TREATMENT

S.No	OP/IP No	NAME	AGE/ SEX	Hb (gm/dl)		TOTAL RBC COUNT (million/cu. mm)		ESR (mm/hour)	
				BT	AT	BT	AT	BT	AT
21	C760521	J.Joshwa jayaseelan rafil	18/M	17.3	15	5.9	5.5	2/4	2/4
22	C77212	B.Revathy	24/F	13.4	11	4.6	4.6	4/16	2/6
23	C73596	A.gokulakannan	18/M	17	17.5	5.5	5.7	2/4	2/4
24	B13375	Murugammal	39/F	13.4	13.5	4.1	4.0	6/12	6/12
25	C19651	S.Vijayakumar	37/M	15	14.3	4.6	5.0	2/4	2/6
26	C54015	T.Kannan	29/M	17.2	16	5.7	5.5	2/4	2/4
27	C93640	S.Priya	20/F	14.4	13.9	5.0	4.9	2/4	2/4
28	C95201	P.Sasikumar row	37/M	13.1	12.0	4.4	4.8	2/10	12/26
29	C94503	S.Mahalakshmi	26/F	12.2	12.5	4.1	4.5	4/12	4/8
30	C94449	P.Baskaran	37/M	17.5	17.3	5.9	5.9	2/4	2/4
31	40021	R.Rukmani	55/F	13.6	13.5	4.8	4.7	2/8	6/20
32	4973	K.Sudhakaran	38/M	14.2	15.7	4.6	5.0	2/4	2/4
33	B90639	E.Dhanalakshmi	36/F	11.5	11.3	5.0	5.1	22/46	6/14
34	4012	V.Saroja	55/F	12.8	13.7	4.0	4.4	10/28	8/22
35	4977	G.Kannan	35/M	13.8	14.3	4.8	5.0	2/4	6/18
36	5032	M.Julion	54/M	16.7	15.8	5.0	4.8	2/4	4/8
37	4127	R.Gnanasundari	30/F	13.0	13.2	4.3	4.4	2/6	4/8
38	5095	V.Sathishkumar	21/M	16.2	13.9	4.5	4.8	2/4	2/4
39	C84807	R.Mathanraj	26/M	17.2	16.9	5.7	5.6	2/4	2/4
40	4196	S.Neela	40/F	12.8	12.6	4.3	4.3	6/12	4/8

LABORATORYINVESTIGATIONS BEFORE AND AFTER TREATMENT

S.No	OP/IP No	NAME	AGE/ SEX	BLOOD (mg/dl)				UREA (mg/dl)		CREATININE (mg/dl)	
				FASTING (mg/dl)		POST PRANDIAL(mg/dl)					
				BT	AT	BT	AT	BT	AT	BT	AT
1.	C78264	R.Radhakrishnan	48/M	111	97	120	112	17	17	0.7	0.8
2.	C40748	S.Vanathisri	37/F	72	90	94	90	23	18	0.8	0.6
3.	C58672	S.Sathishkumar	25/M	91	93	108	112	23	22	0.8	0.8
4.	C62577	A.Jayakumar	25/M	81	91	100	111	20	19	0.6	0.5
5	W2115	B.Kavitha	39/F	71	72	98	100	14	18	0.5	0.8
6	C67074	M.Saravanakumar	30/M	92	96	105	111	17	14	0.6	0.5
7	C26240	Rajeshkumar	34/M	83	91	103	106	14	18	0.5	0.5
8	C72874	P.kumari	51/F	81	101	98	110	17	14	0.6	0.4
9	B85008	Ranjithkumar	31/M	77	96	98	116	19	19	0.6	0.6
10	C80290	S.Ranganathan	46/M	83	100	93	114	26	23	0.7	0.7
11	C26766	Jothilaksmi	23/F	93	97	126	113	14	22	0.4	0.7
12	C69625	M.Duraibabu	33/M	85	106	100	123	22	23	0.6	0.7
13	C72769	P.Revathy	22/F	92	94	111	117	17	14	0.7	0.4
14	C51835	B.Shankari	35/F	92	85	112	97	15	22	0.4	0.7
15	C3326	B.Vijayalaksmi	29/F	74	83	92	101	14	14	0.5	0.4
16	C20487	K.Nagammal	33/F	92	94	105	110	20	20	0.6	0.6
17	C78437	R.Kamatchi	41/F	81	101	136	121	16	17	0.5	0.6
18	C78792	Usha	24/F	78	90	80	104	24	19	0.8	0.7
19	C87874	V.Sudharsan	23/M	82	95	98	116	21	14	0.6	0.5
20	C88480	V.Amudha	30/F	76	95	98	108	19	16	0.5	0.5

LABORATORYINVESTIGATIONS BEFORE AND AFTER TREATMENT

S. No	OP/IP No	NAME	AGE/ SEX	BLOOD (mg/dl)				UREA (mg/dl)		CREATININE (mg/dl)	
				FASTING (mg/dl)		POST PRANDIAL (mg/dl)					
				BT	AT	BT	AT	BT	AT	BT	AT
21	C760521	J.Joshwa jayaseelan rafil	18/M	91	92	105	105	20	20	0.6	0.6
22	C77212	B.Revathy	24/F	107	87	119	117	28	21	0.8	0.6
23	C73596	A.gokulakannan	18/M	102	80	117	90	14	17	0.4	0.7
24	B13375	Murugammal	39/F	72	90	108	103	14	17	0.4	0.7
25	C19651	S.Vijayakumar	37/M	83	98	93	120	20	21	0.6	0.7
26	C54015	T.Kannan	29/M	89	90	106	108	14	16	0.4	0.6
27	C93640	S.Priya	20/F	78	82	100	112	21	20	0.8	0.8
28	C95201	P.Sasikumar row	37/M	91	89	127	107	19	17	0.5	0.6
29	C94503	S.Mahalakshmi	26/F	87	80	127	110	14	17	0.4	0.7
30	C94449	P.Baskaran	37/M	80	90	103	105	13	16	0.4	0.7
31	40021	R.Rukmani	55/F	98	92	106	101	20	14	0.6	0.4
32	4973	K.Sudhakaran	38/M	83	93	125	141	19	37	0.6	0.9
33	B90639	E.Dhanalakshmi	36/F	80	95	99	107	20	19	0.7	0.6
34	4012	V.Saroja	55/F	79	82	102	100	19	16	0.6	0.5
35	4977	G.Kannan	35/M	96	100	113	120	23	26	0.7	0.7
36	5032	M.Julion	54/M	78	80	100	97	21	19	0.6	0.8
37	4127	R.Gnanasundari	30/F	82	90	104	104	16	19	0.5	0.6
38	5095	V.Sathishkumar	21/M	100	99	115	118	15	15	0.4	0.5
39	C84807	R.Mathanraj	26/M	79	90	112	102	14	16	0.4	0.7
40	4196	S.Neela	40/F	91	87	110	103	14	17	0.4	0.7

LABORATORYINVESTIGATIONS BEFORE AND AFTER TREATMENT

S.No	OP/IP No	NAME	AGE/SEX	SGOT (IU/L)		SGPT (IU/L)	
				BT	AT	BT	AT
1.	C78264	R.Radhakrishnan	48/M	23	23	25	25
2.	C40748	S.Vanathisri	37/F	8	10	9	12
3.	C58672	S.Sathishkumar	25/M	14	18	17	20
4.	C62577	A.Jayakumar	25/M	18	17	19	19
5.	W2115	B.Kavitha	39/F	73	38	94	33
6.	C67074	M.Saravanakumar	30/M	18	12	22	14
7.	C26240	Rajeshkumar	34/M	10	19	12	21
8.	C72874	P.kumari	51/F	27	26	28	28
9.	B85008	Ranjithkumar	31/M	33	22	36	24
10.	C80290	S.Ranganathan	46/M	20	14	21	16
11.	C26766	Jothilaksmi	23/F	20	14	18	15
12.	C69625	M.Duraibabu	33/M	26	17	27	19
13.	C72769	P.Revathy	22/F	11	11	12	12
14.	C51835	B.Shankari	35/F	29	35	30	29
15.	C3326	B.Vijayalaksmi	29/F	22	11	24	12
16.	C20487	K.Nagammal	33/F	14	16	19	22
17.	C78437	R.Kamatchi	41/F	17	10	19	12
18.	C78792	Usha	24/F	12	27	15	21
19.	C87874	V.Sudharsan	23/M	22	13	31	14
20.	C88480	V.Amudha	30/F	14	22	16	24

S.No	OP/IP No	NAME	AGE/ SEX	SGOT (IU/L)		SGPT (IU/L)	
				BT	AT	BT	AT
21	C760521	J.Joshwa jayaseelan rafil	18/M	19	22	20	24
22	C77212	B.Revathy	24/F	34	11	36	12
23	C73596	A.gokulakannan	18/M	15	20	16	22
24	B13375	Murugammal	39/F	16	25	17	20
25	C19651	S.Vijayakumar	37/M	35	26	47	27
26	C54015	T.Kannan	29/M	34	34	45	34
27	C93640	S.Priya	20/F	20	19	19	19
28	C95201	P.Sasikumar row	37/M	19	13	21	14
29	C94503	S.Mahalakshmi	26/F	36	29	30	20
30	C94449	P.Baskaran	37/M	44	27	36	21
31	40021	R.Rukmani	55/F	28	16	29	18
32	4973	K.Sudhakaran	38/M	22	24	23	26
33	B90639	E.Dhanalakshmi	36/F	21	13	24	15
34	4012	V.Saroja	55/F	26	24	32	29
35	4977	G.Kannan	35/M	12	15	13	17
36	5032	M.Julion	54/M	22	30	23	27
37	4127	R.Gnanasundari	30/F	20	27	21	25
38	5095	V.Sathishkumar	21/M	17	31	19	28
39	C84807	R.Mathanraj	26/M	15	28	16	23
40	4196	S.Neela	40/F	19	33	20	27

LABORATORY INVESTIGATIONS BEFORE AND AFTER TREATMENT

S. No	OP/IP No	NAME	AGE/ SEX	URINE SUGAR (F)		URINE SUGAR (PP)		ALBUMIN		DEPOSITS			
										Epithelial cells		Pus cells	
				BT	AT	BT	AT	BT	AT	BT	AT	BT	AT
1.	C78264	R.Radhakrishnan	48/M	Nil	Nil	Nil	Nil	Nil	Nil	1-3	2-4	1-2	2-4
2.	C40748	S.Vanathisri	37/F	Nil	Nil	Nil	Nil	Nil	Nil	1-2	1-2	1-2	1-2
3.	C58672	S.Sathishkumar	25/M	Nil	Nil	Nil	Nil	Nil	Nil	2-4	1-2	2-4	2-4
4.	C62577	A.Jayakumar	25/M	Nil	Nil	Nil	Nil	Nil	Nil	4-5	3-4	2-4	2-4
5.	W2115	B.Kavitha	39/F	Nil	Nil	Nil	Nil	Nil	Nil	1-2	2-4	2-4	3-6
6.	C67074	M.Saravanakumar	30/M	Nil	Nil	Nil	Nil	Nil	Nil	1-2	1-2	1-2	1-2
7.	C26240	Rajeshkumar	34/M	Nil	Nil	Nil	Nil	Nil	Nil	2-4	2-4	1-2	1-2
8.	C72874	P.kumari	51/F	Nil	Nil	Nil	Nil	Nil	Nil	1-2	1-2	1-2	2-4
9.	B85008	Ranjithkumar	31/M	nil	Nil	nil	Nil	Nil	Nil	1-2	2-4	2-4	1-2
10.	C80290	S.Ranganathan	46/M	nil	Nil	nil	Nil	Nil	Nil	1-2	2-4	1-2	2-4
11.	C26766	Jothilaksmi	23/F	nil	Nil	nil	Nil	Nil	Nil	1-2	2-4	1-2	1-2
12.	C69625	M.Duraibabu	33/M	nil	Nil	nil	Nil	Nil	Nil	1-2	6-8	1-2	4-8
13.	C72769	P.Revathy	22/F	nil	Nil	nil	Nil	Nil	Nil	2-4	3-6	1-2	1-2
14.	C51835	B.Shankari	35/F	nil	Nil	nil	Nil	Nil	Nil	4-8	3-6	6-8	3-6
15.	C3326	B.Vijayalaksmi	29/F	nil	Nil	nil	Nil	Nil	Nil	3-6	4-8	3-6	2-4
16.	C20487	K.Nagammal	33/F	nil	Nil	nil	Nil	Nil	Nil	2-4	2-4	2-4	2-4
17.	C78437	R.Kamatchi	41/F	nil	nil	nil	nil	nil	nil	5-6	2-3	3-4	1-3
18.	C78792	Usha	24/F	nil	nil	nil	Nil	Nil	Nil	1-2	2-3	1-2	1-2
19.	C87874	V.Sudharsan	23/M	nil	nil	nil	Nil	Nil	Nil	2-4	1-2	2-4	2-4
20.	C88480	V.Amudha	30/F	nil	nil	nil	nil	nil	Nil	4-5	2-4	4-8	3-6

S. No	OP/IP No	NAME	AGE/ SEX	URINE SUGAR (F)		URINE SUGAR (PP)		ALBUMIN		DEPOSITS			
										Epithelial cells		Pus cells	
				BT	AT	BT	AT	BT	AT	BT	AT	BT	AT
21.	C760521	J.Joshwa jayaseelan rafil	18/M	Nil	Nil	Nil	Nil	Nil	Nil	1-3	2-4	1-2	2-4
22.	C77212	B.Revathy	24/F	Nil	Nil	Nil	Nil	Nil	Nil	1-2	1-2	1-2	1-2
23.	C73596	A.gokulakannan	18/M	Nil	Nil	Nil	Nil	Nil	Nil	2-4	1-2	2-4	2-4
24.	B13375	Murugammal	39/F	Nil	Nil	Nil	Nil	Nil	Nil	4-5	3-4	2-4	2-4
25.	C19651	S.Vijayakumar	37/M	Nil	Nil	Nil	Nil	Nil	Nil	1-2	2-4	2-4	3-6
26.	C54015	T.Kannan	29/M	Nil	Nil	Nil	Nil	Nil	Nil	1-2	1-2	1-2	1-2
27.	C93640	S.Priya	20/F	Nil	Nil	Nil	Nil	Nil	Nil	2-4	2-4	1-2	1-2
28.	C95201	P.Sasikumar row	37/M	Nil	Nil	Nil	Nil	Nil	Nil	1-2	1-2	1-2	2-4
29.	C94503	S.Mahalakshmi	26/F	nil	Nil	nil	Nil	Nil	Nil	1-2	2-4	2-4	1-2
30.	C94449	P.Baskaran	37/M	nil	Nil	nil	Nil	Nil	Nil	1-2	2-4	1-2	2-4
31.	IP 40021	R.Rukmani	55/F	nil	Nil	nil	Nil	Nil	Nil	1-2	2-4	1-2	1-2
32.	IP 4973	K.Sudhakaran	38/M	nil	Nil	nil	Nil	Nil	Nil	1-2	6-8	1-2	4-8
33.	IP 90639	E.Dhanalakshmi	36/F	nil	Nil	nil	Nil	Nil	Nil	2-4	3-6	1-2	1-2
34.	IP 4012	V.Saroja	55/F	nil	Nil	nil	Nil	Nil	Nil	4-8	3-6	6-8	3-6
35.	IP 4977	G.Kannan	35/M	nil	Nil	nil	Nil	Nil	Nil	3-6	4-8	3-6	2-4
36.	IP 5032	M.Julion	54/M	nil	Nil	nil	Nil	Nil	Nil	2-4	2-4	2-4	2-4
37.	IP 4127	R.Gnanasundari	30/F	nil	nil	nil	nil	nil	nil	5-6	2-3	3-4	1-3
38.	IP 5095	V.Sathishkumar	21/M	nil	nil	nil	Nil	Nil	Nil	1-2	2-3	1-2	1-2
39.	IP 4807	R.Mathanraj	26/M	nil	nil	nil	Nil	Nil	Nil	2-4	1-2	2-4	2-4
40.	IP 4196	S.Neela	40/F	nil	nil	nil	nil	nil	Nil	4-5	2-4	4-8	3-6

DISCUSSION

Yugi Vaidya Chinthamani describes Venpulli as Suvetha Kuttam, which is one among the Eighteen types of Kuttam. As the term 'Kuttam' bears social stigma, the disease is called as Venpulli instead of Venkuttam.

The clinical entity of Venpulli is more or less similar to that of Vitiligo in modern medicine. It is an acquired idiopathic depigmentary condition and is characterized by completely depigmented macules and patches of varying sizes and shapes. Besides loss of colour there is no other structural change. It is also a non-contagious disease.

The author has collected information largely from the literatures and text books like Siddha Maruthuvam - Sirappu, Yugi Vaithya Chinthamani, Gurunaadi Nool, Dhanvanthiri Vaidhiyam and Agathiyar Kanma Kaandam in which the Siddha methods of diagnosis have been dealt with.

The trial drugs for this study were prepared by the Author in the Gunapadam practical laboratory of National Institute of Siddha, under the supervision of the members of the teaching faculty and guided by the Head of the Department of Sirappu Maruthuvam of the National Institute of Siddha, Chennai - 47.

In Siddha system, before starting the treatment it is necessary to bring the Mukkutram to equilibrium. By giving purgation we can normalize the deranged Vatham.

"விரேசனத்தால் வாதம் தாழும்"

Purgation with Karudan Kizhlangu Ennai - 5ml with hot water at early morning was given for balancing the deranged Mukkutram a day before treatment for all the patients.

The trial drugs Yaanai Nerungil Chooranam (Internal) and Pathiyaa Lebanam (External) were given for 48 days. Out-Patients were asked to visit the hospital once in days. For Out-Patients the drugs were given for 48 days and the clinical assessment was done on 0^{th} day, 8^{th} day, 15^{th} day, 22^{th} day 29^{th} day, 36^{th} day, 43rdday,49thday.

For In-Patients the drugs were given for 48 days and the clinical assessment was done daily. 10 In-Patients were given Yogam treatment along with their trial drugs. The results were

compared at the end of the study. For In-Patients, who are not in a situation to stay in the hospital for a long time, were advised to attend the Out-Patient Department of Sirappu Maruthuvam for further follow- up.

Patients were instructed to take the medicines regularly and apply the external medicine twice a day and to expose the affected parts to sunlight in the morning. It was ensured that the diet restrictions imposed were followed properly by the patients.

After the treatment, the patients were advised to visit the Out-Patient ward of Department of Sirappu Maruthuvam for another 2 months for follow-up.

40 patients of both genders were recruited for this study. Among the 40 cases 20(50%) were males and 20 (50%) were females. Generally Venpulli affects both the sexes, this study shows equal number of males and females affected.

3 (7.5%) patients were in the age group between 18 -20 years, 15 (37.5%) patients between 21 and 30 years, 15 (37.5%) patients between 31 and 40 years, 3 (7.5%) patients between 41 and 50 years, 4 (10%) patients between 51 - 60. Venpulli affects people of all the age groups. In this study most of the cases were reported in the middle age group ie (21 to 40years)

38 (95.5%) patients were non vegetarians and only 2 (5%) were vegetarians. According to Siddha literature, non- vegetarian foods are one of the precipitating factors for skin diseases. This present study also emphasizes the same.

14 (35%) cases were admitted to trial in Kaar Kaalam, 26 (65%) cases were admitted in Munpani Kaalam.

Among the 40 patients, 3 (7.5%) were from Marutham and 37 (92.5 %) were from Neithal thinai.

In this study maximum patients were coming from in and around Chennai which belongs to Neithal thinai. According to Siddha literature skin diseases are more prevalent in Neithal thinai. In Siddha literature, Marutha nilam is mentioned as the land which is free of diseases among the five lands. Venpulli occurs in Marutham irrespective of the nature of the land but its prevalence is low.

Viyanan (Depigmentation / hypopigmentation of the skin) and Samanan were affected in all the cases (100%).

Praasakam and Ranjagam were affected in all the 40 (100 %) patients. Ranjagam is responsible for the colour of blood. Praasakam is responsible for the complexion of the skin. Hence the defect in Ranjagam and Praasakam may lead to the causative factor for this disease.

No changes were reported in kabam in all the 40 patients.

Saaram and Senneer were affected in all the 40 (100 %) cases. Saaram and Senneer are responsible for the colour of the skin. Decreased Senneer (Senneer Kurai Kunam) results in Hypopigmentation of the skin. Decreased Saaram is the cause for the depressive psychology in patients.

Niram was affected in all the 40 (100 %) cases. In Venpulli, the colour of skin changes into white.

Laboratory investigations were done before and end of the trail. Photographs were also taken before, during and after the trail.

Laboratory investigations were done before treatment (0^{th} day), and after treatment (49^{th} day) of the trial for both the Out-Patients and the In-Patients to find out any abnormal changes in laboratory parameters (CBC, RFT, LFT)

The colour of the patches and the surrounded skin were observed in all the 40 patients after the trial period. Among 40 cases no change in the colour of the lesion was seen in 5 (12.5%) cases, yellowish tint colour change was seen in 16 (40%) cases, slight contrast between lesion colour and surrounding skin colour was seen in 12 (30%) cases, no contrast between lesion colour and surrounding skin colour was seen in 7 (17.5%) cases,

Among 40 cases no reduction in size was seen in 8 (20%) cases, mild reduction was seen in 25 (62.5%) cases, considerable reduction was seen in 7 (17.5%) cases.

Among 40 cases no repigmentation was seen in 5 (12.5%) cases, repigmentation in minimal numbers of patches was seen in 20(50%) cases, repigmentation in more numbers of patches was seen in 12 (30%) cases, repigmentation in all the patches were seen in 3 (7.5%) cases. 10 In-Patients, who received Yogam treatment along with trial drugs showed good

prognosis when compared to the patients treated without Yogam. All the 10 patients developed repigmentation in the lesions.

Among 30 Out-Patients, 25 patients developed repigmentation in the lesions and the remaining 5 Out-Patients didn't develop any repigmentation.

It was also observed during this trial that no new lesions were formed and there was no increase in any existing lesion was found in all the 40 patients.

Among 40 cases no improvement was seen in 5 (12.5%) cases, mild improvement was seen in 28 (70%) cases, moderate improvement was seen in 7 (17.5%) cases.

Patients who had chronic lesions showed mild improvement only. Patients who had lesions recently (approximately 1-5 years) showed considerable improvement.

The acute toxicity study was conducted for the trial drug Yaanai Nerungil Chooranam in National Institute of Siddha and it showed no abnormal results. Hence the safety of the trial drug was also proved.

SUMMARY

Various literatures dealing with Venpulli were collected from Siddha and Modern text books.

Preclinical analysis in toxicological and biochemical aspects were conducted for the trial drug Yaanai Nerunjil Chooranam.

40 patients of both the sexes and in the age group between 18 to 60 were selected for the study. 10 cases in the In-Patient ward were given Yogam therapy along with the trial drugs for 48 days. 30 cases were treated in the Out-Patient Department for 48 days only with the trial drugs.

All the details about the study and the drugs were informed to the patients in their vernacular language and consent forms duly signed by them were obtained from them. Before starting the treatment, the blood samples of the selected patients were subjected to investigation and photographs of the lesions were taken.

A day before starting the treatment purgation was given by administering Karudan Kizhangu Ennai - 5ml with hot water in the early morning to bring the Thirithodam to equilibrium.

From the second day onwards Yaanai Nerunjil Chooranam -2gm (twice a day) along with hot water was given internally and Pathiyaa Lebanam with Cow's urine for external use were given to the patients.

Diet restrictions were strictly imposed during the treatment period. Every 7^{th} day, the patients were assessed for clinical improvement and adverse effects. at the end of the treatment (49^{th} day) the laboratory investigations were repeated. The photographs of the lesions were taken whenever necessary. Photographs were also taken before, during and after the trial. The improvement was assessed.

During the course of treatment there were no adverse effects or unwanted drug reactions in GIT, RS, CVS and Excretory systems. There were no symptoms such as nausea, oral ulcers, abdominal discomfort, dyspnoea, cough, palpitations, raised blood pressure, dysuria/oliguria and pedal edema.

It is Concluded that "Yaanai Nerunjil Chooranam - internally" and "Pathiyaa Lebanam-externally" are effective in producing repigmentation and reducing the size of the depigmented patches in the treatment of "Venpulli" (Vitiligo).

CONCLUSION

The clinical study reveals that the trial drug showed Grade 2 – moderate improvement in 17.5% of the cases, Grade 3 – mild improvement in 70% of the cases, Grade 4 – no improvement in 12.5% cases.

Yogam treatment along with the trial drugs showed good prognosis when compared to patients treated only with trial drugs. Hence the study reveals the importance of Yogam in treating Venpulli.

Clinically, no adverse effects were reported during the trial and the laboratory investigations were also within normal limits. So, the drug is assumed to be safe for humans.

Acute toxicity study in animal models reveals that the trial drug Yaanai Nerunjil Chooranam" is safe. The safety of the trial drug was also proved from this study.

Because of the encouraging clinical results, it could be concluded that "Yaanai Nerunjil Chooranam - internally" and "Pathiyaa Lebanam externally" are effective in producing repigmentation and reducing the size of the de-pigmented patches in the treatment of " Venpulli" (Vitiligo).

QUALITATIVE ANALYSIS

SL.NO	EXPERIMENT	OBSERVATION	INFERENCE
1.	Appearance of the sample	Brown in colour	
2.	**Solubility:** a. A little of the sample is shaken well with distilled water. b. A little of the sample is Shaken well with con. Hcl Con. H_2SO_4.	Completely soluble Completely soluble	 Absence of Silicate
3.	**Action of Heat:** A small amount of the sample is taken in a dry test tube and heated gartly at first and then Strong.	White fumes not evolved Brown fumes not evolved	Absence of Carbonate. Absence of Nitrate.
4.	**Flame Test:** A small amount of the sample is made into a paste with con. Hcl in a watch glass and introduced into non-luminous part of the Bunsen flame.	White flame is appeared	Absence of Copper.
5	**Ash Test:** A filter paper is soaked into a mixture of sample and cobalt nitrate solution and introduced into the Bunsen flame and ignited	No Yellow colour flame.	Absence of Sodium.

Preparation of the extract

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

SL.NO	EXPERIMENT	OBSERVATION	INFERENCE
TEST FOR ACID RADICALS			
1.	**Test For Sulphate**: a. 2 ml of the above prepared extract is taken in a test tube to this added 2ml of 4% ammonium oxalate solution b. 2ml of the above prepared extract is added with 2 ml of dil-Hcl is added until the effervescence ceases off. Then 2ml of Barium chloride solution is added	Cloudy appearance present A white precipitate insoluble in con. Hcl is obtained	Absence of Sulphate. Sulphate is not confirmed.
2.	**Test For Chloride:** 2 ml of the above prepared extract is added with dil. HNO_3 till the effervescence ceases. Then 2 ml of silver nitrate solution is added.	Cloudy appearance present	Absence of Chloride.
3.	**Test For Phosphate:** 2 ml of the extract is treated with 2ml of ammonium molybdate solution and 2 ml of con. HNO_3	Cloudy yellow appearance present	Absence of Phosphate.

4.	**Test For Carbonate:** 2m1 of the extract is treated with 2m1 magnesium sulphate solution	No cloudy appearance	Absence of Carbonate.
5	**Test For Nitrate:** 1gm of the substance is heated with copper turnings and concentrated H_2SO_4 and viewed the test tube vertically down.	Brown gas is not evolved	Absence of Nitrate.
6.	**Test For Sulphide:** 1 gm of the substance is treated with 2m1 of con. Hcl.	No Rotten egg smelling gas evolved	Absence of Sulphide.
7.	**Test For Fluoride&Oxalate** 2 m1 of The Extract Is Added With 2m1of Acetic Acid and 2 m1 calcium Chloride solution and heated.	No Cloudy appearance.	Absence of Fluoride & Oxalate
8.	**Test For Nitrite:** 3drops of extract is placed on a filter paper,on that 2 drops of acetic Acid and 2 drops of benzidine solution is placed.	No characteristic changes	Absence of nitrite.
9.	**Test For Borate:** 2 pinches of the substance is made into paste by using sulphuric acid and alcohol (95%) and introduced into the blue flame.	Bluish green colour flame not appeared..	Absence of borate.

II. TEST FOR BASIC RADICALS			
1	**Test For Lead:** 2 m1of the extract is added with 2m1of potassium iodide solution.	No Yellow precipitate is obtained	Absence of Lead.
2.	**Test for Copper:** a. One pinch of substance is made into paste with con. Hcl in a watch glass and introduced into the non-luminous part of the flame. b. 2 ml of extract is added with excess of ammonia solution.	No Blue colour flame precipitate No Blue colour precipitate	Absence of Copper. Absence of Copper.
3.	**Test For Aluminium:** Take the 2m1of the extract sodium hydroxide is added in drops to excess.	No characteristic changes	Absence of Aluminium.
4.	**Test For Iron: (Ferrous)** To the 2 ml of extract 2m1 ammonium thiocyanate solution and 2m1of con.HNO_3 is added	Blood red colour Appearance	**Presence of Iron.**
5.	**Test For Zinc:** To 2m1 of the extract sodium hydroxide solution is added in drops to excess.	White precipitate is not Formed	Absence of Zinc.
6.	**Test For Calcium:** 2m1 of the extract is added with 2m1 of 4% ammonium oxalate Solution.	Cloudy appearance and white precipitate is obtained	Absence of Calcium.
7.	**Test For Magnesium:** To 2ml of extract sodium hydroxide solution is added in drops to excess.	White precipitate is not obtained.	Absence of Magnesium.

8.	**Test For Ammonium:** To 2ml of extract few ml of Nessler's reagent and excess of sodium hydroxide solution are added.	No Brown colour appeared.	Absence of Ammonium.
9.	**Test For Potassium:** A pinch of substance is treated with 2ml of sodium nitrite solution and then treated with 2m1 of cobalt nitrate in 30% glacial acetic acid.	No Yellowish precipitate is obtained	Absence of Potassium.

10.	**Test For Sodium:** 2 pinches of the substance is made into paste by using HCL and introduced into the blue flame of Bunsen burner.	No Yellow colour Flame appeared.	Absence of Sodium.
11.	**Test For Mercury:** 2m1 of the extract is treated with 2ml of sodium hydroxide solution.	Yellow precipitate is obtained	Absence of Mercury.
12.	**Test For Arsenic:** 2m1 of the extract is treated with 2m1 of sodium hydroxide solution.	No brownish red Precipitate is obtained	Absence of Arsenic.

III. MISCELLANEOUS			
1.	**Test for Starch:** 2ml of extract is treated with weak iodine solution.	No blue colour developed	Absence of Strarch.
2.	**Test For Reducing Sugar:** 5. ml of Benedict's qualitative solution is taken in a test tube and allowed to boil for 2 minutes and added 8 to 10 drops of the extract and again boil it for 2 minutes. The colour changes are noted.	Brick red colour developed	**Presence of Reducing sugar.**
3.	**Test For The Alkaloids:** a. 2m1 of the extract is treated with 2ml of potassium Iodide solution. b. 2m1 of extract is treated with 2ml of picric acid. c. 2m1 of the extract is treated with 2ml of phosphotungstic acid.	Red colour developed Trace Yellow colour developed White precipitate developed	**Presence of Alkaloid.** **Trace of Alkaloid present.** **Presence of Alkaloid**
4.	**Test for Tannic Acid:** 2ml of extract is treated with 2ml of ferric chloride solution.	No black precipitate is obtained	Absence of Tannic acid
5.	**Test for Unsaturated Compound:** To the 2ml of extract 2ml of Potassium Permanganate solution is added.	Potassium Permanganate is decolourised	**Presence of Unsaturated Compound.**
6.	**Test For Amino Acid:** 2 drops of the extract is placed on a filter paper and dried well and 2 ml of biuret reagent is added.	No Violet colour developed	Absence of Amino acids.

7.	**Test For type of Compound:** 2ml of the extract is treated with 2 ml of ferric chloride solution.	No Green colour developed	Absence of oxy quinole epinephrine and pyro catechol.
		No Red colour developed	Anti pyrine, Aliphatic amino acids and Meconic acid are absent.
		No Violet colour developed	Apomorphine, Salicylate and Resorcinol are absent.
		No blue colour developed	Morphine, Phenol cresol and hydro quinone are absent

RESULT:

The bio-chemical analysis of Yaanai Nerunjil Chooranam had shown the presence of Reducing Sugar ,Iron, Unsaturated compound and Alkaloids.

NATIONAL INSTITUTE OF SIDDHA

ACUTE TOXICITY STUDY OF YAANAI NERUNJIL CHOORANAM

[WHO guidelines, 1993]

Principle:

Acute toxicity was carried out in Swiss albino mice with a single exposure of 10 times of the recommended therapeutic dose of test compound the study duration will be 14 days.

Animal species : Swiss albino mice

Age / Weight / Size : 6 weeks. Mice-20-25 gms.

Gender : Both male and female

Number of Animals : Mice: 10

Acclimatization Period : 7 Days

Clinical dose : 4.0 gms/day

S. No	Group	No of mice
1	Vehicle control (saline)	10 (5 male, 5 female)
2	Toxic dose 10X (X-therapeutic dose)- 72mg	10 (5 male, 5 female)

Test Animals

Test animals were obtained from the animal laboratory of the King institute, Chennai and stocked at National institute of Siddha, Chennai. All the animals were kept under standard environmental condition (27+ or – 2 degree c).The animals had free access to water and standard pellet diet (Sai Durga foods pvt.ltd, Bangalore).The principles of laboratory animal care were followed and the Institutional ethical committee approved the use of animals and the study design. **(1248/ac/09/CPCSEA/February/ 2012)**

Route of administration:

Oral route was selected, because it is the normal route of clinical administration.

Test substance and vehicle

Yaanai Nerunjil Chooranam is Brown in colour. The test substance is insoluble in water, in order to obtain and ensure the uniformity in drug distribution the drug is dissolved by aqueous Tween 80 solution (10%).

Administration of doses

Yaanai Nerunjil Chooranam was suspended in aqueous Tween 80 solution (10%), with uniform mixing and it was administered to the groups in a single oral dose. The control groups were received equal volume of the vehicle. The animals were weighed before giving the drug. The dose level was calculated according to body weight, and surface area. Since the clinical dose was 4.0gms\day it was converted to animal dose (0.0072gm).In acute toxicity study, as per WHO guidelines the toxic dose (10X-0.072gm) was administered. The principle of laboratory animal care was followed.

Observations

Observations were made and recorded systematically and continuously observed as per the guideline after substance administration. The animals were monitored for behavioural parameters like

1. Awareness
    - Alertness
    - Visual placing
    - Stereotype
    - Passivity
2. Mood
    - Grooming
    - Restlessness
    - Irritability
    - Fearfulness
3. Motor activity
    - Spontaneous activity
    - Reactivity
    - Touch response
    - Pain response.

Animals were observed for body weight and mortality for 14 days. If animals died during the period of study, the animals were sacrificed. At the end of the 14th day all animals were sacrificed and necropsy was done.

Body Weight

Individual weight of animals was determined before the test substance was administered and daily for 14 days. Weight changes were calculated and recorded. At the end of the test, surviving animals were weighed and sacrificed.

Results:

Yaanai Nerunjil Chooranam at the dose 0.072gm/animal did not exhibit any mortality in mice. No behaviour changes were noted for the first 4 hours and for the next 24 hours and throughout the study period of 14 days. No weight reduction was noted before and after the acute study duration. Reflexes were found to be normal before and after the study. All other observations were found to be normal before and after the study. In Necropsy, the organs of the animal such as, Liver, Heart, Lungs, Pancreas, Spleen, Stomach, Intestine, Kidney, Urinary bladder, Uterus all appeared normal.

NATIONAL INSTITUTE OF SIDDHA - AYOTHIDOSS PANDITHAR HOSPITAL

CHENNAI – 600 047.

POST - GRADUATE- DEPARTMENT OF SIRAPPU MARUTHUVAM

PRE CLINICAL AND CLINICAL STUDY ON YAANAI NERUNJIL CHOORANAM (Internal) AND PATHIYAA LEBANAM (External) FOR THE TREATMENT OF VENPULLI (VITILIGO)

FORM I - SCREENING & SELECTION PROFORMA

1.OP NO: ..... 2. NAME: …….

3. AGE: …… 4.GENDER: …… 5. OCCUPATION: ……6.INCOME:

7. ADDRESS: ……

……

……

8. CONTACT NO: ……

INCLUSION CRITERIA

- Age :18-60 Yrs Yes/ No
- Sex : Both male and female Yes/ No
- Patients having symptoms of Depigmented patches without any structural changes Yes / No
- Patients are willing to give blood and urine for laboratory investigations Yes / No
- Patient willing to sign the informed consent stating that he/she will conscientiously stick to the treatment during 48days but can opt out of the trial of his/her own conscious discretion Yes / No

EXCLUSION CRITERIA

1. Hypertension	Yes /No
2. Diabetes mellitus	Yes /No
3. Albinism	Yes /No
4. Leprosy	Yes /No
5. STD	Yes /No
6. Depigmentation due to burns	Yes /No
7. Pregnancy and Lactation	Yes/No
8. Cardiac diseases	Yes /No
9. HIV	Yes /No
10. Patients with any other serious illness.	Yes /No

ADMITTED TO TRIAL

YES ☐ NO ☐

If yes **OPD** ☐ **IPD** ☐

Date:

Station:

Signature of the Investigator:

Signature of the Lecturer: Signature of the HOD

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FORM l A - HISTORY PROFORMA ON ENROLLMENT

1. SERIAL NO OF THE CASE: …… 2.OP / IP NO: .....

3. NAME: …… 4. AGE: …… 5.GENDER: .....

6. COMPLAINTS & DURATION:

7. HABITS OF

SMOKING, YES / NO If yes, specify duration ---------- yrs

TOBACCO, YES / NO If yes, specify duration ---------- yrs

ALCOHOL, YES / NO If yes, specify duration ---------- yrs

8. DRUG HISTORY:

9. FAMILY HISTORY: Whether this problem runs in family? 1. Yes ☐ 2.No ☐

If yes, mention the relationship of affected person(s)

1._____ 2._____

10.DIETARY HABIT: 1.Vegetarian ☐ 2.Non-vegetarian ☐

11. MENSTRUAL HISTORY:

Date:

Station:

Signature of the Investigator:

Signature of the Lecturer: Signature of the HOD

NATIONAL INSTITUTE OF SIDDHA - AYOTHIDOSS PANDITHAR HOSPITAL

CHENNAI – 600 047.

POST - GRADUATE DEPARTMENT OF SIRAPPU MARUTHUVAM

PRE CLINICAL AND CLINICAL STUDY ON YAANAI NERUNJIL CHOORANAM (Internal) AND PATHIYAA LEBANAM (External) FOR THE TREATMENT OF VENPULLI (VITILIGO)

CLINICAL ASSESSMENT ON ENROLLMENT - FORM l1

1.OP NO: ---------- 2.IP NO: ---------- 3.BED NO: ------ 4.SI NO: ------

5. NAME: ---------- 6. AGE: -------- 7.GENDER: ------

8. DATE OF INITIAL ASSESSMENT: ----------

9. GENERAL EXAMINATION:

1. Body weight [Kg] :
2. Height [cm] :
3. Body Temperature [F] :
4. Blood Pressure (mmHg) :
5. Pulse Rate /min. :
6. Heart Rate / min. :
7. Respiratory Rate /min. :

		Yes	No
8. Pallor	:	☐	☐
9. Jaundice	:	☐	☐
10. Clubbing	:	☐	☐
11. Cyanosis	:	☐	☐
12. Pedal Oedema	:	☐	☐
13. Lymphadenopathy	:	☐	☐
14. Jugular venous pulsation	:	☐	☐

11. SYSTEMIC EXAMINATION:

Nervous system ---------- cardiovascular system ----------

Uro-genital system ---------- Respiratory system ----------

Endocrine system ---------- Gastro intestinal system ----------

11. SIDDHA SYSTEM OF EXAMINATION

1. THEGI (TYPE OF BODY CONSTITUTION):

1. Vatha udal ☐ 2. Pitha udal ☐ 3.Kaba udal ☐ 4. Thontha udal ☐ ----------

2. NILAM (LAND WHERE THE PATIENT LIVED MOST):

1. Kurinji ☐ 2. Mullai ☐ 3. Marutham ☐ 4. Neithal ☐ 5. Paalai ☐

3. KAALAM:

1. Kaar kaalam ☐ 2. Koothir kaalam ☐ 3. Munpani kaalam ☐

4. Pinpani kaalam ☐ 5. Ilavenil kaalam ☐ 6. Muthuvenil kaalam ☐

4. GUNAM: 1. Sathuvam ☐ 2. Rasatham ☐ 3. Thamasam ☐

5. PORIPULANGAL (SENSORY ORGANS):

	Before Treatment	**After Treatment**
Mei		
Vai		
Kann		
Sevi		
Mooku		

6. KANMENDRIYAM (MOTOR ORGANS)

	Before treatment	After treatment
Kai		
Kaal		
Vai		
Eruvai		
Karuvai		

7. KOSANGAL (SHEATH):

	Before Treatment	After Treatment
AnnamayaKosam	Normal /Affected	Normal /Affected
Pranamayakosam	Normal /Affected	Normal /Affected
Manomayakosam	Normal /Affected	Normal /Affected
Vignanamayakosam	Normal /Affected	Normal /Affected
Ananthamayakosam	Normal /Affected	Normal /Affected

8. UYIR THAATHUKKAL: **[THREE HUMORS] (VALI, AZHAL,IYAM)**

A) VALI

	0th day	8th day	15th day	22nd day	29th day	36th day	43rd day	49th day
Praanan								
Abaanan								
Samaanan								
Udhaanan								
Viyaanan								
Naagan								
Koorman								
Kirukaran								
Devathathan								
Dhananjeyan								

B) AZHAL

	0th day	8th day	15th day	22nd day	29th day	36th day	43rd day	49th day
Analakam								
Ranjakam								
Saathakam								
Prasakam								
Aalosakam								

C) IYAM

	0th day	8th day	15th day	22nd day	29th day	36th day	43rd day	49th day
Avalambagam								
Kilethagam								
Pothagam								
Tharpagam								
Santhigam								

9.SEVEN UDAL DHATHUS: (7 SOMATIC COMPONENTS)

	Before Treatment	**After Treatment**
Saaram	Normal /Affected	Normal /Affected
Senneer	Normal /Affected	Normal /Affected
Oon	Normal /Affected	Normal /Affected
Kozhuppu	Normal /Affected	Normal /Affected
Enbu	Normal /Affected	Normal /Affected
Moolai	Normal /Affected	Normal /Affected
Sukkilam/Suronitham	Normal /Affected	Normal /Affected

SIDDHA SYSTEM OF EXAMINATION

1. ENVAGAI THERVU: [EIGHT TYPES OF EXAMINATION]

I. NAADI: [PULSE PERCEPTION]

Nadi Nadai	**0th day**	**8th Day**	**15th Day**	**22th day**	**29th day**	**36th day**	**43th Day**	**49th day**

II .SPARISAM:

Sparisam	**0th Day**	**8th Day**	**15th Day**	**22th day**	**29th day**	**36th day**	**43th Day**	**49th day**

III. NAA:[TONGUE]

Naa	**0th Day**	**8th Day**	**15th Day**	**22th day**	**29th day**	**36th day**	**43th Day**	**49th day**

IV.NIRAM: [COMPLEXION]

Niram	**0th Day**	**8th Day**	**15th Day**	**22th day**	**29th day**	**36th day**	**43th Day**	**49th day**

V.MOZHI: [VOICE]

Mozhi	**0th Day**	**8th day**	**15th day**	**22th day**	**29th day**	**36th day**	**43th day**	**49th day**
High Pitched								
Medium Pitched								
Low Pitched								

VI.VIZHI: [EYES]

Vizhi	**0th Day**	**8th day**	**15th day**	**22th day**	**29th day**	**36th day**	**43th Day**	**49th day**

VII. MALAM: [BOWEL HABITS / STOOLS]

malam	Before treatment	After treatment
Niram		
Irugal		
Ilagal		
Others		

VIII. URINE EXAMINATION

NEERKURI	**Before Treatment**	**After Treatment**
Niram[Colour]		
Manam[Odour]		
Edai[Sp.gra]		
Nurai[Froth]		
Enjal[Deposits]		

NEIKURI	**Before Treatment**	**After Treatment**
Serpentine fashion		
Annular/Ringed fashion		
Pearl beaded fashion		
Mixed fashion		
Other fashion		

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FORM II A - CLINICAL ASSESSMENT DURING & AFTER TRIAL

1. OP/ IP NO: …… 2. SL. NO: ……3.NAME: ……

4. AGE: …… 5. GENDER: ….. 6. DATE OF RECRUITMENT: ……..

		0^{th} day	8^{th} day	15^{th} day	22^{th} day
Site					
Size of the lesions					
Number of lesions					
Borders					
Itching					
Depigmentation of Hair					
New lesions appearance					
Repigmentation of Hair					
Colour change					
Repigmentation	**Centrifugal**				
	Centripetal				

		29th day	36th day	43th day	49th day
Site					
Size of the lesions					
Number of lesions					
Borders					
Itching					
Depigmentation of Hair					
New lesions appearance					
Repigmentation of Hair					
Colour change					
Repigmentation	**Centrifugal**				
	Centripetal				

Date:

Station:

Signature of the Investigator:

Signature of the Lecturer: Signature of the HOD

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FORM-III - LABORATORY INVESTIGATIONS

a) Blood Investigation

Blood Investigations		Normal Values	Before trmt (Date)	After trmt (Date)
Hb(gm/dl)		M:1215/W:11.5-14		
T.WBC (cells/Cu.mm)		4000-11000		
DIFFERENTIAL COUNT (%)	Polymorphs	40-75		
	Lymphocytes	20-40		
	Monocytes	2-10		
	Eosinophils	1-6		
	Basophils	0-1		
T.RBC(million cells/Cu.mm)		M:4.0-5.5 W:3.5-4.5		
ESR(mm/hour)	½ hr.	M:6-12 W:7-18		
	1 hr.			
Blood glucose (mg/dl)	Fasting	70-110		
	PP	80-140		

RFT (mg/dl)	**Blood urea**	**16-50**		
	Serum creatinine	**0.6-1.2**		
LFT (mg/dl)	**Total bilirubin**	**0.2-1.2**		
	Direct bilirubin	**0.1-1.2**		
	Indirect bilirubin	**0.2-0.7**		
	SGOT	**0-40**		
	SGPT	**0-35**		
	Alkaline phosphatase	**80-290**		

b) SPECIFIC TESTS

THYROID PROFILE	**T_3**	**80-200ng/dl**		
	T_4	**5-12ug/dl**		
	TSH	**0.4-6.2uU/ml**		

c) URINE INVESTIGATION

Urine investigation	**Before treatment**	**After treatment**
Albumin		
Fasting sugar		
PP sugar		

d) MOTION EXAMINATION

	Before treatment	**After treatment**
Ova		
Cyst		

Date:

Station:

signature of the investigator:

Signature of the Lecturer: Signature of the HOD

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FORM IV B - WITHDRAWAL FORM

1. SERIAL NO OF THE CASE: ……

2.OP / IP NO: .....

3. NAME: …… 4.AGE: …… 5.GENDER: .....

6. DATE OF TRIAL COMMENCEMENT: ……...

7. DATE OF WITHDRAWAL FROM TRIAL: ……..

8. REASONS FOR WITHDRAWAL:

Long absence at reporting:	Yes/ No
Irregular treatment:	Yes/ No
Shift of locality:	Yes/No
Increase in severity of symptoms:	Yes/No
Development of severe adverse drug reactions:	Yes/No

Date:

Station:

Signature of the Investigator:

Signature of the Lecturer: Signature of the HOD

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FORM IV –C (DRUG COMPLIANCE FORM)

SERIAL NO:

OP/IP NO:

NAME:

AGE/ GENDER:

DRUG NAME: Yaana Nerunjil Chooranam

OPD:

On 1st day-Date:	Drugs issued: 21(Gms)	Drugs returned:	(Gms)
On 8th day-Date:	Drugs issued: 21(Gms)	Drugs returned:	(Gms)
On 15th day-Date:	Drugs issued: 21(Gms)	Drugs returned:	(Gms)
On 22nd day-Date:	Drugs issued: 21(Gms)	Drugs returned:	(Gms)
On 29th day-Date:	Drugs issued: 21(Gms)	Drugs returned:	(Gms)
On 36th day-Date:	Drugs issued: 21(Gms)	Drugs returned:	(Gms)
On 43rd day-Date:	Drugs issued: 21(Gms)	Drugs returned:	(Gms)

IPD:

Day	Date	Morning	Evening	Day	Date	Morning	Evening
Day 1				Day 2			
Day 3				Day 4			
Day 5				Day 6			
Day 7				Day 8			

Day 9				Day 10			
Day 11				Day 12			
Day 13				Day 14			
Day 15				Day 16			
Day 17				Day 18			
Day 19				Day 20			
Day 21				Day 22			
Day 23				Day 24			
Day 25				Day 26			
Day 27				Day 28			
Day 29				Day 30			
Day 31				Day 32			
Day 33				Day 34			
Day 35				Day 36			
Day 37				Day 38			
Day 39				Day 40			
Day 41				Day 42			
Day 43				Day 44			
Day 45				Day 46			
Day 47				Day 48			

Date:

Station:

Signature of the Investigator:

Signature of the Lecturer: **Signature of the HOD**

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FORM IV E - ADVERSE REACTION FORM

SERIAL NO:

OP/IP NO:

NAME: **AGE:** **GENDER:**

DATE OF TRIAL COMMENCEMENT:

DATE OF OCCURRENCE OF THE ADVERSE REACTION: **TIME:**

DESCRIPTION OF ADVERSE REACTION:

Date:

Station:

Signature of the Investigator:

Signature of the Lecturer: Signature of the HOD

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FORM IV D - DIETARY ADVICE FORM

சேர்க்க கூடிய உணவுகள்:

காய்கள்:

முருங்கைபிஞ்சு, (Unripe drumstick)

அவரைபிஞ்சு, (Unripe Dolichos bean)

பிரண்டை (Edible Stemmed Vine)

கீரைகள்:

கரிசாலை (trailing eclipta [Eclipta prostrate])

பொன்னாங்கண்ணி (Sessile plant [*Alternanthera sessilis*])

மணத்தக்காளி (black nightshade)

முருங்கைகீரை (Leaves of Drumstick [*Moringa oleifera*])

பசலைகீரை(Indian Spinach[Basella alba])

சிறுகீரை(Tropical Amaranth [Amaranthus polygonoides])

கறிவேப்பிலை (Curry leaf [*Murraya koenigii*])

கொத்தமல்லி (Coriander)

புதினா (Pudina).

பழங்கள்:

மாதுளை (Pomegranate)

ஆப்பிள் (Apple)

வாழை (Banana)

பேரீச்சை (Dates)

அத்தி (Fig)

திராட்சை (Grapes)

கொய்யா (Guava)

நாவல் (Jambul [*Syzygium cumini*])

சப்போட்டா (Sapodilla)

உலர் திராட்சை (Dried Grapes).

தானியங்கள்

முளை கட்டிய பயிர் வகைகள் (Sprouts)

சோயாபீன்ஸ் (soya bean)

வெந்தயம் (Fengu greek).

அசைவம்:

வெள்ளாட்டுகறி (Meat)

மற்றவை:

பனை வெல்லம் (Palm Jaggery)

பால் (Milk)

தவிர்க்க வேண்டியவைகள்:

கோழிக்கறி, மீன், நண்டு, கருவாடு (Chicken, Fish, Crab,Dry fish)

வேர்க்கடலை (Groundnut)

எள்ளு (Seasame)

பப்பாளி (Papaya)

அன்னாசி (Pineapple)

நல்லெண்ணெய் (Gingely oil)

புளிப்பு (Sour)

எலுமிச்சை (Lemon)

தக்காளி (Tomato)

ஊறுகாய் (Pickle)

புகையிலை (Tobacco)

மது அருந்துதல் (Alcohol).

மருத்துவ அறிவுரை:

உடலில் நோயால் பாதிக்கப்பட்ட இடங்களில் கொடுக்கப்பட்ட லேபனம் தடவி 10 முதல் 15 நிமிடங்கள் இளம் சூரிய வெயில் அந்த இடங்களில் (காலை 6 முதல் 8 மணிக்குள்) படுமாறு நிற்க வேண்டும்.

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FORM IVA-CERTIFICATE OF CONSENT

"I have read the foregoing information, or it has been read to me. I have had the opportunity to ask questions about it and any questions I have asked have been answered to my satisfaction.

I consent voluntarily to participate in this study and understand that I have the right to withdraw from the study at any time without in any way it affecting my further medical care".

"I have received a copy of the information sheet/consent form".

Date:

Signature of the participant

In case of illiterate participant

"I have witnessed the accurate reading of the consent form to the potential participant, and the individual has had the opportunity to ask questions. I confirm that the individual has given consent freely."

Date:

Signature of a witness Left thumb Impression of the Participant

(Selected by the participant bearing no connection with the survey team)

Date:

Station:

Signature of participant:

Signature of the Investigator:

Signature of the Lecturer: Signature of the HOD

தேசிய சித்த மருத்துவ நிறுவனம்

அயோத்திதாஸ் பண்டிதர் மருத்துவமனை சென்னை

வெண்புள்ளி நோய்க்கான சித்த மருந்துகளின் (யானை நெருஞ்சில் சூரணம் மற்றும் பத்தியா லேபனம்) பரிகரிப்புத் திறனைக் கண்டறியும் மருத்துவ ஆய்விற்கான தகவல் படிவம்.

ஒப்புதல் படிவம்

ஆய்வாளரால் சான்றளிக்கப்பட்டது

நான் இந்த ஆய்வை குறித்த அனைத்து விபரங்களையும் நோயாளிக்கு புரியும் வகையில் எடுத்துரைத்தேன் என உறுதியளிக்கிறேன்.

தேதி : கையொப்பம்:

இடம்: பெயர் :

நோயாளியின் ஒப்புதல்

நான் மேற்கூறிய தகவல் படிவத்தை படித்து அல்லது படிக்க கேட்டு கொண்டேன். இது தொடர்பான விளக்கங்களையும் கேட்டு தெரிந்து கொண்டேன்.எந்த வித வற்புறுத்தலின்றி என் சொந்த விருப்பத்தின் பேரில் என்னை இந்த ஆராய்ச்சிக்கு உட்படுத்த என் முழுமனதோடும் சுயநினைவோடும் சம்மதம் தெரிவிக்கிறேன். எனக்கு விருப்பமில்லாத பட்சத்தில் இந்த ஆராய்ச்சியில் இருந்து என்னை எப்போது வேண்டுமானாலும் விடுவித்து கொள்ளும் உரிமையை பெற்றுள்ளேன் என்பதையும் அறிவேன்

நான் என்னுடைய சுதந்திரமாக தேர்வு செய்யும் உரிமையைக் கொண்டு வெண்புள்ளி நோய்க்கான யானை நெருஞ்சில் சூரணம் (உள் மருந்து) மற்றும் பத்தியா லேபனம் (வெளி மருந்து)

மருந்தின் பரிகரிப்புத் திறனைக் கண்டறியும் மருத்துவ ஆய்விற்கு என்னை உட்படுத்த ஒப்புதல் அளிக்கிறேன்.

தேதி : கையொப்பம் :

இடம் : பெயர் :

தேதி : சாட்சிக்காரர் கையொப்பம் :

இடம் : பெயர் :

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FORM IV – PATIENT INFORMATION SHEET

Name of the principal Investigator: **Dr.A.Suganya**

Name of the institute: National Institute of Siddha,
Tambaram Sanatorium,
Chennai-47.

INFORMATION SHEET FOR PATIENTS PARTICIPATING IN THE OPEN CLINICAL TRIAL.

I,Dr.A.Suganya studying MD(Siddha) at National Institute of Siddha,Tambaram Sanatorium is doing a trial on the study Venpulli (Vitiligo). Vitiligo is a common persistent skin disease occurring through the world

In this regard, I am in a need to ask you a few questions. I will maintain confidentiality of your comments and data obtained. There will be no risk of disclosing your identity and no physical, psychological or professional risk is involved by taking part in this study.

Taking part in this study is voluntary. No compensation will be paid to you for taking part in this study.

You can choose not to take part. You can choose not to answer a specific question. There is no specific benefit for you if you take part in the study. However, taking part in the study may be of benefit to the community, as it may help us to understand the problem of defaulters and potential solutions.

If you agree to be a participant in this study, you will be included in the study primarily by signing the consent form and then you will be given the internal medicine Yaanai Nerunjil

Choornam(Internal medicine-2gm BD with water for 48 days) and Pathiyaa Lebanam(External medicine) if you wish to stay in the In Patient ward Yogam Treatment will be provided to you assuring that you will not be definitely hurt during the course of treatment.

The information I am collecting in this study will remain confidential. I will ask you few questions through a questionnaire. I will not write your name on this form. I will use a code instead.

The questionnaire will take approximately 20 minutes of your time.

If you wish to find out more about this study before taking part, you can ask me all the questions you want or contact Dr. A.Suganya…PG Scholar cum principal investigator of this study, attached to National Institute of Siddha,Chennai-47. You can also contact the Member-secretary of Ethics committee, National Institute Siddha,Chennai 600047, Tel No : 91-44-22380789, for rights and participation in the study.

தேசிய சித்த மருத்துவ நிறுவனம்,

அயோத்திதாஸ் பண்டிதர் மருத்துவமனை சென்னை

வெண்புள்ளி நோய்க்கான சித்த மருந்துகளின் யானை நெருஞ்சில் சூரணம்மற்றும் பத்தியா லேபனம்) பரிகரிப்புத் திறனைக் கண்டறியும் மருத்துவ ஆய்விற்கான தகவல் படிவம்.

முதன்மை ஆராய்ச்சியாளர் பெயர்:மருத்துவர்: .....

நிறுவனத்தின் பெயர் :தேசிய சித்த மருத்துவ நிறுவனம்
தாம்பரம் சானட்டோரியம்
சென்னை 47

தேசிய சித்த மருத்துவ நிறுவனத்தில் பட்ட மேற்படிப்பு பயின்று வரும் நான் ..... வெண்படை என்னும் தோலைபாதிக்கும் நோயில் மருத்துவ ஆராய்ச்சியில் ஈடுபட்டுள்ளேன்.

வெண்படை என்னும் நோயானது மேல் தோலில் நிறம் கொடுக்கும் வில இம்மிகள் குறைவதால் உண்டாகிறதுதோலில் துணி, ரப்பர், பிளாஸ்டிக், முதலியவைகளால் ஏற்படும் தொடர்ந்த உராய்வுகளாலும் சில ரசாயன பொருள்களாலும் ஏற்படுகிறது.உடலுக்கு அத்தியாவசியமான சில உலோகச் சத்துகள் அல்லது தாது உப்புகள் குறைந்த சத்தற்ற உணவுகளாலும் உண்டாகலாம். இது பரவ கூடிய நோய் அல்ல.

இந்த ஆராய்ச்சி சம்பந்தமாக சில கேள்விகளை கேட்கவும், தேவையான ஆய்வக பரிசோதனைக்கு தங்களை உட்படுத்தவும் உள்ளேன்.

இது சம்பந்தமான தங்களது அனைத்து விவரங்களும் ரகசியமாக வைக்கப்படும் என உறுதிஅளிக்கிறேன்.

இதில் பயணப்படி முதலிய எந்த உதவித் தொகையும் வழங்கப் பட மாட்டாது.

இந்த ஆராய்ச்சியின் போது உடலுக்கு வேறு பாதிப்பு ஏற்படும் பட்சத்தில் தேசிய சித்த மருத்துவமனையில் தக்க சிகிச்சை அளிக்கப்படும்.

இந்த ஆராய்ச்சிக்கு தாங்கள் விருப்பத்தின் பேரில் உட்படும் பட்சத்தில் உள்மருந்தாக யானை நெருஞ்சில் சூரணம் -2 கிராம் தண்ணீருடன் 2 வேளை(காலை மாலை) உணவுக்குப் பின் ஒரு மண்டலம் (48நாட்கள்) உட்கொள்ள வேண்டும். வெளி மருந்தாக பத்தியா லேபனம் 48 நாட்களுக்கு நோயுள்ள இடங்களில் வெளியே தடவ வேண்டும். வெளி நோயாளர்கள் 7 நாட்களுக்கு ஒருமுறை மருத்துவமனைக்கு வரவேண்டும். உள் நோயாளியாக தங்க விருப்பம் தெரிவிக்கும் பட்சத்தில் நோய்க்கு தகுந்த யோகாசனம் மற்றும் பிராணயாம பயிற்சிகளும் கற்றுத் தரப்படும்

இந்த ஆராய்ச்சியில் நோயினராக சேர்ந்த பிறகு உங்களுக்கு விருப்பம் இல்லையெனில் எப்போது வேண்டுமானாலும் விலகி கொள்ளலாம்

இந்த ஆராய்ச்சி சம்பந்தமாக மற்ற விபரங்களுக்கும் நோயின் தன்மை பற்றியும் முதன்மை ஆராய்ச்சியாளரான மருத்துவர்: ..... (பட்ட மேற் படிப்பாளர், சிறப்பு மருத்துவ துறை) அணுகவும். கைப்பேசி எண் 9884444362

மேலும் இந்த ஆராய்ச்சிக்கு IEC சான்று பெறப்பட்டுள்ளது

இந்த மருந்து சிறப்பாக வெண்புள்ளி நோய்க்காக அங்கீகரிப்பட்ட சித்த மருத்துவ நூலில் கூறப்பட்டுள்ளது. ஏற்கனவே உபயோகத்தில் உள்ள இது போன்ற மருந்து இதுவரை நோயாளிகளிடம் எந்த வித பக்க விளைவுகளை ஏற்படுத்தவில்லை. மேலும் உணவு முறையில் மருத்துவரால் கூறப்படும் பத்தியம் காக்குமாறு அறிவுறுத்த படுகிறது.

NATIONAL INSTITUTE OF SIDDHA

AYOTHIDOSS PANDITHAR HOSPITAL

CHENNAI – 600 047.

POST GRADUATE DEPARTMENT OF SIRAPPU MARUTHUVAM

PRE CLINICAL AND CLINICAL STUDY ON YAANAI NERUNJIL CHOORANAM (INTERNAL MEDICINE) AND PATHIYAA LEBANAM (EXTERNAL MEDICINE) FOR THE TREATMENT OF VENPULLI (VITILIGO).

SERIAL NO:

NAME OF THE ASANAM:

Kiriya gnayiru vanakkam(kiriya pose of sun salutation)

MEDITATIVE POSTURES:

- Tamarai asanam (Padhmasanam) / Sukhasanam
- Mandi uruthi asanam (vajrasanam)
- Savaasanam

NAME OF PRANAYAMAM

- Omkhara Pranayamam
- NithiraiPranayamam
- Mathiriga pranayamam

Day	Date	Morning	Evening	Day	Date	Morning	Evening
Day 1				Day25			
Day2				Day26			
Day3				Day27			
Day4				Day28			
Day5				Day29			

Day6				Day30			
Day7				Day31			
Day8				Day32			
Day9				Day33			
Day10				Day34			
Day11				Day35			
Day12				Day36			
Day13				Day37			
Day14				Day38			
Day15				Day39			
Day16				Day40			
Day17				Day41			
Day18				Day42			
Day19				Day43			
Day20				Day44			
Day21				Day45			
Day22				Day46			
Day23				Day47			
Day24				Day48			

Date:
Station:
Signature of the Investigator:
Signature of the Lecturer: **Signature of the HOD**

NATIONAL INSTITUTE OF SIDDHA, CHENNAI – 600047

CERTIFICATE OF BOTANICAL AUTHENTICITY

Certified that the following plant drugs used in the Siddha formulation **Yaanai Nerunjil Chooranam** (Internal) and **Pathiyaa Lebanam** (External) for the treatment of **Venpulli** (Vitiligo) taken up for Post Graduation Dissertation studies by **Dr.A.Suganya**, M.D.(S), II year, Department of Sirappu Maruthuvam, 2011-12, are identified and authenticated through Visual inspection / Experience, Education & Training/ Organoleptic characters/ Morphology / Micromorphology / Taxonomical/ Microscopical methods.

Pedalium murex Linn. (Pedaliaceae), Whole plant
Terminalia chebula Retz. (Combretaceae), Fruit
Brassica juncea (Linn.) Czern. & Coss. (Brassicaceae), Seed
Nerium indicum Mill. (Apocynaceae), Root bark
Azadirachta indica A. Juss. (Meliaceae), Root bark
Psoralea corylifolia Linn. (Fabaceae), Seed

MEDICINAL BOTANY CHENNAI 600 047 National Institute of Siddha

Certificate No: NIS/MB/46/2012

Date: 12-6-12

12/6/12
Authorized Signatory
Dr. D. ARAVIND, M.D.(s),M.Sc.,
Assistant Professor
Department of Medicinal Botany
National Institute of Siddha
Chennai - 600 047, INDIA

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

69, Anna Salai, Guindy, Chennai-600 032

This Certificate is awarded to Dr A.SUGANYA

for participating as a ~~Resource Person~~ / Delegate in the VI Workshop on

"Research Methodology & Biostatistics"

for AYUSH Post-Graduates & Researchers

organized by the Department of Siddha

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

from 12th September 2011 to 16th September 2011

Dr. MAYILVAHANAN NATARAJAN
M.S.Orth. M.Ch.Orth. (L'pool) Ph.D. D.Sc. F.R.C.S. D.Sc. (Hon)^3
VICE CHANCELLOR

Dr. SUDHA SESHAYYAN, M.S.
REGISTRAR (FAC)

Dr. N. KABILAN, M.D. (Siddha)
READER, DEPT. OF SIDDHA

IAEC PROTOCOL NO : 1248/ac/09/CPC SEA/4-22/2011

20/12/2011

CERTIFICATE

This is certify that the project title. PRECLINICAL AND CLINICAL STUDY ON "YAANAI NERUNJIL CHOORANAM" (INTERNAL MEDICINE) AND "PATHIYAA LEPANAM" (EXT MEDICINE) FOR THE TREATMENT OF "VENPULLI" (VITILIGO)

has been approved by the IAEC.

Prof. Dr. K. Manickavasakam
Name of Chairman/Member Secretary IAEC:

Dr. B. Jayachandran Dare
Name of CPCSEA nominee:

Signature with date

Chairman/Member Secretary of IAEC:

CPCSEA nominee:

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

NATIONAL INSTITUTE OF SIDDHA

(An Autonomous Body under Department of AYUSH)
Ministry Of Health & Family Welfare, Government of India

Tambaram Sanatorium, Chennai - 600 047
Tel : 044-22411611 Fax : 044-22381314
E-mail : nischennaisiddha@yahoo.co.in
Website : www.nischennai.org

Name: Dr. A. Suganya Reg. NO: 32102206
Title: Pre clinical and Clinical Study on "Vaanai Nerungil Chooranam" (Internal) and "Pathiyaa Lebanam" (external) for the treatment of "Venpulli" (Vitiligo)
No. NIS/IEC/2011/3/22 - 24/12/2011

DECSION

Opinion of the Institutional Ethics Committee – Please Check one
✓ Approval _____ Modifications required prior to approval (Please specify one space below) _____ Disapproval K. Manickavasakam (Dr. K. MANICKAVASAKAM) Member Secretary Date of review: _____ Signed: V. Subramanian (Please print name) Dr.V.SUBRAMANIAN Chair Person (Please delee as appropriate, Chairperson, Secretary)
Modifications needed Modification given to candidate
The research proponent is hereby informed that the Institutional Ethics Committee will require the following: 1. All adverse drug reactions (ADRs) that are both serious and unexpected to be reported promptly to the IEC within 7 working days 2. The progress report to be submitted to the IEC atleast annually 3. Upon completion of the study, a final study status report needs to submitted to the IEC

சித்த மருத்துவ மைய ஆராய்ச்சி நிலையம், அரும்பாக்கம், சென்னை - 600 106
सिध्द केन्द्रीय अनुसंधान संस्थान, अरुम्बाक्कम, चेन्नई- 600 106
Siddha Central Research Institute
Arignar Anna Govt. Hospital Campus, Arumbakkam, Chennai-600 106
(Central Council for Research in Siddha, Department of AYUSH,
Ministry of Health & Family Welfare, Govt. of India)
Phone: 044-26214925, Tele Fax: 044-26214809, E.mail: crisiddha@gmail.com, Web: www.crisiddha.tn.nic.in

07.03.2012

CERTIFICATE

Certified that the minerals submitted for identification by Dr. A. Suganya, II year M.D. (Siddha), National Institute of Siddha, Tambaram Sanatorium, Chennai-47 are identified as Indhuppu – Sodium chloride.

(R.Shakila)
Research Officer (Chemistry)

(K. Meenakshi Sundara Moorthy)
Asst. Director- In charge

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- pathartha guna villakkam,
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- Noi Naadal Noi Mudhal Naadal- Dr. Ma. Shanmugavelu, H.P.I.M
- Yugi Vaithiya Chinthamani
- Agathiyar Kanma Kaandam
- Guru Naadi Nool
- Dhanvanthri Vaidhiyam
- Agathiyar Vaidhiyam
- Thirumoolar Karukkadai Vaidhiya Nool
- Pathinen Siddhar Naadi Nool
- Siddhar Aruvai Maruthuvam – Dr.Ka.Su. Uthmaraayan
- Aathma Rakthamirutha Vaithiya Sara Sangiragam
- Thirukkural
- Thirumanthiram
- Anubava Vaithiya Deva Ragasiyam
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