

**NATIONAL INSTITUTE OF SIDDHA**

**Tambaram Sanatorium, Chennai - 47**

**(AFFILIATED TO THE TAMIL NADU DR. M.G.R. MEDICAL UNIVERSITY),  
CHENNAI - 600 032**

# NEER PEENISAM

**(DISSERTATION SUBJECT)**



*For the partial fulfillment of the  
requirements to the Degree of*

**DOCTOR OF MEDICINE (SIDDHA)**

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## INTRODUCTION

The science of medicine must have originated with primitive and foremost as it is of fundamental importance to his happiness, well being and survival and then, must have developed all long, even – since the dawn of civilisation.

Siddha is perhaps the earliest medical science that laid stress on positive health, a harmonious blending of physical, mental, social, moral and spiritual welfare of an individual.

Siddhars have mentioned the functional constitution of the body in a beautiful way. All the things (including man) are made up of five basic elements of Pancha Bootha. (Earth, water, fire, air, and sky). Vatha, Pitha, Kaba constitutes three humours. Which is also formed by the combination of pancha boothas. The functions of vatha, pitha, kaba in the body are indicated to the physician as Naadi (pulse).

During the observation of Naadi, if the three humours are in a ratio of 1: ½:¼, respectively vatha, pitha, kaba, it implies that there is no disease. Imbalance of these ratio indicates there is disease in the body. Several hundred years ago siddhars the great saints had established the cause of a disease. For example, diet and daily activities of an individual are the main causes of the disease. Food contains six tastes (Sweet, salt, sour, bitter, pungent and astringent). These taste also made up of pancha bootha combination. When we ingest food abnormally it will make imbalance of three humours. Abnormal physical activities also enhances the vatha,pitha, kaba level. They also causes the disease.

In siddha system, plants, metals, and animals are used to prepare the medicine. These preparations cured the disease by rearranged the imbalanced vatha, pitha, kaba. Health for all by 2000 A.D is the motto of the world health organization. (W.H.O) primary health for all respective of the system of medicine followed is the ultimate aim of any system. Taking into account this

Himalayan task, it is clear that modern medicine alone cannot be in a position to help us. Natural compounds may have an advantage over these drugs, because being constituents of living systems. They may be less toxic and hence more acceptable for human applications.

The Indian system of medicine is the best accepted system of medicine and is deep rooted in villages and cities being harmless in nature. The advanced nations of the world are evincing greater interest in the efficacy of this herbal medicine. We all live in this scientific world where everything is approved by the people only when proved scientifically. So it is our prime duty and endeavour to make our siddha system popular all over the world by subjecting the system to proper research by approved scientific parameters.

Many multinational companies and foreign individuals, with one eye on the balance sheet, want not only to learn our medicine but also to patent the effective drugs from our system.

The system needs to be made universally acceptable. These drugs need recognition and standardization including suitable dosage forms and studies and investigations should be done in pharmacology, Phytochemistry, Pharmaceutics to standardize siddha drugs.

There are four thousand four hundred and forty eight (4448) types of Diseases. Among them peenisam is one of the diseases affecting the head. In this research the author has selected *Neerpeenisam* for doctoral studies. It is one of the types of peenisam. It is a minor disease but gives more troublesomeness in 4<sup>th</sup> to 6<sup>th</sup> decades (40yrs – 60yrs) – Our siddha literature clearly states vital causes for *Neerpeenisam* which includes changes in the environment, changes of food, habit and so on.

Comparison of siddha aspects with the modern aspects is essential and then only the ancient siddha system will overcome in the modern scientific world. “*Neerpeenisam*” can be correlated with *sinusitis* with modern Medicine.

## AIM AND OBJECT

- 1) The main aim of the present study of *Neerpeenisam* with clinical Study is to collect and review the views and ideas of the ancient siddhars about this disease and also to know efficiency of the trial drug on *Neerpeenisam*.
- 2) Collection of various literatures dealing with definition, aetiology, Classification, sings and symptoms, prognosis, line of treatment, diet control and prevention of *Neerpeenisam*.
- 3) To expose the efficiency of siddhar's diagnostic methods.
- 4) To have an idea of them incidence of this disease with reference to age,sex, socio economic status, family history and paruvakalam.
- 5) To study under the topics of mukkutram, poripulangal,udal thathugal,Ennvagai thervugal, Naadi, Neerkuri and Neikkuri, the changes brought about by this disease in normal conditions.
- 6) To know the extent to which the correlation (with allopathy system) of Aetiology, classification, sings and symptoms, investigation diagnostic methods and line of treatment.
- 7) To use modern parameters in the investigation of the disease that enhances to observe the progress of the patient.
- 8) The trial drug is subjected to Bio chemical analysis, pharmacological actions, and microbiological action on this disease.

## REVIEW OF LITERATURE

### SIDDHA ASPECTS

The siddha system of medicine deals each and every corner of science. It not only shows the art of healing but also gives the art of living. It throws light on ultimate of goal as attaining the eternal soul.

மிகினும் குறையினும் நோய் செய்யும் நூலோர்

வளிமுதலாய் எண்ணிய மூன்று

-திருக்குறள்

In siddha medicine, the human system is mediated by three humours Vatham, pitham and kabam. The three humours are in a ratio of 1:½:¼ respectively. If any one of these three is on the decline, disease results.

Ancient siddha literatures classified the diseases under 4448 types. The classification of these disease based on the threedoshic theory. In such a way 1008 diseases are classified in the head and neck. Among them the diseases of nasal origin are 86. The “*Neer Peenisam*” is one of them.

Before reviewing the specific signs and symptoms of the dissertation topic “*Neer Peenisam*”, other information regarding definition, aetiology, general signs and symptoms, pathology and nadi nadai of peenisam have been dealt with, since they are common for all types of peenisam.

### SYNONYMS

Neerkovai, mookkadaippu, mookkuneer paaichal.

### DEFINITION

Peenisam is a disease characterized by redness of the nasal mucous membrane, sneezing, mild conjunctivitis with lacrimation, watery nasal discharge, head ache, frequent discharge of mucous, pus and blood.

[Ref: siddha maruthuvam, Noi nadal Noimuthalnadal, part – II]

”தெரிந்து கொள்வாய் நீர்க்கோவை ரோகந் தன்னை

திறமாகச் சொல்லுகின்றேன் நன்றாய்க்கேளு

அறிந்து கொள்வாய் தேகத்தின் சவ்விலேனும்  
 ஆக்கையின் தோலடியிருக்கும் சவ்விலேனும்  
 பரந்து நீர் இரத்த நீர் சேர்வதாலே  
 பரிவது நீர்க்கோவை யென்று பேராய்த்  
 துரந்துமே வெளியாகத் தோற்றாலாலே  
 தொல்லுலகில் அநேகவிதப் பேருமாச்சே  
 ஆச்சப்பா சிரசில் தான் நீரே கண்டால்  
 அப்பனே அதற்கு சலமஸ்தக மென்பார்  
 பேச்சப்பா மார்பில் நீரேற்றங் கண்டால்  
 புகழான உரோசல ரோகமென்பார்”

[Ref: Agasthiyar Gunavagadam]

Here Neerkovai is generally defined as the fluid or blood collection in the membranes of the body or under the skin. It is further named according to the localization. Fluid collection in the head is known as salamasthagam.

சிரசில் கனலெழுந்து சூலையால் ரோகம்  
 அதிகரித்து சீழ்போலும் சிராய் போலும்  
 காணப்படும் ஒரு வித மூக்கு வியாதி

[Ref: Athma ratchamirtham, T.V.Sambasivam pillai maruthuva agarathi]

Heat is increased and affects the head, results in pain which aggravates the disease and causes purulent discharge with solid substance.

"சத்தேயிருமல் தும்மல்வரும் ஜலமாய்மூக்கில் நீர்பாயும்  
 முத்தேபிடரி முடியிசப்பு மொருக்கலண்டி பிரண்டிருக்கும்  
 மற்றவியாதிக் கிடங்கொடுக்கும் மாகில்கோழை மரித்துவிழும்  
 நித்தம் நோய்கள் நிறைந்திருக்கும் நீர்ப்பீநிசமு மெனலாமே”

[Ref: Yugi Vaithiya Kaviyam Page: 222]

## AETIOLOGY

### I: [SIDDHA MARUTHUVAM, ARUVAI MARUTHUVAM AND NOI NADAL NOI MUTHALNADAL PART – II]

1. Drinking of very cold water.
2. Exposure to cold air and atmosphere
3. Inhalation of air, polluted with smoke or dust
4. Smelling things which include sneezing.



5. When the body is heat taking bath in cold water, which increases kaba.
6. Eating cold foods.
7. Drinking contaminated water.
8. Suppression of vomiting and shedding tears.
9. Excessive talk and speaking loudly.
10. Excessive sleep or sleeplessness.
11. In association with venereal disease.
12. In yoga, body heat transmitted from moolatharam to head will cause Peenisam.

## **II. JEEVA RATCHAMIRTHAM (NASIGA ROGA PETHAM)**

1. Including in cold air.
2. Nasal blockage by dust.
3. Loud speech.
4. Excessive sleep or sleeplessness
5. Taking bath in cold water daily.
6. Suppressing tears.
7. Lying in uneven bed.
8. Excessive sexual indulgence
9. Suppressing vomiting.

All these activities vitiate vatha, pitha and kaba which accumulate in the nose and cause peenisam.

## **III. T.V.SAMBASIVAM PILLAI MARUTHUVA AGARATHI**

Mucous running off through the nostrils due to an inflammation in the head or cold affection of the nose.

1. Excessive indulgence in sexual intercourse.
2. Body heat is transmitted to head.
3. Entrance of minute particles of dust or smoke into the nostrils.
4. Excessive application of heat or cold.
5. Voluntary retension of stools and urine.
6. Diseases of the nose.

#### IV.PATHINEN SIDDHAR NADI SASTHIRAM, GURU NADI (27)

“பீனிசந்தான் வரலாறு சொல்லக் கேமின்  
பேதமுடன் கனலெழும்பி வாயுவுஞ் சேர்ந்து  
ஊனுருகி மண்டையிலே தொகுக்கப்பட்டு  
உறுதியுடன் வாயுவங்கே யுறுத்துப்பின்னும்  
ஈனமுடனோடும் நீர் சீழிரத்தம்  
பிடித்து வருங்காது மூக்கினோடு  
தேனருவி வந்தது போல் செங்கல் சிருயுஞ்  
சேர்ந்து விழும் பீனி சத்தின் செய்கையாமே“

The heat and vayu combine together, reach and affect the head,  
Thereby causing peenisam.

#### V.SIDDHA MARUTHUVANGA CHURUKKAM

விழியினில் நீரடக்கில் விதமான யிருத்து ரோகம்  
வழியடு பீனிசங்கள் வந்திடும் நேத்ர ரோகம்  
அழுகிடும் சிரசில் ரோகம்

Suppression of tears will cause peenisam

#### VI. AGASTHIYAR KANMA KANDAM 300

பகரறிய பீனிசங் சளிரனத்தோடு  
நிகரில்லா வொருதலைநோய் மண்டைகுத்தும்  
நிசமாக வந்த கன்மம் நிசமாய்க் கேளு  
திகரவே காயடித்த யிலை பறித்தல்  
தளிர் கொழுந்து தழை முறித்தல் பட்டை வெட்டல்  
நிகரில்லா பூப்பறித்தல் வேர் கொடிகள் வெட்டல்  
நினைவு கெட்டு சீவசெந்து தனையடித்தலாலே

Peenisam is considered as a kanma disease.Plucking leaves, fruits,  
young shoots, flowers.Cutting barks, roots, twigs.Hurting the animals.All  
these activities will cause peenisam.

#### VII. THERAIYAR SEKARAPPA

பீனிசமான பிணிக்கண மெல்லா  
மான திறத்தை யறைந்தது போக  
வூனமிலாம லுரைத்த மருந்தை  
நானவில் கின்றன் னானிலமீதே

எண்டின முற்ற விரண்டு தரந்தான்  
பண்டுள தாகுமற் பங்கினத்தானந்  
திண்டிற லேகாடு செய்திறலற்றான்  
மண்டை வறண்டு மலிந்திடு நோயே  
நோய்களெலாமிது நோயென வாடும்  
பேயென வாடிய **பீனிசநோய்கள்**  
சீயறல் சோணிதஞ் சிட்டிவை நான்கு  
மோய்தர மூக்கை யொ றுக்குமிதையா .

Lack of taking oil bath twice in eight days leads to dryness in the head causing purulent, watery or blood discharge and nasal lock.

காய்தலிலாப் தகை கண்டசவத்தை  
யோதலிலாதிடை யுண்டசலத்தால்  
வேதலிலாப்பிணி வேதனையாக்கி  
பேதலதாகிய **பீனிசமாமே**

Drinking unboiled water and contaminated water will cause penisam.

## PRODOROMAL SYMPTOMS

1. Itching and irritation in the nose, result in rubbing the tip of the nose, become markedly red, tense and tender.
2. Redness and lacrimation of the eyes.
3. Nasal obstruction may often affect the sonoring of the voice
4. Itching and blockage of ears
5. Difficulty in breathing
6. Profuse watery discharge from the nose

(Noi Nadal Noi muthal Nadal part – II)

## CLINICAL FEATURES

### I. NAGAMUNIVAR THALAI NOI MARUTHUVAM AND SIDDHAR ARUVAI MARUTHUVAM

தலைமிக வலிக்கும் நாசி சளிவிழுமொருவுண்டாகும்  
நலிவுரு தும்மலுண்டான் நாட்செவில் வரளும் நாசி  
மலைவுறத் தீரண்டு விழும் வாயுமே நாற்றமுண்டாம்  
பெலமுற **மூக்கடைக்கும் பீனிசமென்று** தேரே

தலையுங்கனத்து வலிகொண்டு சளிபோனா சாற்றிரண்டு விழும்  
அலையுமொருப்போலோடு காலு மறுதிப்படவேமாறாது  
நிலையுங்கடாது பரிகார நியதிப்படவே செய்துவரில்  
தொலையுஞ் சொன்னோம் பீனிசமுஞ் சொல்லுங் கபால வரட்சியுமே

1. Severe head ache
2. Mucosal nasal discharge
3. Sneezing
4. Dryness of the nostrils
5. Bad odour of the mouth
6. Nasal blockage
7. Heaviness of the head

## **II.AGASTHIYAR-2000**

கண்ட முகங்கா துங்கரகரத் தூர்வது போலத்  
துண்டமுந் தினவும் புத்தி தும்மியே தண்ணீர் வீழ்ந்து  
மண்டையுங் கனத்து நொந்து வாதமும் பகைக்குமாகில்  
முண்டகமதிக்கு மாதே! மூக்கு நீர் பாய்ச்சல் போம்

1. Irritation of the throat, face and ears
2. Recurrent sneezing with waterey nasal discharge
3. Heaviness of the head
4. Head ache

## **III.JEEVA RATCHAMIRTHAM (NASIGAROGA PETHAM)**

1. Difficulty in breathing
2. Recurrent sneezing
3. Nasal voice
4. Bad odour in the nose
5. Head ache

## **IV.ATHMA RATCHAMIRTHAM**

1. Nasal blockage and nasal discharge
2. Recurrent sneezing

3. Heaviness of head and head ache
4. Fever
5. Tastelessness
6. Anosmia

#### **V.GUNAVAKADAM**

தலையும் வலித்து ஊறும் நாசிசனியும் விழுந்துஓடுபட்டு  
மலையுனாதளச் சென்றால் வறண்டேயி றுக்கித்திரண்டு விழும்  
உலையு மிகவும் நாற்றமுமாம் மூடே தண்ணீர் விழுந்திருக்கும்  
பலமுஞ் சென்று மூக்கடைக்கில் பீனிசமென்பார் பெரியோரே

1. Head ache
2. Nasal itching and mucosal discharge
3. After few days purulent nasal discharge with bad odour
4. General weakness
5. Nasal obstruction

கண்டமேல் முழந்தால் காது கரகரத்தூர்வதேபோல்  
துண்டமே தும்மலுண்டாய் சொரிந்துதான் சலமும் வீழ்ந்து  
மண்டையுங் கனத்து நொந்து வலியுமோ மிகவுமாகில்  
பண்டுசேர் மூக்கு நீரின் பாய்ச்சலா மென்னலாமே

1. Pain above the neck region and ears
2. Sneezing
3. Profuse watery discharge
4. Heaviness of the head
5. Head ache

### **CLASSIFICATION OF PEENISAM**

#### **I.ACCORDING TO SIDDHA MARUTHUVAM AND NOINADAL NOIMUTHAL NADAL**

Peenisam is classified into nine types. The classifications are,

1. Vali Peenisam
2. Azhal Peenisam
3. Iya Peenisam

4. *Neer Peenisam*
5. Kuruthi Peenisam
6. Seezh Peenisam
7. Siraai Peenisam
8. Mulai Peenisam
9. Kazhuthu Peenisam

## **II.ACCORDING TO ATHMARATCHAMIRTHA SARA SANGIRAGAM**

Peenisam has been classified into nine types,

1. Vatha Peenisam
2. Pitha Peenisam
3. Silethuma Peenisam
4. *Neer Peenisam*
5. Seezh Peenisam
6. Uthira Peenisam
7. Siraai Peenisam
8. Moola Peenisam
9. Kanda Peenisam

## **III.ACCORDING TO JEEVA RATCHAMIRTHAM**

Peenisam has been classified into 18 types. The classifications are

1. Vatha Peenisa Rogham
2. Pitha Peenisa Rogham
3. Silethuma Peenisa Rogham
4. Threedosha Peenisa Rogham
5. Ratha Peenisa Rogham
6. Thusta Peenisa Rogham
7. Athithummal Peenisa Rogham
8. Nasika Shosa Rogham
9. Nasika Naga Rogham
10. Kirana Bhega Rogham
11. Nasika sirava Rogham

12. Apeenisa Rogham
13. Nasika theebigai Rogham
14. Boodhi Nasika Rogham
15. Bhuya sira Nasika Rogham
16. Nasika pudaga Rogham
17. Nasa Rasa Rogham
18. Nasi Karputha Rogham

#### **IV.ACCORDING TO T.V.SAMBASIVAM PILLAI MARUTHUVA AGARATHI**

Peenisam has been classified into seven types only. The classifications are,

1. Vatha Peenisam
2. Pitha Peenisam
3. Silethuma Peenisam
4. *Neer Peenism*
5. Seezh Peenisam
6. Ratha Peenisam
7. Siraai Peenisam

#### **V.ACCORDING TO THANVANTHIRI VAITHIYAM**

Peenisam has been classified into ten types. The classifications are,

1. Vatha Peenisam
2. Pitha Peenisam
3. Kaba Peenisam
4. Vatha pitha Peenisam
5. Vatha kaba Peenisam
6. Pitha kaba Peenisam
7. Mukutra Peenisam
8. Sala Peenisam
9. Ratha Peenisam
10. Varatchi Peenisam

#### **I. ACCORDING TO SIDDHAR ARUVAI MARUTHUVAM**

Peenisam has been classified into four types only.

1. *Neer Peenisam*

2. Kuruthi Peenisam
3. Seezh Peenisam
4. Siraai Peenisam

### **COLLECTIONS OF NEER PEENISAM**

Since the author has selected *Neer peenisam* as her dissertation subject collection of the same has been completed here from various texts.

### **I.NOINDAL NOI MUDAL NADAL PART-II**

#### **Causes**

1. Exposure to cold air
2. Cold waterbath
3. Intake of cold food and cold water
4. Inhalation of air polluted with smoke or dust.

#### **Symptoms**

1. Nasal obstruction
2. Watery discharge from the nose
3. Head ache
4. Sometimes associated fever
5. Malaise
6. Tiredness in arm and legs

### **II. ATHMA RATCHAMIRTHA SARA SANGIRAGAM**

1. Watery Discharge from the nose
2. Itching in the occipital region and face due to exposure to cold air and atmosphere
3. Irritation of the nose
4. Frequent sneezing
5. Heaviness of the head and head ache.

### **III. THANVANTHIRI VAITHIYAM**

கலந்திடுஞ் சிரசிலேறிக் கழிக்குநீர் போகாதாகித்  
துலங்கிய நெஞ்சில் வீழ்ந்து சுரமுடனிருமலுண்டா  
மலங்கவே தும்மு மூக்கில் வழுவழத்தோடுந் தண்ணீர்  
நலங்கினச் சலப்பீனிச மிதுவென நாட்டுவோமே



1. Fever and cough
2. Sneezing
3. Profuse watery discharge from the nose

#### IV. T.V. SAMBASIVAM PILLAI MARUTHUVA AGARATHI

1. watery discharge from the nose
2. Sneezing in the rainy season
3. Pain in the cervical region.
4. Itching in the occipital region and face

#### V. IN JEEVA RATCHAMIRTHAM

Peenisam has been classified into 18 types, “Adhi thummal Peenisa Rogham” is one of the type, which can be correlated with the Symptoms of *Neer Peenisam*.

- 1.Recurrent Sneezing
- 2.Nasal obstruction

#### MUKKUTRA VERUPADUKAL

When the body heat raises due to the food, habits etc., pitham is vitiated and the level of kabam is increased by the activities and both the pitham and kabam interact and then produce Peenisam. According to some siddha Texts during the process of yoga, the vitiated body heat along with udhana vayu

Reaches the head where it combines with kaba and then forms Peenisam.

#### NAADI NADAI

1. பண்பான பித்தத்தில் சேத்தும நாடிப்  
பரிசித்தாலத்தி சுரமிளைப்பு ஈளை  
கண்காது நயன மலம் நீருமஞ்சள்  
கணவயறு பொருமல் மஞ்சள் நோய் கண்ணோவு  
உண்போது மறுத்தல் ரத்த விப்புருதிதானும்  
உளை மாந்தை பீனிசமும் ரத்த வீக்கம்  
நண்பனா காமாலை சோகை வெப்பு  
நணுகி வந்த பல பிணியும் நண் ணுந்தானே

2. கண்டாயோ சிலேற்பனத்தில் வாத நாடி  
கலந்திடுகில் வயி றுபொருமல் கனத்த வீக்கம்  
உண்டோலோ ஓங்காரஞ்சுத்தி விக்கல்  
உறுதிரட்சை வாய்வு வலி சன்னி தோடம்  
விண்டாலே இளைப்பிருமல் சோகைபாண்டு  
விடபாகம் விட சூவை பக்க வாதம்  
திண்டுடா நாசிகா பீடங்கக்கல்  
சிர நோய்கள் பலவும் வந்து சிக்குந்தானே  
-சதக நாடி

### **PINIYARI MURAIMAI (DIAGNOSIS)**

Piniyari muraimai is the method of diagnosing the disease affecting the man. It is based upon three main principles. They are poriyalarithal, pulanal arithal and vinathal. Porigal are considered as the five senses of perception namely Nose, Tongue, Eye, Skin and Ear.

While pulanal are five object of senses. They are smell, taste, sight, sensation and sound. Physician's pori and pulan are used as the tools for examining the pori and pulan of the patient, respectively.

Vinathal is obtaining the informations that regarding the history of the Disease, the clinical features etc., from the patient or his immediate relatives who are taking care of him, when the patient is not in a position to speak or if the Patient is a child.

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

Siddhars have developed a unique method of diagnosing the Disease by "En Vaigai thervugal".

### **I. NAADI**

The three Uyirathukkal are formed by the combination of

Edakalai + Abanam = Vatham

Pinkalai + piranan = Pitham

Suzhumunai + Samanam = Kabam

In *Neer Peenisam*, the following stages of Naadi are seen Commonly.

1. Pitha kaba
2. Pitha vatham
3. Vatha kabam

## **II. SPARISAM**

In the case of *Neer Peenisam*, swelling can be noticed at maxillary region. In few cases fever also occur.

## **III. NAA**

In *Neer Peenisam*, no abnormality is seen in the tongue.

## **IV. NIRAM**

In *Neer Peenisam*, mucos membrane of the nose appears, pale blue violaceous in colour.

## **V.MOZHI**

In the case of *Neer Peenisam*, decreased resonance due to nasal congestion can be noticed.

## **VI. VIZHI**

In *Neer Peenisam*, irritation, Lacrimation and blurring of vision

## **VII. MALAM**

No abnormality is seen in stools.

## **VIII. MOOTHIRAM**

- **Neerkuri:**

Urine of the *Neer Peenisam* Patients, straw colour in general and in some cases it may be yellow

- **Neikuri:**

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

After waking up in the morning, urine is collected in a glass container and is subjected to analysis within disturbing the nature of the neikuri should be noticed in direct sunlight.

## **LINE OF TREATMENT**

In siddha system, the main aim of the treatment is for removal of udarkuni (due to mukkutram) and manapini (due to alteration in mukkunam).

Treatment is not only for removal of disease, but for the prevention and improving the body condition also.

This is said as follows,

Kappu (prevention)

Neekkam (Treatment)

Niraippu (Restoration)

The three humours which are responsible for organization, regulation and integration of the bodily structures and their physiological functions are always kept in a stage of equilibrium by word, thought, deed, and food of the individual. The general aetiological factors for constitutional discomfort are said to be incompatible diet, mental, and physical activities. When treating for removal of the diseases, the following principles must be noted.

“நோய் நாடி நோய்முதல் நாடியது தணிக்கும்  
வாய்நாடி வாய்ப்பச் செயல்”

“உற்றானளவும் பிணியளவுங் காலமும்  
கற்றான் கருதிச் செயல்” - திருக்குறள்

So it is essential to know the disease and the cause for the onset of disease, the nature of the patient, the severity of illness, the seasons and time of the occurrence of the diseases must be observed.

The line of treatment consist of,

1. Regulation of affected kutram.
2. Drug for the disease
3. Diet and restrictions.
4. special medicine such as pranayama and yoga if necessary

In the case of *Neer Peenisam* the medicines should be given to normalize the vitiated kaba and pitham. The internal medicines which reduce the vitated kaba should be given. The medicated oil could be used for bathing purpose to reduce the increased heat.

#### **DIET AND RESTRICTIONS**

1. Advised not to be in the polluted places and cold environment.
2. To avoid cold water for drinking as well as for bathing and advised him to use hot water.

3. Buttermilk, ice cream, lemon juice, chilled drinks should be avoided.
4. Vegetables like suraikkai, poosani, peerkku, pudal etc., that include kaba should be added.
5. Pepper, karisalai, thoothuvalai, manathakkali, murungaikai, karunai, nellikai should be added.
6. Sleep during day time is avoided and after having oil bath in the morning also.

## **PRANAYAMA AND YOGA**

To live harmoniously, the body and mind should be developed in a balanced way through pranayama and yoga. Regular practice of pranayama and asanas combined with control of the mind will combat negative elements such as ignorance, laziness, inertia and over excitement as well as increasing the will power. Pranayama:

Prana means - Vital force or breath or cosmic energy

Ayama means - the control of the prana.

i.e., the control of the vital force by concentration and regulated breathing.

The vital force manifests itself in the body as a respiratory function. It is the regulator and animator of the psyche. Pranayama provides a remedy for several of the physical and psychic disturbances of which modern man is the victim. The main object of pranayama is to acquire mastery of the vital force acting within the body.

Regarding *Neer peenisam*, the following methods of pranayama can be advised to the patients.

### **1. Rhythmic breathing:**

During the first-inhalation takes exactly the same time as exhalation. During the second -the two take the same amount of time, but there is a pause between inhalation and exhalations equal to half of the time they each take.

### **2. Alternate breathing:**

(Nadi-sodhana)

### **3. Surya Bhedana:**

(Breathing that revitalizes the nervous system)

Surya means - sun (Pingalai)

Bhedana - to open

Inhale through the right the nostril (produces heat in the body and exhale by the left.

### **THERAPEUTIC ADVANTAGES**

Rhythmic breathing brings health to body and mind. It allows more oxygen into the body and eliminates anxiety by acting on the sympathetic nerve and the thalamus.

Alternate breathing helps to stabilize the mind and increases the mental faculties. It calms and purifies the nerves and helps to cure certain types of head ache.

Surya Bhedana brings the body temperature into equilibrium and controls the function of the catabolism. The powers of digestion are increased and the nervous system is fortified. The sinuses are also cleared.

### **YOGA**

Yoga is regarded a science as well as a method that allows man to live a harmonious life while favouring his spiritual progress through the control of mind and body.

The Asanas are useful not only to revive the body, strengthen the Nervous system and regenerate the glands, but also to cure physical and mental illness. They bring the human body under complete control of the mind.

Regarding *Neer Peenisam*, the following asanas can be advised to the patients.

1. Sarvangasana
2. Viparithakarani
3. Yoga mudra
4. Halasana
5. Usartasana
6. Vajjurasana
7. Maha muthra.

## **MODERN ASPECT**

### **PARA NASAL SINUSES**

The para nasal sinuses are air containing bony spaces around the nasal cavity and lined by the mucous membrane of ciliated columnar epithelium. They develop as mucous diverticula of the nasal cavity and invade the neighbouring bones at the expense of the diploic tissue. The sinuses are arranged in pairs and are named as follows,

- ❖ Frontal
- ❖ Ethmoidal
- ❖ Sphenoidal
- ❖ Maxillary.

They are divided into two groups. Anterior group comprises frontal air sinus, the maxillary air sinus and the anterior ethmoidal air cells.

The posterior group comprises the posterior ethmoidal air cells and the sphenoidal sinus.

The anterior group of sinuses drains into the middle meatus and the posterior group drains into the superior meatus and the sphenoidal recess. The sinuses are present in rudimentary form at birth, except the frontal sinuses which start development two (or) three years after birth. They enlarge rapidly during the ages of 7-8 yrs. (time of eruption of permanent teeth) and then after puberty.

### **FRONTAL SINUSES**

They are two in number and are contained within the tables of the squamous part of the frontal bone, deep to the medial end supraciliary arches. It extends upwards above the medial end of eye brow and backwards

into the medial part of the root of the orbit. Each sinus is triangular in shape. Depth - 2.5cm, Height - 3cm, Breadth - 2.5cm. Absent at birth, fairly developed at 7th to 8th year reach full size only after puberty Capacity: Each sinus has a capacity of about 7cc.

### **COMMUNICATIONS**

It opens into the middle meatus of Nose at the anterior end of the hiatus semilunari's either through the infundibulum (or) through the fronto nasal duct. The right and left sinuses are usually unequal in size separated by a thin plate of bone. The sinuses are better developed in males than in females. The frontal sinus is lined with columnar epithelium.

### **MAXILLARY SINUSES**

It lies in the body of maxilla and is the largest of all the para nasal sinuses. It is pyramidal in shape with its a base directed medially towards the lateral wall of the nose and the apex directed laterally in the Zygomatic process of maxilla. Average measurements of each sinus are as follows, Vertical (opposite 1st molar teeth) - 3.75cm, Transverse - 2.5cm, Antero - Posterior - 3.25cm, Capacity - About 9.5 to 20cc.

The fully developed maxillary air sinus should extend from the first premolar to the third molar teeth. The sinus reaches upto the floor of the orbit and thus occupies practically the whole body of the maxillary bone.

### **COMMUNICATIONS**

It opens into the middle meatus of the nose in the lower part of the hiatus semilunaris and the opening lies just below the bulla ethmoidalis. The openings are near the roof that the floor of the sinus. So the opening is located much higher from the floor of the sinus in disadvantageous position for natural drainage. The maxillary air sinus is lined by ciliated columnar epithelium. It is richly provided with glands which are situated chiefly around the ostium.



## **ETHMOIDAL SINUSES**

There are numerous small inter communicating spaces which lie within the labyrinth of the ethmoidal bone. They are completed by the frontal, Maxillary, lacrimal, Sphenoidal and palatine bones. They lie between the upper part of the nasal cavity and the orbits and are separated from the orbits by extremely thin orbital plates of ethmoids. The sinuses are divided into anterior, middle and posterior groups.

## **SPHENOIDAL SINUSES**

These paired sinuses are located within the body of sphenoid bone above and behind the nasal cavity. Each sinus is somewhat asymmetrical and presents the following average measurements. Vertical-2.2cm, Transverse-2cm, Depth -2.2cm.

## **COMMUNICATIONS**

Each sinus opens into the sphenoidal recess and hence into the superior meatus of nose.

## **EXAMINATION OF THE PARANASAL SINUSES**

### **1) Inspection**

One should look for swelling and signs of inflammation over the sinuses caused by the infection, osteomyelitis and tumours. With Carcinoma of maxilla one may come across anaesthesia of infra-orbital nerve.

### **2) Palpation**

The tenderness for the paranasal sinuses is elicited at the most superficial portion of the sinuses.

### **Maxillary sinus**

The tenderness is elicited on the canine fossa on the cheek.

## **Frontal Sinuses**

The tenderness is tested by pressing the floor of the frontal sinus in the medial portion, just above the inner canthus of the eye. One should not palpate the anterior wall of the sinus for tenderness as there are 2 layers of bones in the superciliary arch.

## **Anterior ethmoidal sinuses**

The tenderness is tested on the sides of the nose, midway between the inner canthus of the eye and the nasion. Middle and posterior ethmoidal sinuses and the sphenoidal sinuses are deep situated and hence they cannot be palpated. It is advantageous to carry out the palpation of the sinuses on both sides simultaneously, as their tenderness can be compared.

## **Posture test**

Difference between maxillary and frontal sinusitis. The patient is examined in the sitting position and the discharge in the nose is wiped out. If the discharge reappears in the middle meatus, it signifies that the discharge is from the vertically draining frontal sinus. If discharge does not appear, the patient is made to lie down on his unaffected side with the affected side of the nose at a higher level. If the discharge re-appears, it is from the maxillary sinus.

## **Transillumination test**

Transillumination test is performed in a dark room. A lighted bulb is placed in the oral cavity and if the sinus is translucent, infra-orbital crescent appears as a glow below the orbit, and retinal illumination also occurs. In sinusitis, the sinus becomes opaque. One should not mistake for the brilliant transillumination seen through the cheek. This test is rarely being performed, as it is clumsy and unreliable.

# SINUSITIS

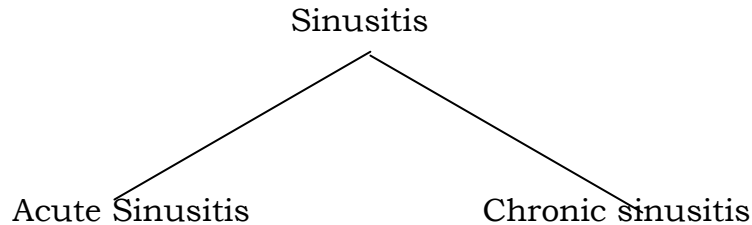
## DEFINITION

Sinusitis is an inflammation of the mucosal lining of sinus cavity. Inflammation may be suppurative or non suppurative.

Age: It usually occurs after the age of 15 years, but it may affect even children aged 5 years.

Sex: It affects both sexes equally.

## CLASSIFICATION



## ACUTE SINSUSITIS

## DEFINITION

It is an acute inflammation of the mucosa of paranasal sinuses. If inflammatory process occurs in more than one sinus, it is called multi sinusitis. If all para nasal sinuses are involved it is called Pan Sinusitis.

## AETIOLOGY OF SINUSITIS

### 1. DENTAL SEPSIS

Eg. Periapical abscess, peridental abscess etc. (or) dental extraction particularly in connection with maxillary sinus, where roots of teeth project into the sinus.

### 2. TRAUMATIC

In fracture of sinus, infection may spread directly.

### 3. SWIMMING AND DIVING

Directly spread through the ostium.

### 4. INFECTIONS

#### a. Bacterial infection

- Streptococci
- Staphylococci
- Pneumococci
- Hemophilus influenzae
- Escherichia coli
- Micrococcus Catarrhalis.
- Bacillus pteiffer and B.

#### b. Viral infection

- Rhinovirus
- Para influenza I and II
- Echo 28
- Coxsacki A 21
- Respiratory Syncytial Virus.

#### c. Fungal infections

- Para coccidiomycosis
- Mucormycosis
- Rhinosporidiosis
- Rhinophycomycosis
- Aspergillosis
- Actinomycosis.

### 6. PREDISPOSING FACTORS

#### a. Local

- Foreign body
- Nasal Allergy

Enlarged adenoids  
Deviation of nasal septum etc.

b. General

Low general health  
Chilling  
Environmental pollution  
Prolonged Exposure to cold  
Associated chest infection

### **PATHOLOGY OF SINUSITIS**

The mucosa of sinus shows chronic inflammatory changes. The cilia get damaged by the infection with resultant inadequate drainage of the sinus cavity, particularly the maxillary sinus where the ostium is situated high up in the medial wall. The retained secretions thereby lead to reinfection. Periphlebitis and perilymphangitis may occur, leading to oedema and polyp formation, so called hypertrophic (or) Polypoidal sinusitis.

Sometimes there occurs metaplasia of the ciliated columnar epithelium to stratified squamous type with interspread papillary hyperplastic epithelial and inflammatory cells producing a picture of papillary hypertrophic sinusitis. Occasionally the chronic inflammatory process may induce atrophic changes in the sinus mucosa with increase in sub mucosal fibrous tissue. (Atrophic Sinusitis).

### **CLINICAL FEATURES**

1. Patient usually gives history of cold. After 3 to 4 days when symptoms should have diminished, there is exacerbation of symptoms.
2. Nasal obstruction becomes worse, watery rhinorrhoea is changed to thick muco-purulent secretion. Occasionally there may be epistaxis or blood stained nasal discharge.

3. Head ache and sense of heaviness present over the head.
4. Pain over infected sinus-stabbing (or) aching in character. This is made worse by bending (or) coughing.
5. Rise temperature, malaise and depression.
6. Unpleasant taste with post-nasal discharge is often present.
7. Tenderness over the frontal or the maxillary sinus and overlying soft tissue may be oedematous at times.

## **INFECTION OF INDIVIDUAL SINUSES**

### **FRONTAL SINUSITIS**

Inflammation of the mucous membrane of frontal sinus.

Etiological factors :

- 1) Allergens
- 2) Deviated nasal septum
- 3) Facial trauma
- 4) Nasal polyps
- 5) Extension of odontogenic infections
- 6) Rhino cerebral mucomycosis
- 7) Nosocomial sinusitis - prolonged nasotracheal or nasogastric intubation associated.

The most common organisms involved include.

- 1) Haemophilus influenzae
- 2) Streptococcus pneumonia
- 3) Streptococcus pyogens
- 4) Alpha haemolytic streptococci

## **CLINICAL FEATURES**

### 1) Frontal Headache

The earliest sign of the frontal sinus inflammatory change is known as a vacuum frontal headache due to a blockage of the frontonasal duct and absorption of air. Frontal sinus headache is severe in the morning, when the discharge accumulates in the sinuses in the night due to the recumbent posture. As the patient remains upright during the day the head ache reduces.

2) Facial Pain: Typically, pain in the eye, over bridge of the nose and frontal region..

3) Oedema : In some cases there may be oedema and puffiness of upper lid.

### 4) Nasal obstruction

It may be the result of underlying obstructive pathology of the nose like deviated septum, polyposis or hypertrophied turbinates or because of chronic turgescence of the nasal mucosa.

### 5) Sore throat

Inflammation of airways due to inflammatory mediators like bradykinin cause smooth muscle contraction, resulting in throat pain and hoarseness of voice.

## **ETHMOIDAL SINUSITIS**

1. Head ache: It is usually located between and behind the eye regions (or) radiates to the temporal eye.

2. Nasal obstruction is frequent with loss of sense of smell.

3. There may be oedema over the nasal bones.

4. The middle turbinate shows oedematous inflamed mucous membrane.

## **SPHENOIDAL SINUSITIS**

1. Headach Usually located in the occipital area of the head. The pain may be referred from the occipital region of the mastoid area.
2. The purulent post nasal discharge is a prominent feature of acute sphenoiditis. Vertigo may be present.

## **MAXILLARY SINUSITIS**

It is the commonest of all sinus infection. Infection is usually from the nose or dental sepsis of upper jaw. The roots of the molar teeth lie close to the floor of the maxillary antrum.

## **CLINICAL FEATURES**

- 1) Pain and tenderness over the cheek area the pain may radiate to the upper teeth and temporal region.
- 2) Purulent nasal discharge and purulent post nasal drip.
- 3) Fever, oedematous and inflamed turbinate tissue
- 4) Headache is often severe.

## **INVESTIGATIONS FOR ACUTE SINUSITIS**

### **1. Radiology of Para nasal Sinus**

It is the most sensitive and specific test. Show haziness of the affected sinus or all sinus. In cases of empyema fluid can be seen in the maxillary sinus.

### **2. C.T.SCAN**

When indicated is ,even more sensitive in dedecting sinusitis.



### 3. Transillumination Test

It is helpful in maxillary and frontal sinusitis.

### 4. Anterior Rhinoscopy

The nasal mucosa is congested and there may be trickle of pus under the middle turbinate and in the post-nasal space.

### 5. Nasal swab culture.

### 6. Serum immunoglobins - IgG., IgA, IgM, Sub.classes.

### 7. Antibody titres

### 8. Delayed hypersensitivity tests.

9. Direct sinus aspiration is the only procedure that can provide accurate information concerning aetiology.

## **COMPLICATIONS OF SINUSITIS**

The para nasal sinuses are situated close to the eyes, brain and nose, and the infection can easily spread from sinuses to orbit and intra cranial cavity giving rise to serious complications.

### Nasal complications

1. Chronic rhinitis
2. Secondary atrophic rhinitis
3. Chronic hypertrophic rhinitis
4. Nasal polyposis.

### Orbital complications:

1. Orbital cellulitis
2. Orbital abscess
3. Retrobulbar neuritis
4. Superior orbital fissure syndrome
5. Orbital apex syndrome.

Pharyngeal and Laryngeal complications:

1. Granular and Lateral wall pharyngitis
2. Pharyngo Laryngitis and tonsillitis.

Ear Complications

1. Eustachian catarrh and Middle ear effusion
2. Chronic suppurative otitis media.

Intra ear complications:

1. Meningitis
2. Encephalitis
3. Extra dural abscess
4. Sub.dural abscess.
5. Frontal abscess of brain
6. Cavernous sinus thrombosis.

Bony complications:

Osteomyelitis of facial bones.

Miscellaneous:

Mucoceles , Pyoceles, Oro antral fistule

## **CHRONIC SINUSITIS:**

### **Definition**

This is chronic inflammatory process affecting mucosa of various groups of para nasal sinuses. The recurrent attacks of acute sinusitis lead to chronic sinusitis.

### **Aetiology**

1. Nasal obstruction leads to chronic sinus infection (eg),
  - a) Deviated nasal septum

b) Oedematous turbinates

c) Polyps

2. Recurrent attacks of acute sinusitis and upper and lower respiratory infection.
3. Chronic dental sepsis and associated with lower respiratory infection.
4. Atmospheric pollution  
  
Damp environment and Poor nutrition also leads to chronic sinusitis
5. Inadequate aeration of the sinuses due to allergy and narrowing of the sinus ostium from infection.

### **CLINICAL FEATURES**

1. Nasal obstruction due to oedema of the turbinates and thick mucous tenacious secretions.
2. Sinus infection may set up a chronic rhinitis with nasal obstruction resulting from hyper trophy of the nasal mucosa and turbinates
3. Pain is not a typical feature, but dullache may be present over the sinus concerned.
4. Head ache may be present certain periodicity increasing after rising in the morning, but gradually decreasing as the day goes on or vice verse.
5. Excess nasal discharge secretions usually frank Mucosa and pus are discharged.
6. Epistaxis results from the inflammatory vasodilation in the nose.
7. Disturbance of olfaction

Abnormalities of smell are common in chronic sinusitis. Some times patient complains of foul smell (or) poor sense of smell and taste. There may

be carcosmia (Unpleasant smell) (or) hyposmia and parosmia in patients with under lying allergic rhinitis.

8. General symptoms include low grade fever, lassitude, mental apathy and depression may be present.

9. Inflammation and swelling of the Eustachian orifice. Occasionally this may turn into acute otitis media.

10. Pharyngitis may be main symptom and tonsils may become infected.

## **INFECTION OF INDIVIDUAL SINUSES IN CHRONIC CONDITION**

### **Chronic frontal sinusitis**

Chronic infection of the frontal sinus is similar to the acute infection, but the pain and tenderness are less severe.

In recurrent cases, treatment of the obstruction to the drainage of the sinuses by performing submucous resection of the nasal septum or polypectomy is helpful.

### **Chronic Ethmoidal and sphenoidal sinusitis**

Ethmoidal and sphenoidal sinusitis is not common. Ethmoidal sinusitis may cause pain in the eyes or behind the eyes. Sphenoidal sinusitis may produce occipital or central headache. These may result in orbital and infracranial complications.

### **Chronic Maxillary sinusitis**

Chronic infection of the maxillary sinus is similar to acute infection, but the pain and tenderness are mild or absent.

Hawking and dry cough may be present due to post nasal discharge.

Hyposmia or cacosmia may occur occasionally.

## **INVESTIGATIONS FOR CHRONIC SINUSITIS:**

### **1. RADIOLOGICAL EXAMINATION:**

- a. Mucosal thickening of the lining mucosa.
- b. Opacity (or) Uniform haziness of the maxillary sinus.
- c. Polypoid hypertrophy of lining mucosa
- d. Osteitis (or) Osteosclerosis.

### **2. RHINOSCOPY**

It will reveal dull colour of nasal mucosa. Trickle of pus is seen under the middle meatus, if the anterior group of sinuses is involved. The anterior end of the middle turbinate may be oedematous and turgescient. Will show pus in the middle meatus in maxillary sinusitis and in the sphenoidal recess in sphenoidal sinusitis.

### **3. TRANSILLUMINATION TEST: Is seldom practised now-a-days.**

4. NASAL SWAB: Shows increased eosinophil count in allergy variety, bacteriology shows Streptococcus commonly and also pneumococci.

### **5. SINOSCOPY**

Fibre-optic sinuscope is introduced in maxillary cavity through antrostomy and detailed pathology seen.

### **6. CT-SCAN: COMPUTED TOMOGRAPHY**

Computed Tomography is much more sensitive than other routine radiography, particularly for ethmoid and sphenoid disease.

### **7. MRI: MAGNETIC RESONANCE IMAGE:**

It is very useful diagnostic method, to rule out a drainable orbital abscess in the sinuses.

# **TREATMENT**

## **ACUTE SINUSITIS:**

The treatment can be discussed in three headings. They are Prophylactic treatment, Medical treatment and Surgical treatment.

### **A.PROPHYLACTIC TREATMENT**

1. Prevention of colds by general treatment.

- a. Good Ventilation.
- b. Proper humidity.
- c. Inherent resistance produced by a healthy life and good mixed diet with sufficient vitamins A, C and D.
- d. Flying and swimming with a cold should be avoided.

2. Vaccines:

They are injected sub-cutaneously or intra dermally, taken orally or applied locally to the nasal mucous membrane. There has been decrease in interest over the last decade regarding the use of vaccines.

### **B. MEDICAL TREATMENT:**

1. To control infection by anti biotics.
2. To encourage opening up of the sinus ostium.
3. Symptomatic relief and general treatment.

### **OPENING UP OF SINUS OSTIUM**

- a) Nasal congestion. Helps in drainage of sinuses.
- b) Steam inhalation.
- c) Anti histamine administration is helpful.

## **SYMPTOMATIC RELIEF AND GENERAL TREATMENT:**

- a) Rest - in bed in a warm, well ventilated room.
- b) Analgesics - helps to relieve the pain.
- c) Local heat - by radiant heat or hot water bottle used for 10 minutes
- d) Diet - Plenty of fluid and nourishing diet. Vitamins are added. Tobacco and alcohol should be avoided as they congest the nasal mucosa.
- e) Mouth care - Should be taken in case of dental sepsis.

## **C. SURGICAL TREATMENT**

Surgical treatment is occasionally needed in acute sinusitis. The sinus is punctured under local anaesthesia and drained out.

## **TREATMENT OF CHRONIC SINUSITIS**

- A. Conservative Treatment.
- B. Surgical Treatment.

### **A. CONSERVATIVE TREATMENT:**

a. Aggravating factors:

Such as dust, alcohol and tobacco should be avoided. Dry climate holiday, if possible is helpful.

- b. Nutritious diet and regular diet habits are helpful.
- c. Dental treatment. If various tooth (or) other sepsis.
- d. Nasal decongestants and anti histamines.

help to reduce oedema and open up sinus ostium. 1% Ephedrine in saline is the ideal decongestant. This helps ciliary activity.

e. Irrigation of the nose: with normal saline often helps.

f. Displacement theory of proetz: with normal saline often helps.

g. Control of infection:

Antibiotics are usually ineffective, but a course of broad-spectrum antibiotic has to be given (according to sensitivity) in acute exacerbations and following sinus drainage.

h. Short wave diathermy. May give temporary relief but otherwise disappointing result.

## **B. SURGICAL TREATMENT:**

1. Eradication of sinus pathology:

In cases where there is collection of pus in sinus cavity.

a) Sinus puncture and lavage:

helps in removal of pus from sinus cavity and the procedure has to be repeated.

b. Radical Surgery:

If above method fails, then sinus wall has to be opened up and thickened polypoidal lining mucosa has to be removed.

2. Removal of nasal obstruction:

a. Correction of septal deviation.

b. Removal of nasal polyps.

c. Diathermy of the inferior turbinate.



## MATERIALS AND METHODS

### AIMS

#### a) Primary aim

To determine the therapeutic efficacy of the Siddha drugs *Singathi Chooranam with Chittarathai Kudineer and Dikkamalli thylam* for the treatment of *Neer Peenism* (Sinusitis)

#### b) Secondary Aim:

To find out the side effect of the trial drugs, if any

### POPULATION AND SAMPLE

The population consists of *Neer Peenism* patients Cough, sneezing, rhinorrhoea, headache, tenderness in the maxillary and frontal region, and change in the sense of smell satisfying the inclusion and exclusion criteria mentioned below. The sample consists of all *Neer Peensism* patients attending the OPD of Ayothidoss Pandithar Hospital of NIS chennai-47.

**SAMPLE SIZE:** The trial size will be 50 patients.

### INCLUSION CRITERIA

- a. Age 20 to 50 Years.
- b. Willing to produce the x-ray report before the start of the trial
- c. Willing to give blood specimen for investigation when required
- d. Willing to be admitted in the hospital for 7 days or willing to attend the OPD once in 2 days for 7 days

### EXCLUSION CRITERIA:

Nasal Polyps, tuberculosis with sinusitis, epistaxis, syphilis of nose, tumors of nose, bronchial asthma, fracture of nose.

### WITHDRAWAL CRITERIA:

Increase in the severity of headache, insomnia, uncontrolled sneezing, development of severe adverse drug reaction

### TRIAL DRUG AND DURATION:

*Singathi chooranam* 500 mg with 30 ml of *chittarathi kudineer* .t.d.s for 7 days. *Dikkamalli thylam* applied on the scalp 30 minutes before bath, on two occasions separated by 3 days

## TESTS AND ASSESSMENTS

### (A) CLINICAL ASSESSMENT

Cough, sneezing, rhinorrhoea, headache, tenderness in the maxillary and frontal region, sense of smell.

### (B) INVESTIGATIONS

1. **Blood Test:** TC, DC, ESR, Hb
2. **X-ray:** PNS
3. **Urine analysis:** Albumin, Sugar, Deposits.

### (C) Assessment & Test in Siddha Aspect

- ❖ Envagai thervugal  
Naadi, Sparisam, Naa, Niram, Mozhi, Vizhi, Malam, Moothiram
- ❖ Neer Kuri (Niram, Edai, Manam, Nurai, Enjal.) Nei Kurai

## CONDUCT

*Neer peenism* patients satisfying the inclusion and exclusion criteria will be admitted to the trial. Informed consent will be obtained from the patients. Lab investigations will be carried out before and at the end of the trial.

The trial drugs will be issued to the OPD patients for 2 days at a time and the patients will be asked to bring back the unconsumed drugs at each visit and return them. Patients are asked to come for clinical assessments once in 2 days or 7 days. At each visit, a new drug container will be issued to the patients.

## FORMS

### (A). FORM I

Selection Proforma – It is used before admission to the trial.

### (B). FORM II

Assessment Proforma - It is used once in 2 days for 7 days.

## ANALYSIS

Reduction in the proportion of patients with signs & symptoms will be tested using paired  $X^2$  – test.

Mean reduction for ESR and Eosinophil count will be tested using paired t-test.

# OBSERVATIONS AND RESULTS

## Table 1

OBSERVATION IN 50 NEER PEENISAM PATIENTS,NIS, CHENNAI-47, 2008

| S.NO | Date       | O.P./I.P.No | Name            | Age/sex | family h/o |
|------|------------|-------------|-----------------|---------|------------|
| 1    | 1/12/2007  | AE5071      | Saritha         | 22/F    | no         |
| 2    | 2/12/2007  | AE5546      | Reghunathan     | 21/M    | yes        |
| 3    | 2/12/2007  | AE5506      | Yamini          | 36/F    | no         |
| 4    | 4-12-2007  | AE6170      | Prem kumar      | 26/M    | no         |
| 5    | 3/12/2007  | AE5821      | Mathan kumar    | 25/M    | no         |
| 6    | 5/12/2007  | AE6374      | Sridhar         | 32/M    | no         |
| 7    | 5/12/2007  | AE6399      | Venkata giri    | 33/M    | yes        |
| 8    | 5/12/2007  | AE6400      | Thiru kumaran   | 24/M    | yes        |
| 9    | 5/12/2007  | AE6460      | Palani          | 26/M    | no         |
| 10   | 5/12/2007  | AE6322      | Susai mani      | 36/M    | no         |
| 11   | 9/12/2007  | AE7395      | Vimal           | 27/M    | no         |
| 12   | 10/12/2007 | AE7536      | Rajeshwaran     | 40/M    | yes        |
| 13   | 10/12/2007 | AE7573      | Ravi            | 42/M    | no         |
| 14   | 10/12/2007 | AE7621      | Malar vizhi     | 46/F    | yes        |
| 15   | 10/12/2007 | AE7661      | krishna moorthi | 32/M    | no         |
| 16   | 10/12/2007 | AE7668      | Arivakkan       | 47/M    | no         |
| 17   | 19/12/2007 | AE9984      | Mari            | 23/M    | yes        |
| 18   | 19/12/2007 | AF.044      | Durai raj       | 26/M    | no         |
| 19   | 23/12/2007 | AF 928      | Selva kumar     | 26/M    | no         |
| 20   | 23/12/2007 | AF.933      | Chandra         | 44/M    | no         |
| 21   | 23/12/2007 | AF.981      | Gopinathan      | 27/M    | yes        |
| 22   | 29/12/2007 | AF1869      | Arumugam        | 29/M    | no         |
| 23   | 29/12/2007 | AF.2275     | Lakshmi         | 28/F    | no         |
| 24   | 31/12/2007 | AG.2397     | Neela           | 28/F    | yes        |
| 25   | 4/2/2008   | AG.3982     | Selva kumar     | 28/M    | no         |
| 26   | 6/2/2008   | AG.4575     | Suresh          | 40/M    | yes        |
| 27   | 6/2/2008   | AG.4504     | Ramu            | 36/M    | yes        |
| 28   | 10/2/2008  | AG7128      | Jamuna          | 40/F    | no         |
| 29   | 15/4/2008  | AI 6952     | Gandhi          | 50/F    | no         |
| 30   | 15/4/2008  | AI7070      | Fathima sree    | 28/F    | yes        |

|    | Date       | O.P/I.P.No | Name             | Age/sex | family h/o |
|----|------------|------------|------------------|---------|------------|
| 31 | 7/3/2008   | AH5013     | Vijaya           | 32/F    | no         |
| 32 | 10/3/2008  | AH5779     | Shanthi          | 22/F    | no         |
| 33 | 10/3/2008  | AH5755     | Padmavathy       | 26/F    | yes        |
| 34 | 11/3/2008  | AH6176     | Kamaraj          | 33/M    | no         |
| 35 | 11/3/2008  | AH6220     | Karthirasan      | 48/M    | yes        |
| 36 | 12/3/2008  | AH6460     | Selvaraj         | 37/M    | yes        |
| 37 | 12/3/2008  | AH6439     | Jayanthi         | 42/F    | yes        |
| 38 | 12/3/2008  | AH6500     | Sugumari         | 40/M    | no         |
| 39 | 12/3/2008  | AH6479     | karthi keyan     | 26/M    | no         |
| 40 | 18/3/2008  | AH8011     | Moorthy          | 43/M    | no         |
| 41 | 11/10/2007 | 157        | Banu             | 27/F    | yes        |
| 42 | 5/12/2007  | 549        | mangaiyar karasi | 42/f    | yes        |
| 43 | 4/2/2008   | 734        | Kasthuri         | 35/F    | yes        |
| 44 | 7/2/2008   | 742        | Kaveri           | 34/F    | yes        |
| 45 | 12/2/2008  | 747        | Thangamani       | 30/F    | yes        |
| 46 | 21/03/2008 | 810        | Asandhamani      | 30/F    | yes        |
| 47 | 23/03/2008 | 820        | Gajitha          | 22/F    | yes        |
| 48 | 16/04/2008 | 847        | Ghandi           | 50/F    | yes        |
| 49 | 19/03/2008 | 1193       | Satish kumar     | 29/M    | yes        |
| 50 | 29/03/2008 | 1217       | Murugesan        | 43/M    | yes        |

**Table No 2**  
**Age – Sex Distribution**

| S.No  | Age(yr) | Sex  |        | Total | %   |
|-------|---------|------|--------|-------|-----|
|       |         | Male | Female |       |     |
| 1     | 21-30   | 14   | 10     | 24    | 48  |
| 2     | 31-40   | 10   | 5      | 15    | 30  |
| 3     | 41-50   | 6    | 5      | 11    | 22  |
| Total |         | 30   | 20     | 50    | 100 |

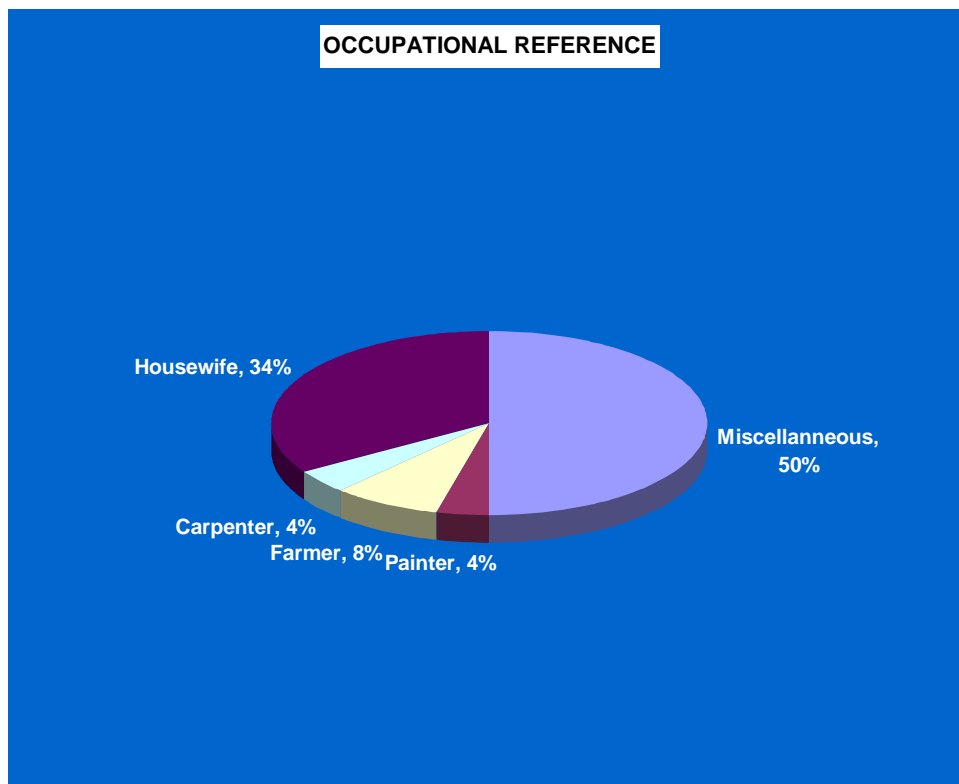
According to age wise distribution 48% were in 20 – 30 years, 30% were in 30-40 years, 22% were in 40-50 years. According to sex wise distribution 40% were in female, 60% were in males.

## OCCUPATIONAL REFERENCE

TABLE 3

| Sl No | Occupational reference | Cases | Cases |
|-------|------------------------|-------|-------|
|       |                        | No    | %     |
| 1.    | House wife             | 17    | 34    |
| 2.    | Carpenter              | 2     | 4     |
| 3.    | Farmer                 | 4     | 8     |
| 4.    | Painter                | 2     | 4     |
| 5.    | Miscellaneous          | 25    | 50    |
| Total |                        | 50    | 100   |

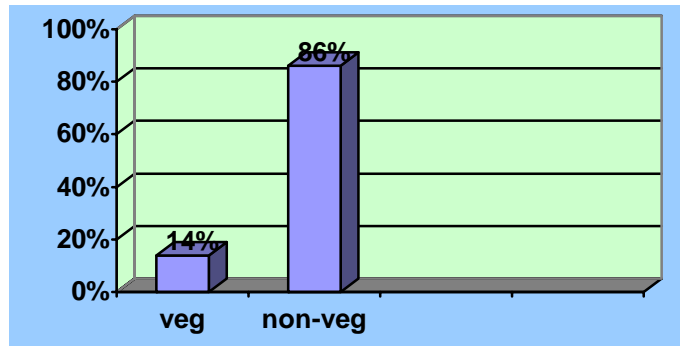
PIE DIAGRAM 1



**Table-4 DIET HABITS**

| Sl No | Food Habits    | Cases |     |
|-------|----------------|-------|-----|
|       |                | No    | (%) |
| 1.    | vegetarian     | 7     | 14  |
| 2.    | Non Vegetarian | 43    | 86  |
| Total |                | 50    | 100 |

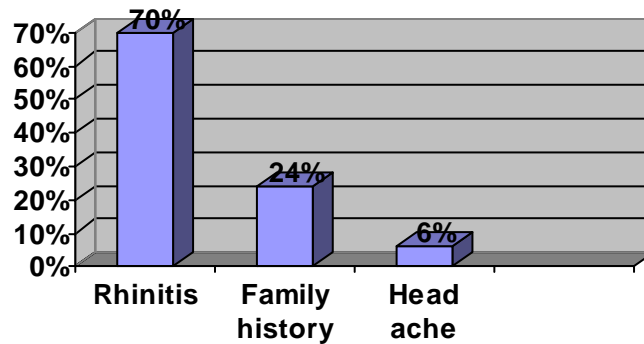
**Food habits- Bar diagram 1**



**TABLE 5 - PAST HISTORY /FAMILY HISTORY**

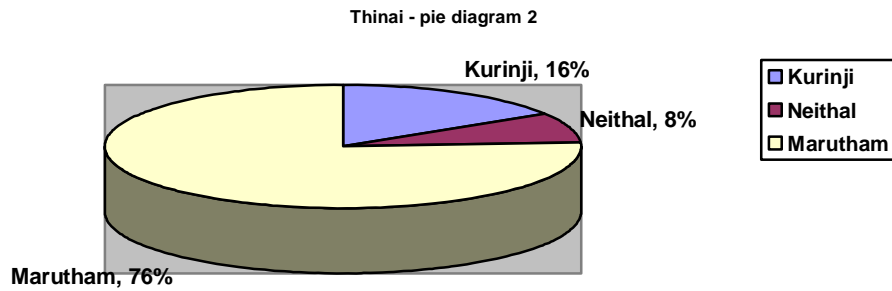
| Sl No | Past history /Family history | Cases |     |
|-------|------------------------------|-------|-----|
|       |                              | No    | (%) |
| 1.    | Allergic rhinitis            | 35    | 70  |
| 2.    | Family history               | 12    | 24  |
| 3.    | Headache                     | 3     | 6   |
| Total |                              | 50    | 100 |

**PAST HISTORY & FAMILY HISTORY  
Bar diagram 2**



**Table 6 - DISTRIBUTION OF THINAI**

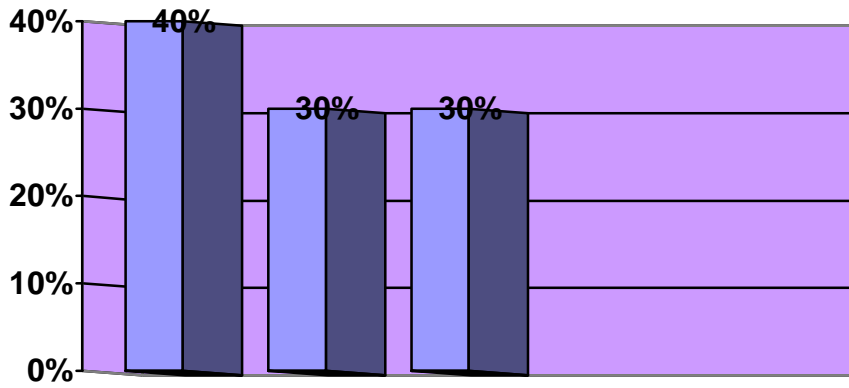
| Sl No | Thinai   | Cases |     |
|-------|----------|-------|-----|
|       |          | no    | %   |
| 1.    | Kurinchi | 4     | 8   |
| 2.    | Mullai   | 0     | 0   |
| 3.    | Marutham | 8     | 16  |
| 4.    | Neithal  | 38    | 76  |
| 5.    | Paalai   | 0     | 0   |
| Total |          | 50    | 100 |



**TABLE 7 – PARUVAKAALAM**

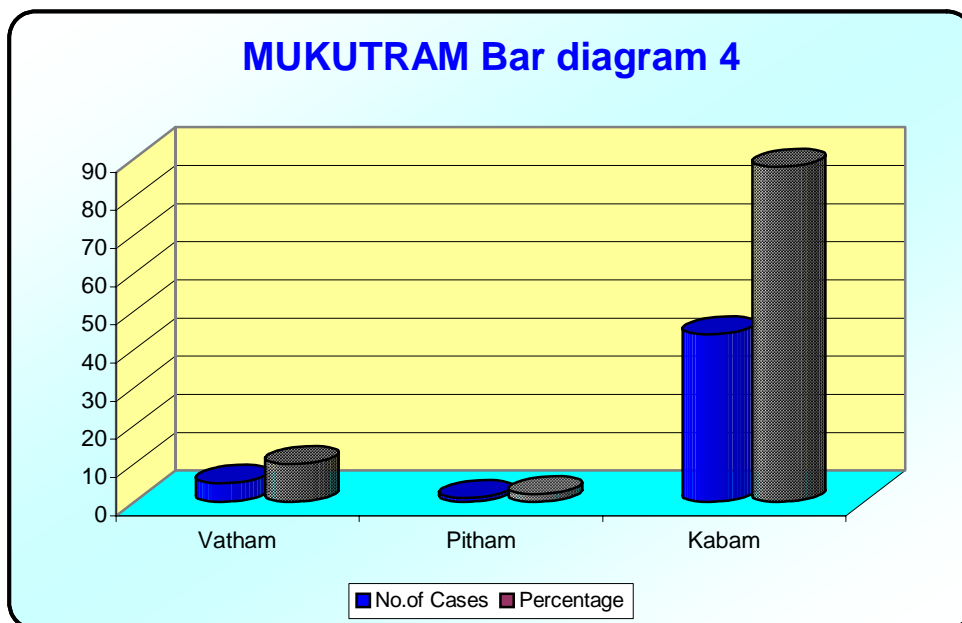
| Sl No | Paruvakaalam     | Cases |     |
|-------|------------------|-------|-----|
|       |                  | No    | %   |
| 1.    | Karkaalam        | 0     | 0   |
| 2.    | Koothirkaalam    | 20    | 40  |
| 3.    | Munpanikaalam    | 15    | 30  |
| 4.    | pinpani kaalam   | 15    | 30  |
| 5.    | Elavener kaalam  | 0     | 0   |
| 6.    | Muthuvenerkaalam | 0     |     |
| Total |                  | 50    | 100 |

**Paruvakaalam  
Bar diagram - 3**



**Table 8 – MUKUTRAM**

| Sl No | Mukutram | Cases |     |
|-------|----------|-------|-----|
|       |          | No    | %   |
| 1.    | Vatham   | 5     | 10  |
| 2.    | Pitham   | 1     | 2   |
| 3.    | Kabam    | 44    | 88  |
|       | Total    | 50    | 100 |

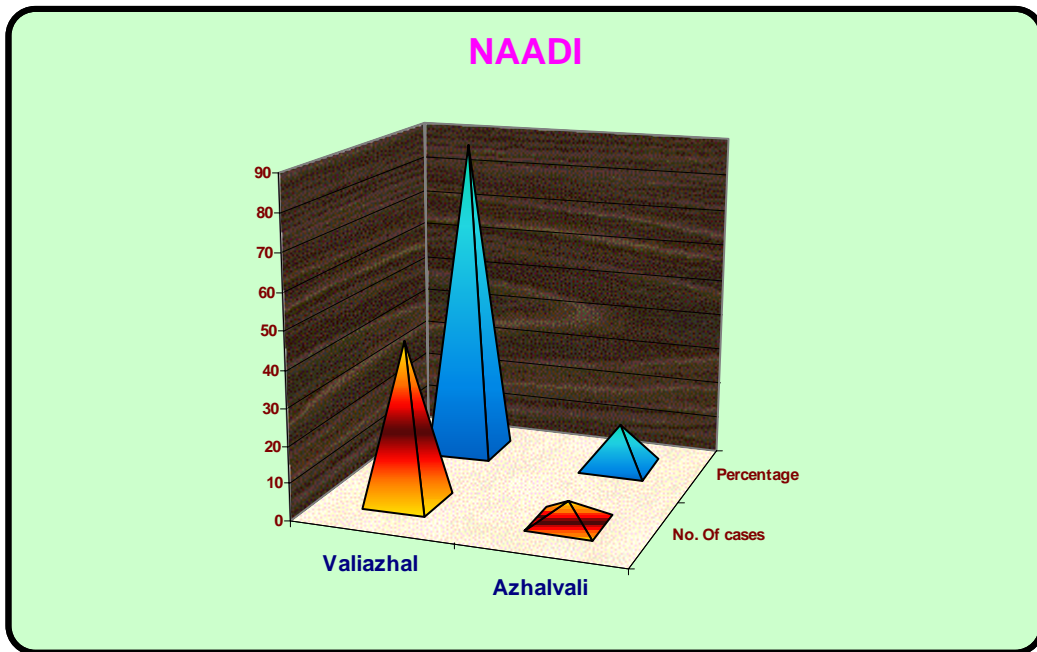




**TABLE-9 NAADI**

| S.NO | Naadi     | Cases |     |
|------|-----------|-------|-----|
|      |           | NO    | %   |
| 1.   | Valiazhal | 44    | 88  |
| 2.   | Azhalvali | 6     | 12  |
|      | Total     | 50    | 100 |

**BAR DIAGRAM-5**



**Table-10**

**RESULTS OF SUBJECTIVE PARAMETERS BEFORE AND AFTER  
TREATMENT OF 50 NEER PEENISAM PATIENTS, NIS, CHENNAI-47**

| S.No | Sneezing |     | Rhinitis |     | Nasal congestion |     | Head ache |     | Tenderness present in paranasal sinuses |     | cough |     |
|------|----------|-----|----------|-----|------------------|-----|-----------|-----|---|-----|-------|-----|
|      | B        | A   | B        | A   | B                | A   | B         | A   | B                                       | A   | B     | A   |
| 1    | yes      | no  | no       | no  | yes              | no  | yes       | no  | yes                                     | no  | yes   | no  |
| 2    | yes      | no  | yes      | no  | yes              | yes | yes       | yes | yes                                     | yes | yes   | no  |
| 3    | yes      | no  | yes      | no  | yes              | yes | yes       | yes | no                                      | no  | yes   | yes |
| 4    | yes      | no  | yes      | no  | yes              | no  | yes       | no  | yes                                     | no  | no    | no  |
| 5    | yes      | yes | yes      | yes | yes              | yes | no        | no  | yes                                     | no  | no    | no  |
| 6    | yes      | yes | yes      | no  | yes              | yes | yes       | yes | yes                                     | yes | yes   | yes |
| 7    | yes      | no  | yes      | yes | yes              | no  | yes       | no  | no                                      | no  | yes   | no  |
| 8    | yes      | yes | yes      | no  | yes              | no  | yes       | yes | yes                                     | no  | no    | no  |
| 9    | yes      | no  | no       | no  | yes              | yes | yes       | yes | yes                                     | no  | no    | no  |
| 10   | yes      | no  | no       | no  | yes              | no  | yes       | yes | yes                                     | yes | yes   | no  |
| 11   | yes      | no  | yes      | no  | yes              | no  | yes       | no  | yes                                     | no  | yes   | yes |
| 12   | yes      | yes | no       | no  | yes              | yes | yes       | yes | no                                      | no  | yes   | no  |
| 13   | yes      | no  | yes      | no  | yes              | yes | yes       | yes | yes                                     | yes | yes   | no  |
| 14   | yes      | no  | yes      | no  | yes              | yes | yes       | no  | no                                      | no  | yes   | no  |
| 15   | yes      | no  | yes      | yes | yes              | yes | yes       | no  | yes                                     | no  | no    | no  |
| 16   | yes      | yes | yes      | no  | yes              | yes | yes       | yes | yes                                     | no  | no    | no  |
| 17   | yes      | yes | no       | no  | yes              | yes | yes       | yes | yes                                     | no  | no    | no  |
| 18   | yes      | no  | no       | no  | yes              | no  | yes       | yes | yes                                     | no  | yes   | no  |
| 19   | yes      | no  | yes      | yes | yes              | yes | yes       | no  | yes                                     | yes | yes   | yes |
| 20   | yes      | no  | no       | no  | yes              | no  | yes       | no  | yes                                     | no  | no    | no  |
| 21   | yes      | yes | yes      | yes | yes              | yes | yes       | yes | no                                      | no  | no    | no  |
| 22   | yes      | no  | no       | no  | yes              | no  | yes       | no  | yes                                     | no  | yes   | no  |
| 23   | yes      | no  | no       | no  | yes              | no  | yes       | no  | no                                      | no  | no    | no  |
| 24   | yes      | no  | no       | no  | yes              | no  | yes       | no  | yes                                     | no  | yes   | no  |
| 25   | yes      | no  | no       | no  | yes              | no  | yes       | yes | yes                                     | no  | yes   | no  |

| S.NO | Sneezing |     | Rhinitis |     | Nasal congestion |     | Head ache |     | Tenderness present in para nasal sinuses |     | cough |     |
|------|----------|-----|----------|-----|------------------|-----|-----------|-----|--|-----|-------|-----|
|      | yes      | no  | yes      | no  | yes              | no  | yes       | no  | yes                                      | no  | yes   | no  |
| 26   | yes      | yes | no       | no  | yes              | yes | yes       | yes | yes                                      | no  | yes   | no  |
| 27   | yes      | yes | yes      | yes | yes              | yes | yes       | yes | yes                                      | yes | yes   | no  |
| 28   | yes      | no  | no       | no  | yes              | yes | yes       | no  | yes                                      | no  | yes   | no  |
| 29   | yes      | no  | yes      | no  | yes              | yes | yes       | no  | yes                                      | no  | yes   | no  |
| 30   | yes      | no  | no       | no  | yes              | no  | yes       | yes | yes                                      | no  | yes   | yes |
| 31   | yes      | no  | yes      | no  | yes              | yes | yes       | yes | no                                       | no  | no    | no  |
| 32   | yes      | no  | no       | no  | yes              | no  | yes       | yes | yes                                      | no  | no    | no  |
| 33   | yes      | no  | yes      | no  | yes              | no  | yes       | yes | yes                                      | no  | yes   | no  |
| 34   | yes      | yes | no       | no  | yes              | yes | yes       | yes | yes                                      | no  | yes   | no  |
| 35   | yes      | no  | yes      | no  | yes              | no  | yes       | yes | yes                                      | yes | no    | no  |
| 36   | yes      | no  | yes      | yes | yes              | no  | yes       | no  | yes                                      | no  | yes   | yes |
| 37   | yes      | no  | yes      | no  | yes              | no  | yes       | no  | yes                                      | no  | yes   | yes |
| 38   | yes      | no  | yes      | yes | yes              | yes | yes       | yes | yes                                      | no  | yes   | no  |
| 39   | yes      | no  | no       | no  | yes              | no  | yes       | no  | no                                       | no  | no    | no  |
| 40   | yes      | yes | yes      | yes | yes              | no  | yes       | no  | yes                                      | no  | yes   | no  |
| 41   | yes      | no  | yes      | no  | yes              | no  | yes       | no  | no                                       | no  | yes   | no  |
| 42   | yes      | yes | yes      | no  | yes              | yes | yes       | no  | yes                                      | no  | no    | no  |
| 43   | yes      | no  | no       | no  | yes              | no  | yes       | no  | yes                                      | yes | no    | no  |
| 44   | yes      | yes | yes      | yes | yes              | yes | yes       | yes | yes                                      | no  | no    | no  |
| 45   | yes      | no  | yes      | yes | yes              | yes | yes       | yes | yes                                      | no  | yes   | no  |
| 46   | yes      | no  | yes      | yes | yes              | yes | yes       | yes | yes                                      | no  | yes   | no  |
| 47   | yes      | no  | yes      | no  | yes              | yes | yes       | yes | no                                       | no  | yes   | no  |
| 48   | yes      | yes | yes      | yes | yes              | yes | yes       | yes | yes                                      | no  | yes   | no  |
| 49   | yes      | yes | no       | no  | yes              | no  | yes       | no  | yes                                      | no  | yes   | no  |
| 50   | yes      | yes | yes      | no  | yes              | yes | yes       | yes | yes                                      | no  | no    | no  |

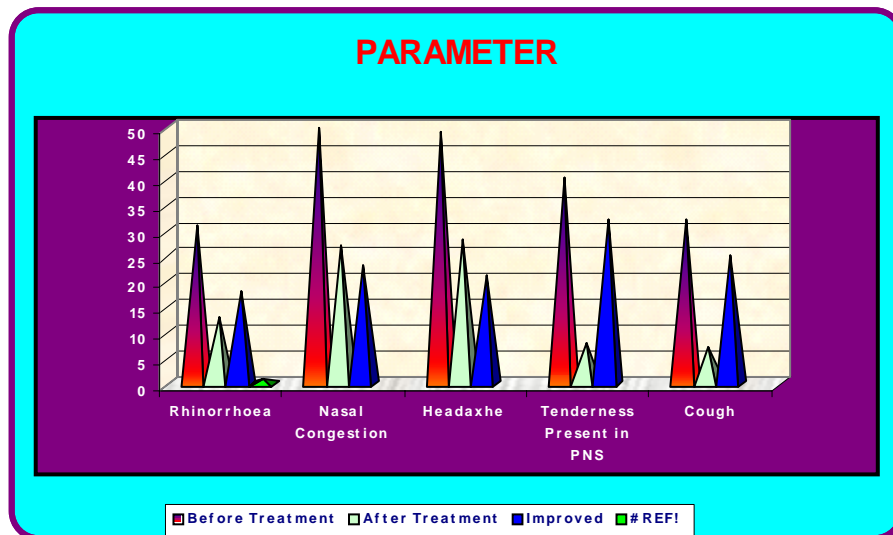
Note: B - Before treatment

A - After treatment

### IMPROVEMENT OF SIGNS AND SYMPTOMS

| S.NO | Parameter                 | BT | AT | Improved |    |
|------|---------------------------|----|----|----------|----|
|      |                           |    |    | No       | %  |
| 1.   | Sneezing                  | 50 | 16 | 34       | 68 |
| 2.   | Rhinorrhoea               | 31 | 13 | 18       | 58 |
| 3.   | Nasal congestion          | 50 | 27 | 23       | 46 |
| 4.   | Headache                  | 49 | 28 | 21       | 42 |
| 5.   | Tenderness Present in PNS | 40 | 8  | 32       | 80 |
| 6.   | Cough                     | 32 | 7  | 25       | 78 |

**BAR DIAGRAM -6**



Improvement of signs & symptoms:

1.Sneezing: Out of 50 cases clinical symptoms of sneezing before the treatment, 34(68%) patient relived from sneezing which is statistically significant.

2.Rhinorrhoea: Out of 31 cases clinical symptoms of Rhinorrhoea before the treatment, 18(58%) patient relived from Rhinorrhoea which is statistically significant.

3.Nasal congestion: Out of 50 cases with clinical symptoms of Nasal congestion before the treatment, 23(46%) patient relived from Nasal congestion which is statistically significant.

4.Headache: Out of 49 cases with clinical symptoms of headache before the treatment, 21(42%) patient relived from sneezing which is statistically significant.

5.Tenderness Present in PNS:

Out of 40 cases clinical symptoms of Tenderness Present in PNS before the treatment, 32(80%) patient relived from Tenderness Present in PNS which is statistically significant.

6.Cough: Out of 32 cases with clinical symptoms of Cough before the treatment, 25(78%) patient relived from Cough which is statistically significant.

**TABLE:12**  
**RESULTS OF OBJECTIVE PARAMENTS BEFORE AND AFTER**  
**TREATMENT OF 50 NEER PEENISAM TREATMENT,NIS,CHENNAI-47**

| SL.NO | Eosinophil count |       | ESR(mm/hr) |       |
|-------|------------------|-------|------------|-------|
|       | Before           | After | Before     | After |
| 1     | 8                | 6     | 12         | 12    |
| 2     | 2                | 3     | 12         | 8     |
| 3     | 2                | 2     | 20         | 12    |
| 4     | 4                | 3     | 20         | 12    |
| 5     | 5                | 4     | 4          | 4     |
| 6     | 2                | 2     | 7          | 4     |
| 7     | 2                | 3     | 8          | 7     |
| 8     | 4                | 4     | 24         | 20    |
| 9     | 6                | 5     | 22         | 22    |
| 10    | 6                | 5     | 8          | 12    |
| 11    | 6                | 5     | 16         | 8     |
| 12    | 8                | 10    | 16         | 6     |
| 13    | 4                | 5     | 8          | 8     |
| 14    | 4                | 2     | 12         | 22    |
| 15    | 2                | 2     | 8          | 10    |
| 16    | 8                | 10    | 8          | 10    |
| 17    | 10               | 10    | 12         | 16    |
| 18    | 2                | 2     | 12         | 16    |
| 19    | 2                | 8     | 4          | 6     |
| 20    | 6                | 6     | 16         | 12    |
| 21    | 4                | 3     | 6          | 5     |
| 22    | 4                | 3     | 24         | 12    |
| 23    | 6                | 4     | 4          | 4     |
| 24    | 8                | 4     | 14         | 8     |

| SL.NO | Eosinphil count(%) |       | ESR(mm/hr) |       |
|-------|--------------------|-------|------------|-------|
|       | Before             | After | Before     | After |
| 25    | 4                  | 3     | 12         | 10    |
| 26    | 4                  | 3     | 14         | 6     |
| 27    | 4                  | 3     | 58         | 24    |
| 28    | 4                  | 4     | 22         | 14    |
| 29    | 4                  | 4     | 28         | 20    |
| 30    | 6                  | 3     | 14         | 8     |
| 31    | 12                 | 6     | 12         | 16    |
| 32    | 8                  | 2     | 28         | 22    |
| 33    | 6                  | 4     | 24         | 18    |
| 34    | 4                  | 4     | 22         | 25    |
| 35    | 6                  | 4     | 12         | 8     |
| 36    | 4                  | 4     | 16         | 12    |
| 37    | 4                  | 4     | 12         | 10    |
| 38    | 6                  | 4     | 8          | 6     |
| 39    | 2                  | 2     | 12         | 6     |
| 40    | 10                 | 6     | 22         | 16    |
| 41    | 10                 | 5     | 18         | 8     |
| 42    | 2                  | 4     | 10         | 14    |
| 43    | 4                  | 3     | 12         | 10    |
| 44    | 4                  | 2     | 12         | 14    |
| 45    | 4                  | 3     | 12         | 8     |
| 46    | 10                 | 6     | 8          | 12    |
| 47    | 8                  | 6     | 20         | 16    |
| 48    | 3                  | 2     | 12         | 8     |
| 49    | 4                  | 4     | 16         | 12    |
| 50    | 2                  | 2     | 12         | 10    |

## Statistical Analysis

Paired 'T' test was employed to determine the significance of treatment.

### ESR:

The average value of ESR before treatment and after treatment were 14.9 + 8.7 and 11.78 + 5.49 respectively. The difference after treatment was statistically significant. ( $P < 0.001$ )

### EOSINOPHILS:

The average value of Eosinophils before treatment and after treatment were 5.08 + 4.16 and 2.57 + 2.03 respectively. The difference after treatment was statistically significant. ( $P < 0.002$ )



## DISCUSSION

The present study brings on record, the work done on “*Neer Peenisam*” by clinical trial of *singathi chooranam* with “*chittrarathai kudineer*” and “*Dikkamalli thylam*” protocol.

The present work was carried out on “*neer peenisam*” representing various views of its aetiology, classification, prodromal signs, signs & symptoms, Noi naadal noi mudal naadal, naadinadai & also Dietary, pranyamam, yogasana, varma and head massage prescriptions.

The “*neer peenisam*” patients are studied with regard to their past history of Ovammai (allergic rhinitis, & family history of sinusitis). This is represented by bar diagram.-2

In the “*neer peenisam*” patients admitted to clinical trail, age & sex distribution presented by table no. 1 & occupational history, distribution of thinai and, incidence in paruvavakaalam, derangement of mukuttram are studied and represented by pie diagram-1,2 and bar diagram 3 and 4 respectively.

The observation on objective parameters like laboratory investigation particularly, Eosinophil count and ESR (mm/hr) are calculated by statistical method and tested for significance. This is presented in table 11 and 12.

The observation on subjective parameters such as sneezing Rhinorrhoea, headache, Tenderness present PNS & are also analysed for statistical significance and presented in table No 9 and 10.

The preliminary biochemical analysis were carried out and presented.

The acute toxicity study of drug “*singathi chooranam*” with “*chittrarathai kudineer*” conducted on rats and recorded.

The trial drug is subjected to study on guinea pig for pharmacological activity – anti histaminic, anti inflammatory & analgesic is recorded.

## SUMMARY

The research on “*Neer Peenisam*” is chosen with an intention to give solace to the patients who are suffering from this disease without any noxious effects. Various literatures having relevant reference to the disease “*Neer Peenisam*” were collected from both siddha system as well as is in modern system of medicine.

The efficacy of the drugs “*singathi chooranam*” “*chittrarathai kudineer*” and “*Dikkamalli thylam*” were studied and observed during research. Fifty patients from both sexes of different age groups were selected and treated in the In & Out patient ward of Maruthuvam Department.NIS,Chennai-47.

The patients were treated for 7 days depending upon the severity of the illness further follow up was done for 2 to 4 months for any recurrence. Available investigation in modern medicines were also considered for diagnosis and the progress of the patient was followed by the Performa was prepared accordingly.

The clinical trial conducted with 50 patients. 33 Patients had good relief 12 Had moderate relief and 15 had mild relief. Research findings reveal about the disease and its impact in the body, statistics taken with the help of details in the case sheet, were dealt in detail in observation and results which gave clear knowledge about the disease.

The potency of the drugs was studied by bio-chemical analysis, pharmacological studies. The drug *singathi chooranam* with *chittrarathai kudineer* possesses Anti -histaminic, Analgesic and anti inflammatory actions. This analysis is ensuring the efficacy of the trial drugs which were proved clinically.

## CONCLUSION

When *singathi chooranam* with *chittrarathai kudineer* was administered to the patient along with *Dikkamalli thylam* for bath, it gives very good result.

Research findings show that 65 % of patients were completely cured and also proved clinically.

The trial drugs were very effective to the patients. Cost of the drug is very cheap and free from side effects. So they are useful for long term purpose.

The drugs along with yoga, pranayama and head massage as supportive therapy showed very good prognosis.

# PREPARATION AND PROPERTIES OF TRIAL DRUGS

## SINGATHI CHOORANAM

### சிங்காதி கூரணம்

Raf: Agasthiyar mani 4000 ennum vaithiya chinthamani -I, (P. No; 171,172)

#### INGREDIENTS:-

1. கற்கடக சிங்கி (Rhus Suceedenea)
2. கண்டங்கத்திரி (Solanum Surattense)
3. கடுக்காய் (Terminalia Chebula)
4. ஆமணக்கு (Ricinus Communis)
5. சடாமாஞ்சில் (Nardostachys Jatamanji)
6. சுக்கு (Zingiber officinale)
7. மிளகு (piper Nigrum)
8. தீப்பிலி (Piper longum)
9. சிறு தேக்கு (Clerodendron Serrutum)
10. தான்றிக்காய் (Terminalia Bellirica)
11. இந்துப்பு (Sodium Chloride Impura)

#### METHODS OF PREPARATION

Above all ingredients were taken into equally and made powder form by rock mortar.

Dosage : 500 mg. three times a day for 7 days

Adjuvant : Chittrarathai kudineer

Medicinal use : sinusities, tuberculosis, asthma, hic-cup, primary complex.

#### 1. கார்க்கடக சிங்கி (RHUS SUCEEDENEA)<sup>35</sup>

Family : Anacardiaceae

Part of Uses : The galls

Taste : Astringent

Potency : Heat

|        |   |
|--------|---|
| Pirivu | : Pungent   |
| Action | : Astringent, Tonic, Nutritive, Digestive, Expectorant, Stimulant, Cholagogue.  |
| Uses   | : Galls are useful in cough, phthisis, asthma, fever, want of appetite, irritability of stomach & conditions of the respiratory tracts. |

## 2. கண்டங்கத்தரி (SOLANUM SURATTENSE)<sup>35</sup>

|              |                                       |
|--------------|---------------------------------------|
| Family       | : Solanaceae                          |
| Part of Uses | : Whole plant                         |
| Taste        | : Pungent                             |
| Potency      | : Heat                                |
| Pirivu       | : Pungent                             |
| Action       | : Expectorant, Diuretic, Carminative. |

Uses : It is used in humoral asthma cough, catarrhal fever, and pain in the chest, also dysuria, stone in the bladder, costiveness in dropsy the sequels of the advanced stage of fever, leprosy, consumptive complaints, general anasarca, low vitality of the general system. Enlargement of the liver and spleen.

## 3. கடுக்காய் (TERMINALIA CHEBULA)<sup>35</sup>

|              |  |
|--------------|--|
| Family       | : Combretaceae   |
| Part of Uses | : Dried fruits   |
| Taste        | : Sweet, Bitter, Pungent, Astringent, sour   |
| Potency      | : Heat   |
| Pirivu       | : Sweat  |
| Action       | : Astringent, purgative, Alterative Tonic, Stomachic.  |
| Uses         | : Chebulic myrobalans are used in fevers, cough, asthma, Urinary disease, piles, worms and rheumatism and scorpion-sting. It contains tannin 45%, large amount of gall acid. |

4. சிறுதேக்கு : (CLERODENDRON SERRATUM ) <sup>35</sup>

- Family : Verbenaceae  
Part of Uses : Leaves, root  
Taste : Astringent, Bitter  
Potency : Heat  
Pirivu : Pungent  
Action : Stimulant, sedative  
Uses : Bengal where its root is used in the form or decoction as a remedy in asthma, bronchitis and other catarrhal affections of lungs. The drug is used in snake bite and fever.

5. ஆமணக்கு (RICINUS COMMUNIS) <sup>35</sup>

- Family : Euphorbiaceae  
Part of Uses : Root  
Taste : Bitter  
Potency : Heat  
Pirivu : Pungent  
Action : Anti-vatha  
Uses : The root of the plant is also useful as an ingredient of various prescriptions for nervous disease and rheumatic affections such as lumbago, pleurodynia, sciatica.

6. சலாமாஞ்சில் (NARDOSTACHYS SATAMANJI) <sup>35</sup>

- Family : Valerianaceae  
Part of Uses : Root  
Taste : Fresh root sweat  
Potency : Heat  
Pirivu : Pungent  
Action : Stimulant , Antispasmodic, Diuretic, Expectorant  
Uses : Root is employed in the treatment of spasmodic hysterical affections, especially palpitation of heart, nervous headache, chorea, flatulence. It is also used in fever, cough, eye disease.

7. கக்கு (ZINGIBER OFFICINALE) <sup>35</sup>

|              |   |
|--------------|---|
| Family       | : Zingiberaceae   |
| Part of Uses | : Rhizome   |
| Taste        | :Pungent  |
| Potency      | :Heat   |
| Pirivu       | : pungent   |
| Action       | : Stimulant, stomachic, Carminative   |
| Uses         | : Ginger is extremely valuable in dyspepsia, Flatulence, Colic, vomiting and the bowels unattended by fever for cold, Cough, asthma, dyspepsia. |

8மிளகு (PIPER NIGRUM) <sup>35</sup>

|             |  |
|-------------|--|
| Family      | : piperaceae   |
| Part of use | : Dried unripe fruit   |
| Taste       | : Bitter,pungent   |
| Potency     | : Heat   |
| Pirivu      | : pungent  |
| Action      | : Acrid,carminative,Antiperiodic,Rubefacient, Stimulant,Resolvent,Antivatha,Anti dote  |
| Uses        | : An infusion of black pepper forms a useful stimulant in relaxed sore throat and hoarseness dependent there on and in toothache. It is used in constipation, piles, colic, gastric disease. |

9. தீப்பிலி (PIPER LONGUM)<sup>35</sup>

|              |  |
|--------------|--|
| Family       | : Piperaceae   |
| Part of Uses | : Fruiting spikes  |
| Taste        | : Freash fruit sweat   |
| Potency      | : Heat   |
| Pirivu       | : Sweat  |
| Action       | : Stimulant, Carminative   |
| Uses         | : Powdered long pepper administered with honey will relieve cough, cold, asthma, hoarse-ness and hiccup. |

10. தூன்றிக்காய் (TERMINALIA BELLIRICA) <sup>35</sup>

|              |  |
|--------------|--|
| Family       | : combretaceae   |
| Part of Uses | : Fruits   |
| Taste        | : Astringent   |
| Potency      | : Heat   |
| Pirivu       | : Sweet  |
| Action       | : Astringent, Expectorant, Laxative, tonic   |
| Uses         | : Fruits are useful in cough, hoarseness, eye disease scorpion sting. Dried ripe fruit is astringent and employed in dropsy. Piles and diarrhoea also occasionally in fever. |

11. இந்துப்பு (SODIUM CHLORIDE IMPURA)<sup>36</sup>

Character: It is found in small white crystalline grains or transparent cubes. It is brownish white externally & white internally. It has a pure saline taste & burns a yellow flame.

|         |  |
|---------|--|
| Taste   | : Salt in taste                                |
| Potency | : Heat   |
| Pirivu  | : Pungent                                      |
| Action  | : Diuretic, laxative, carminative, & stomachic |

Purification :

It is made into powder form mixed with Anna Kaadineer, kept in to the sun lights for three days. Then washed with fresh water and dried with sun light.

Medicinal Uses :

It cures eight types of gunman, kapa pitham, tumour, three thosam, constipation, poison, sukila noi and eczema.

In small dose it is highly carminative, stomachic and digestive. It possesses strong purgative property.



## **CHITTRARATHAI KUDINEER**

(Ref : siddha vaidhya pathartha gunu vilakkam page no.354)

1. சிற்றரத்தை ALPINIA OFFICINALIS
2. சதருப்பை ANETHUM GRAVEOLENS
3. சுக்கு ZINGIBER OFFICINALE
4. மிளகு PIPER NIGRUM
5. தீப்பிலி PIPER LONGUM

Method of preparation

Above all ingredients were taken into equally and made powder form in large size particles by rock mortar.

Dosage : 5 gm three times a day

Duration : 7 days.

Route of administration : Internal

### 1. சிற்றரத்தை ALPINIA OFFICINALIS 35

Family : Zingiberaceae

Part of Uses : Rhizome

Taste : Pungent

Potency : Heat

Pirivu : Pungent

Action : Expectorant, stomachic

Uses : The rhizome are useful in rheumatism and catarrhal affection. Used also in dyspepsia, fevers, incontinence of urine and also advocated in diabetes mellitus and said to diminish the quantity of urine, it is used to destroy bad smell in the mouth and in other part of the body. Used to improve the voice in throat affections.

### 2. சதருப்பை ANETHUM GRAVEOLENS 35

Family : Rutaceae

Part of Uses : Seed  
Taste : Sweet, pungent  
Potency : Heat  
Pirivu : Pungent  
Action : Carminative, Deobsturent diuretic, Emmenagogue,  
Stimulant, Stomachic Anti spasmodic

### 3. சர்க்கு (ZINGIBER OFFICINALE) <sup>35</sup>

Family : Zingiberaceae  
Part of Uses : Rhizome  
Taste :Pungent  
Potency :Heat  
Pirivu : pungent  
Action : Stimulant, stomachic, Carminative  
Uses : Ginger is extremely valuable in dyspepsia, Flatulence,  
Colic, vomiting spasms and other painful affections of the  
Stomach and the bowels unattended by fever for cold,  
cough, asthma, dyspepsia.

### 4. மிளகு (PIPER NIGRUM) <sup>35</sup>

Family : piperaceae  
Part of use : Dried unripe fruit  
Taste : Bitter,pungent  
Potency : Heat  
Pirivu : pungent  
Action : Acrid,carminative,Antiperiodic,Rubefacient,  
Stimulant,Resolvent,Antivatha,Anti dote  
Uses : Powdered long pepper administered with honey will relieve  
Cough, cold, asthma, hoarse-ness and hiccup.

## ***DIKKAMALLI THYLAM***

(Ref : siddha vaidhya pathartha gunu vilakkam page no.412)

1. டீக்காமல்லி (GARDENIA GUMMIFERA)
2. கஸ்தூரி மஞ்சள் (CURCUMA AROMATICA)
3. பளிங்கு சாம்பிராணி (BOSWELLIA SERRATA)
4. கார்போகரிசி (PSORALEA CORYLIFOLIA)
5. கொம்பரக்கு (CARTERIA LACCA)
6. சந்தனத் தூள் (SANTALUM ALBUM)
7. சடாமாஞ்சில் (NARDOSTACHYS SATAMANJI)
8. நல்லெண்ணெய் (SESAMUM INDICUM)

Method of preparation :

Above all ingredients were taken into equally and made powder form by rock mortar grinded with goat milk. then it was added with gingely oil. and boiled under low flame.Until it reaches thylapakkuvam.

Route of adiministration : external – oil bath

Duration : Twice in 7 days.

Indication : Headache, tiredness,Accumulation of fluid in para nasal sinuses,sneezing.

### **1. டீக்காமல்லி (GARDENIA GUMMIFERA) 35**

|             |   |
|-------------|---|
| Part of Use | : Gum   |
| Taste       | : Astringent  |
| Potency     | : Heat  |
| Pirivu      | : Pungent   |
| Action      | : Demulcent , Mild astringent,<br>Emollient, Anodyne,<br>Aphrodisiac. |

### **2. கஸ்தூரி மஞ்சள் (CURCUMA AROMATICA) 35**

|             |                 |
|-------------|-----------------|
| Family      | : Zingiberaceae |
| Part of Use | : Tuber         |

|         |  |
|---------|--|
| Taste   | : Bitter   |
| Potency | : Heat   |
| Pirivu  | : Pungent  |
| Action  | : Tonic, Stimulant, Carminative  |
| Uses    | : It is used as an aromatic adjunct to other medicine. Used in skin disease and impurities of the blood. It is given to promote eruptions in exanthematous fevers. It is also used externally, boiled in oil as an application to sprains and bruises. |

### 3. பளிங்கி சாம்பிராணி (BOSWELLIA SERRATA) <sup>35</sup>

|             |  |
|-------------|--|
| Family      | : Burseraceae  |
| Part of use | : gum  |
| Taste       | : pungent  |
| Potency     | : heat   |
| Pirivu      | : pungent  |
| Action      | : stimulant, expectorant, counter irritant<br>Diuretic |

### 4. கார்போகரிசி (PSORALEA CORYLIFOLIA) <sup>35</sup>

|             |   |
|-------------|---|
| Family      | : Papilionaceae   |
| Part of use | : Seed  |
| Taste       | : Bitter  |
| Potency     | : Heat  |
| Pirivu      | : Pungent   |
| Action      | : Laxative, Stimulant   |
| Uses        | : Seeds are useful in bilious affections and are also used to make a performed oil, and its powder is specially recommended by Vaidyars in leprosy and leucoderma internally. |

5. கெம்பரக்கு CARTERIA LACCA(or) COCCUS LACCA

Character: Lac is a resinous substance usually of a reddish or dark-brown colour, with a disagreeable smell and easily breakable with a cracking sound, deposited on the turigs of trees such as the banyan, croton, and acacia.

|         |  |
|---------|--|
| Taste   | : astringent, bitter   |
| Potency | : heat   |
| Pirivu  | : Bitter   |
| Action  | :Astringent,altertive  |
| Uses    | : This oil is much used for inunctions in chrome fever and consumption and Is applied to the chest in remittent fever accompanied by cough and dyspnoea Also used in lumbag, myalgia, epilepsy and lysteria. |

6. சந்தனத்தூள் SANTALUM ALLBUM<sup>35</sup>

|             |   |
|-------------|---|
| Family      | : Santalaceae   |
| Part of use | : Wood  |
| Taste       | : Bitter, mild astringent   |
| Policy      | : Heat, Cold  |
| Pirivu      | : Sweat   |
| Action      | : Alterative,Diuretic,Diaphoretic, Stimulant, Disinfectant, Astringent, Cooling   |
| Uses        | : In remittent fevers the oil acts as a diaphoretic. Externally the oil is an excellent application in scabies in every stage and form. |

7. சலாமாஞ்சில் (NARDOSTACHYS SATAMANJI) <sup>35</sup>

|              |                    |
|--------------|--------------------|
| Family       | : Valerianaceae    |
| Part of Uses | : Root             |
| Taste        | : Fresh root sweat |
| Potency      | : Heat             |
| Pirivu       | : Pungent          |

Action : Stimulant, Antispasmodic, Diuretic, Expectorant  
Uses : Root is employed in the treatment of spasmodic hysterical affections, especially palpitation of heart, nervous headache, chorea, flatulence. It is also used in fever, cough, eye disease.

#### 8. நல்லெண்ணெய் SESAMUM INDICUM<sup>35</sup>

Family : Pedaliaceae  
Part of use : Seed oil  
Taste : Sweet  
Potency : Heat  
Pirivu : Sweet  
Action : Demulcent, Laxative, Nutritive, Emollie  
Uses : A mixture made up of a seed of sesame oil and 1 tola each of camphor, sandal wood oil and cinnamon oil is a cure for headache.

## Qualitative analysis of Acidic/Basic radicals and phytochemical constituents in test drugs

| <b>Procedure</b>   | <b>Observation</b>             | <b>Inference</b>        |
|--|--------------------------------|-------------------------|
| <b>Test for Calcium</b> : 2 ml of extract is taken in a clean test tube. To this add 2 ml of 4% ammonium oxide solution. | No white precipitate is formed | Absence of calcium      |
| <b>Test for Sulphate</b> : 2 ml of the extract is added to 5 % barium chloride solution.                                 | No white precipitate is formed | Absence of Sulphate     |
| <b>Test for Chloride</b> : The extract is treated with Silver nitrate solution   | No white precipitate is formed | Absence of Chloride     |
| <b>Test for carbonate</b> : The substance is treated with Conc. HCl.   | No effervescence is formed     | Absence of carbonate    |
| <b>Test for Starch</b> : The extract is added with weak iodine solution  | Blue colour is formed          | Presence of starch      |
| <b>Test for Iron (Ferric)</b> : The extract is treated with glacial acetic acid and potassium ferrocyanide               | No blue colour is formed       | Absence of Ferric iron  |
| <b>Test for Iron (Ferrous)</b> : The extract is treated with Conc. HNO <sub>3</sub> and ammonium thiocyanate             | No Blood red colour is formed  | Absence of Ferrous iron |

|  |                                  |                                 |
|--|----------------------------------|---------------------------------|
| <b>Test for phosphate</b> : The extract is treated with ammonium molybdate and conc. HNO <sub>3</sub>  | Yellow precipitate is formed     | Presence of phosphate           |
| <b>Test for Tannic acid</b> : The extract is treated with Ferric chloride  | Blue black precipitate is formed | Presence of Tannic acid         |
| <b>Test for Unsaturation</b> : 1 ml of Potassium permanganate solution is added to the extract.  | Does not get decolourised        | Absence of unsaturated compound |
| <b>Test for saponins</b> : Dilute extract+ 1ml of distilled water shake well.  | Froth formation                  | Presence of saponins            |
| <b>Test for sugars</b> :<br><b>Benedict method</b> ; 5ml of Benedict solution heated gently then add 8 drops of diluted extract then heated in a boiling water bath. | No colour change                 | Indicates the Absence of sugar  |
| <b>Molisch test</b> ; Dilute extract+2 drops of Molisch+3ml conc.H <sub>2</sub> SO <sub>4</sub> .  | No Reddish violet zones appeared | Absence of carbohydrate         |
| <b>Test for steroids</b> :<br>Lieberman Burchard test ; Dilute extract +2 ml acetic anhydride+conc.H <sub>2</sub> SO <sub>4</sub> .                                  | No Formation of red colour       | Absence of steroids             |
| <b>Test for amino acids</b> :<br>Dilute extract +2ml of Ninhydrin's soln .   | Formation of violet colour       | Presence of amino acids         |



|  |   |  |
|--|---|--|
| <b>Test for proteins:</b> Biuret method ; 1ml of dilute extract+ 1ml of 5% CuSO <sub>4</sub> + 1% NaOH.  | Formation of Violet colour  | Presence of proteins                               |
| <b>Test for Flavanoids :</b><br>Dilute extract+ mg bits+ 2 drops of conc. HCl and gently heated.   | No formation of pink colour   | Absence of Flavanoids                              |
| <b>Test for phenol;</b> Dilute extract+ 2 drops of FeCl <sub>3</sub> soln.   | Deep green colour is formed   | Presence of phenols                                |
| <b>Test for Tannins ;</b> dilute extract + 2ml of 10% lead acetate add.  | White precipitate formed  | Presence of tannins                                |
| <b>Test for alkaloids;</b><br>Mayer's method; 1ml of dilute extract + 1ml reagent.<br><br>Dragendorff's method; 1ml of dilute extract+ 1ml of reagent. | Appearance of cream colour precipitate<br><br>Appearance of orange colour precipitate | Presence of alkaloids<br><br>Presence of alkaloids |

**PRECLINICAL PHARMACOLOGICAL & TOXICOLOGICAL  
STUDIES OF SINGATHI CHOORANAM (SC) WITH  
CHITTRARATHAI KUDINEER (CK) FOR ANTI HISTAMINIC,  
ANTI INFLAMMATORY AND ANALGESIC ACTIVITIES IN  
EXPERIMENTAL ANIMALS**

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## **1.0 MATERIALS AND METHODS**

### **1.1 Test Drugs**

The following medicine were used in the study were collected and processed by the methods prescribed in standard text books of siddha medicines.

#### 1.1 Singathi chooranam (SC) with Chittrarathai Kudineer

SC with CK were prepared by the method described in (agasthiyar mani 4000 and siddha vaithya pathartha guna vilakkam)

### **1.2 Preparation of drug for dosing**

All drugs used for the study was suspended each time with 1% (w/v) solution of sodium carboxy methyl cellulose before administration.

### **1.3 Drugs and chemicals**

Histamine hydrochloride and fine chemicals used in these experiments were obtained from Sigma Chemicals company, U.S.A. Other analytical grade chemicals were obtained from S.d. Fine Chemicals Ltd., Mumbai.

### **1.4 Experimental animals**

Colony inbred animals strains of wistar rats of either sex weighing 200 - 250 g were used for the pharmacological and toxicological studies. The animals were kept under standard conditions 12:12 (day/night cycles) at 22°C room temperature, in polypropylene cages. The animals were fed on

standard pelleted diet (Hindustan Lever Pvt Ltd., Bangalore) and tap water *ad libitum*. The animals were housed for one week in polypropylene cages prior to the experiments to acclimatize to laboratory conditions. The experimental protocol was approved by the Institutional Animal Ethical Committee (IAEC).

### **1.5 Acute oral toxicity study**

Acute oral toxicity was conducted as per the OECD guidelines (Organization of Economic Cooperation and Development) 423 (Acute Toxic Class Method). The acute toxic class method is a stepwise procedure with 3 animals of a single sex per step. Depending on the mortality and /or moribund status of the animals, on the average 2-4 steps may be necessary to allow judgment on the acute toxicity of the test substance. This procedure results in the use of a minimal number of animals while allowing for acceptable data based scientific conclusion.

The method uses defined doses (5, 50, 300, 2000 mg/kg body weight) and the results allow a substance to be ranked and classified according to the Globally Harmonized System (GHS) for the classification of chemicals which cause acute toxicity

Wistar albino rats of either sex weighing 200-250 g were fasted overnight, but allowed water *ad libitum*. Since the formulation is relatively non toxic in clinical practice the highest dose of 2000 mg/kg/p.o (as per OECD guidelines “Unclassified”) was used in the acute toxicity study.

The animals were observed closely for behavioural toxicity, if any by using FOB (Functional observation battery).

### **1.6 Repeated oral toxicity study**

Repeated oral toxicity studies can be used to get additional information regarding the toxicity profile of a chemical. Repeated oral toxicity studies are defined as those studies where the chemical is administered to the animal for a period covering approximately 10% of the expected life of the animal.

Usually, the dose levels are lower than for acute studies and allow chemicals to accumulate in the body before lethality occurs, if the chemical possess this ability.

### **Experimental procedure**

The following experimental procedure was followed to evaluate the repeated oral toxicity study of

#### 1. *Singathi Chooranam (SC) and Chittirathai Kudineer (CK)*

Group I : Control animals received 1% Sodium carboxy methyl cellulose (CMC), 2 ml/kg/p.o. for 21 days

Group II : Drugs suspended in CMC was given at the dose Level of 500 mg/kg/p.o. for 21 days

Body weight, food intake and water intake was recorded at two intervals with simultaneous observation for toxic manifestation and mortality, if any. At the end of 21 days treatment all the animals were sacrificed by over dosage of ether anaesthesia. Blood was collected and used for haematological studies. Section of liver, kidney, and heart were dissected out and kept in 10% formalin for histopathological studies.

### **1.7 Biochemical studies**

#### **Aspartate aminotransferase (AST)**

Aspartate aminotransferase was estimated using commercial AST kit (Span Diagnostics) by the method of Reitman and Frankel (1957).

#### **Alanine aminotransferase (ALT)**

Alanine aminotransferase was estimated using commercial AST kit (Span Diagnostics) by the method of Reitman and Frankel (1957).

### **Alkaline phosphatase (ALP)**

Alkaline phosphatase was assayed using commercial ALP kit (Span Diagnostics) by the method of King (1934).

### **Urea**

Urea was assayed using the commercial kit (Span Diagnostics) by the method of Coulambe *et al.*, (1965).

## **1.8 Haematological studies**

### **Erythrocyte count**

Erythrocyte count was estimated by Hemocytometer method of Ghai (1995).

### **Total Leukocyte Count (WBC)**

Total Leukocyte Count was estimated by Hemocytometer method of John (1972).

### **Haemoglobin**

Haemoglobin was estimated by method of Ghai (1995).

## **1.9 Analgesic, Antiinflammatory, Anti histaminic studies**

### **Analgesic activity**

#### **Tail Flick method**

Withdrawal of tail (Tail Flick) for noxious thermal (radiant heat) can be used for screening drugs with analgesic activity. Radiant heat can be generated by passing electrical current through nichrome wire mounted in an analgesiometer.

The base of the tail of the test rats is placed on a nicrome wire. The tail withdrawal for the radiant heat (flicking response) is taken as the end point. Normally the rats and mice withdraw their tails within 3 – 5 secs. A cutoff time of 10 – 12 secs is used to prevent damage to the tail. Any animal failing to withdraw its tail in 3-5 secs is rejected from the study.

The reaction time of test drug, standard and control are taken at intervals of 30, 60 and 120 mts. A reaction time (withdrawal time) increment of 2-5 secs more than the control animals can be considered for analgesic activity of the drug.

### **Anti inflammatory activity**

Anti inflammatory activity was evaluated in acute model of inflammation.

#### **Acute model**

##### **Carrageenan induced hind paw edema**

The carrageenan assay procedure was carried out according to the method of Wintar *et al.* (1962). Edema was induced by injecting 0.1 ml of 1% solution of carrageenan in saline into the plantar aponeurosis of the left hind paw of the rats. The extracts, reference drug and the control vehicle (distilled water) were administered 60 min prior to the injection of the carrageenan. The volumes of edema of the injected and contra lateral paws were measured at +1, 3 and 5 hrs after induction of inflammation using a plethysmometer (Bhatt *et al.*, 1977) and percentage of anti-inflammatory activity was calculated.

##### **Antagonistic action of PC in Guinea pig ileum contraction.**

Histamine is an autocoid having many physiological effects in the system. Histamine has spasmogenic response in g.pig ilium. Histamine by acting on H<sub>1</sub> receptor of smooth muscle causes contraction which can be recorded by a kymograph. Drugs acting as H<sub>1</sub> receptor antagonists, block the contraction of histamine in g.pig ileum.

2 – 3 cm long ileum is taken and mounted to the tissue holder of the organ bath containing Tyrode solution maintained at 32 – 34°C and bubbled with a mixture of CO<sub>2</sub> + air.

A tension of 0.5 g is applied to the lever and the tissue is allowed to equilibrate for 30 mts before adding drugs. Record concentration dependent response (10 µg – 80µg) due to histamine using a frontal writing lever. Add the test drug in different concentrations (2 µg - 5µg) to the tissue bath and repeat the concentration- response curve of histamine in the presence of the test drug. Calculate the % inhibition of contraction by the test drug.

#### **1.10 In Vivo Antioxidant study**

Samples of serum collected from rats treated with test drugs were assayed for GSH (Moron *et al* , 1979) and LPO (Yagi, 1976) and the results were compared with control group.

## **2.0 Results**

### **2.1 Preliminary basic, acidic radicals and phytochemical studies**

The qualitative chemical analysis and acidic, basic radicals assay of the drugs showed the presence of phytoconstituents and minerals as depicted in (Table 1).

### **2.2 Acute oral toxicity study**

SC with CK at the dose of 2000mg/kg/po did not exhibit any mortality in rats. As per OECD 423 guidelines the dose is said to be “Unclassified” under the toxicity scale.

### **2.3 Repeated oral toxicity for 21 days**

Test drug SC with CK at the dose of 500 mg/kg/po when administered orally for 21 days in rats did not show toxicity in renal functions. There was an significant increase in % of Hb and RBC (Table 2 ). However the drug did not show any significant elevation of marker enzyme levels of liver (Table 3).

### **2.4 Analgesic, Anti inflammatory and Anti histaminic studies**

*Singathi Chooranam* (SC) and *Chittrarathai Kudineer* (CK) are commonly used in the siddha medicine as anti allergic drugs. The combination of these



drugs when tested in g.pig ileum, it produced a dose dependent inhibition of the contractions produced by histamine (Table 5). SC and CK when screened for anti-inflammatory activity in acute model inflammation exhibited significant reduction in the edema volume when compared to control animals. A delayed anti-inflammatory response was observed with SC + CT when compared to the diclofenac sodium, the standard NSAID drug.

SC + CK also exhibited analgesic activity when tested in the tail flick method using radiant heat in an analgesiometer.

## **2.6 Antioxidant activity**

At the end of 21 days repeated oral toxicity study when the plasma of drug treated animals was examined for GSH activity, the level of GSH activity was increased significantly ( $p > 0.001$ ) in test groups.

## **Discussion**

SC + CK acts on the Histamine  $H_1$  receptor and antagonized the contraction of histamine. Antiallergic drugs are antagonizing the action of histamine at  $H_1$  receptors and prevent the vasodilation, itching and edema formation, the primary symptoms of allergy. There is a good correlation of experimental study and clinical observation for this combination.

In allergy histamine release is followed by inflammation and edema formation in the tissue. The first phase of inflammation in carrageenan induced edema is mainly due to the release of inflammatory mediators like histamine, bradykinine etc. In the present study, though early phase of inhibition of paw edema is not observed, the delayed anti-inflammatory response of SC + CK may be due to the inhibition of Pro inflammatory PG synthesis. However the antiallergic anti-inflammatory and analgesic activities of SC + CK have been established in this work.

**TABLE 1****PRELIMINARY ACID, BASIC RADICALS AND PHYTOCHEMICAL SCREENING**

| <b>S.No.</b> | <b>Constituents</b> | <b>SC</b> | <b>CK</b> |
|--------------|---------------------|-----------|-----------|
| 1.           | Calcium             | +         | +         |
| 2.           | Iron (Ferric)       | -         | -         |
| 3.           | Iron (Ferrous)      | +         | +         |
| 4.           | Sulphate            | +         | +         |
| 5.           | Chloride            | +         | +         |
| 6.           | Carbonate           | -         | -         |
| 7.           | Starch              | -         | +         |
| 8.           | Phosphate           | +         | +         |
| 9.           | Tannic acid         | +         | Trace     |
| 10.          | Unsaturated         | +         | +         |
| 11.          | Sugar               | +         | +         |
| 12.          | Alkaloids           | +         | +         |
| 13.          | Steroids            | +         | +         |
| 14.          | Protein             | +         | +         |
| 15.          | Tannins             | +         | +         |
| 16.          | Phenols             | -         | -         |
| 17.          | Flavanoids          | +         | +         |
| 18.          | Saponins            | +         | +         |
| 19.          | Amino acid          | +         | +         |
| 20.          | Glycosides          | +         | +         |

**Table 2**

**Effect of Siddha Formulations ( SC + CK ) on Haematological parameters after 15 days repeated oral dosing (500 mg/kg)**

| <b>Groups</b>                | <b>Hb<br/>(gm/ 100ml)</b> | <b>RBC<br/>(millions/cu.mm)</b> |
|------------------------------|---------------------------|---------------------------------|
| Control                      | 14.45±0.4113              | 5.20±0.047                      |
| Test<br>(500mg/kg.<br>p.o.,) | 13.92±2.22 <sup>ns</sup>  | 5.183±0.4262 <sup>ns</sup>      |

n= 6; Values are expressed as mean ± S.D followed by Students Paired 'T' Test. ns – non significant when compared to control groups

**Table 3**

**Effect of SC + CK on Biochemical markers of liver and kidney after 15 days repeated dosing (500 mg/kg/p.o) in rats**

| <b>Groups</b>                 | <b>ALP<br/>(K.A.Units)</b> | <b>AST<br/>(IU/L)</b> | <b>ALT (IU/L)</b> | <b>Urea<br/>(mg/ 100ml)</b> | <b>BUN<br/>(mg/ 100ml)</b> |
|-------------------------------|----------------------------|-----------------------|-------------------|-----------------------------|----------------------------|
| Control                       | 3.66 ± 0.37                | 76.16 ±<br>1.16       | 27.51±1.19        | 11.25±<br>0.537             | 4.92 ± 0.74                |
| SC+CT<br>(500mg/kg.<br>p.o.,) | 3.65± 0.39<br>ns           | 78.58 ±<br>1.64 ns    | 29.17±1.29<br>ns  | 13.08 ±<br>0.85 ns          | 5.17 ± 0.21<br>ns          |

n=6; Values are expressed as mean ± S.D followed by Students Paired 'T' Test. ns - Non significant as compared with control

**Table 4: Anti oxidant activity of SC + CK after 15 days repeated oral dosing(500mg/kg)**

| <b>Groups</b>             | <b>LPO</b>     | <b>GSH</b>      |
|---------------------------|----------------|-----------------|
| Control                   | 0.73 ± 1.37    | 53.28 ± 2.31    |
| SC + CK<br>(500mg/kg/p.o) | 0.46 ± 3.90*** | 73.31 ± 0.35*** |

N=6; Values are expressed as mean ± S.D followed by Student T-Test. \*\*\*P<0.001 as compared with control.

**Table 5: Effect of the SC + CK on histamine induced contractions of g. pig ileum**

| <b>S.No</b> | <b>Treatment</b>          |   |                      |   |  |
|-------------|---------------------------|---|----------------------|---|--|
|             | <b>Histamin<br/>µg/ml</b> | <b>Mean<br/>contraction<br/>(M meter)</b> | <b>KPC<br/>mg/ml</b> | <b>Mean<br/>contraction<br/>M meter</b> | <b>% inhibition<br/>of<br/>Histamine</b> |
| 1.          | 10.0                      | 55.62 ± 3.214                             | 10.0                 | 24.0 ± 4.432<br>***                     | 43.6                                     |
| 2.          | 20.0                      | 58.0 ± 0.672                              | 20.0                 | 30.0 ± 2.314<br>***                     | 51.8                                     |
| 3.          | 40.0                      | 62.130 ±<br>2.214                         | 40.0                 | 40.2 ± 3.216<br>***                     | 64.5                                     |
| 4.          | 80.0                      | 75.0 ± 0.546                              | 80.0                 | 44.60 ±<br>0.967<br>***                 | 66.4                                     |

n=6; Values are expressed as mean ± S.D followed by Students Paired 'T' Test. \*\*\*P<0.001 as compared with that of control.

**Table 6****Anti inflammatory activity of SC + CK induced end paw edema in rats**

| <b>Groups</b>                         | <b>Paw volume ( ml) by mercury Displacement at regular interval of time</b> |                       |                        |                        |                         |                        |
|---------------------------------------|---|-----------------------|------------------------|------------------------|-------------------------|------------------------|
|                                       | <b>0min</b>   | <b>30min</b>          | <b>60min</b>           | <b>120min</b>          | <b>240min</b>           | <b>15hrs</b>           |
| Control                               | 1.233<br>±0.338   | 1.40 ±<br>0.236       | 2.166±<br>0.286        | 2.1667<br>± 0.287      | 2.25±<br>0.273          | 2.325<br>±0.236        |
| SC + CT<br>(500mg/kg.<br>p.o.,)       | 1.233<br>±0.338<br>ns   | 1.40 ±<br>0.236<br>ns | 2.3 ±<br>0.2366<br>*** | 1.966±<br>0.226<br>*** | 1.766 ±<br>0.225<br>*** | 1.183<br>±4.082<br>*** |
| Standard<br>(Dic.Sodium<br>5mg/kg/po) | 0.835<br>±0.065<br>ns   | 1.315<br>±0.069ns     | 1.128<br>±0.049**      | 1.011 ±<br>0.056***    | 0.896 ±<br>0.048***     | 0.85<br>±0.054<br>***  |

n=6; Values are expressed as mean ± S.D followed by student paired T- test.  
ns - Non significant as compared with control; (\*\*) $P < 0.003$ ,  $P < 0.001$  (\*\*\*) as compared with control.

**Table 7****Analgesic activity of SC + CK using Tail flic Plate Method**

| <b>Groups</b>            | <b>Paw licking response (Sec)</b> |                    |                    |                     |
|--------------------------|-----------------------------------|--------------------|--------------------|---------------------|
|                          | <b>0min(Sec)</b>                  | <b>30min(Sec)</b>  | <b>60min(Sec)</b>  | <b>120min(Sec)</b>  |
| Control                  | 1.56±0.96                         | 1.86 ± 0.96        | 1.76 ± 0.67        | 1.86 ± 0.53         |
| Test(500mg/kg.<br>p.o.,) | 2.266±0.361<br>***                | 2.766±0.361<br>*** | 3.966±0.582<br>*** | 4.55± 0.6156<br>*** |

n=6, Values are expressed as mean ± S.D using followed by paired T – test  
\*\*\* $P < 0.001$  as compared with control.

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**AN OPEN PILOT CLINICAL TRIAL OF SIDDHA DRUGS *SINGATHI CHOORANAM* WITH *CHITTARATHAI KUDINEER* AND *DIKKAMALLI THYLAM* FOR THE TREATMENT OF *NEER PEENISM*(SINUSITIS)**

**FORM-I SELECTION PROFORMA**

1. O.P.No / I.P No: \_\_\_\_\_ 2. Bed No: \_\_\_\_\_ 3. S.No: \_\_\_\_\_

4. Name: \_\_\_\_\_ 5. Age (years):   6. Gender: Male/Female

7. Occupation: \_\_\_\_\_ 8. Income: \_\_\_\_\_

9. Address: \_\_\_\_\_  
\_\_\_\_\_

10. Complaints and duration: \_\_\_\_\_  
\_\_\_\_\_

11. History of present illness: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

12. Past history: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

13. Family history: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

| Habits               | Yes (1)                  | No (2)                   |
|----------------------|--------------------------|--------------------------|
| 14. Smoker           | <input type="checkbox"/> | <input type="checkbox"/> |
| 15. Alcoholic        | <input type="checkbox"/> | <input type="checkbox"/> |
| 16. Betal Nut chewer | <input type="checkbox"/> | <input type="checkbox"/> |
| 17. Drug Addiction   | <input type="checkbox"/> | <input type="checkbox"/> |
| 18. Non-vegetarian:  | <input type="checkbox"/> | <input type="checkbox"/> |

## GENERAL EXAMINATION

19. Weight (kg):
20. Temperature (°F):  .
21. Pulse rate / minute:
22. Heart rate / minute:
23. Respiratory rate / minute:
24. Blood pressure (mmHg):  /

- |                              | 1. Yes                   | 2.No                     |
|------------------------------|--------------------------|--------------------------|
| 25. Pallor:                  | <input type="checkbox"/> | <input type="checkbox"/> |
| 26. Jaundice:                | <input type="checkbox"/> | <input type="checkbox"/> |
| 27. Cyanosis:                | <input type="checkbox"/> | <input type="checkbox"/> |
| 28. Lymphadenopathy:         | <input type="checkbox"/> | <input type="checkbox"/> |
| 29. Pedal oedema:            | <input type="checkbox"/> | <input type="checkbox"/> |
| 30. Clubbing:                | <input type="checkbox"/> | <input type="checkbox"/> |
| 31. Jugular vein pulsation:  | <input type="checkbox"/> | <input type="checkbox"/> |
| 32. Congenital Abnormalities | <input type="checkbox"/> | <input type="checkbox"/> |
| 33. Engorged Vein            | <input type="checkbox"/> | <input type="checkbox"/> |
| 34. Abdominal Distension     | <input type="checkbox"/> | <input type="checkbox"/> |

## CLINICAL EXAMINATION

- |              | 1. Yes                   | 2.No                     |
|--------------|--------------------------|--------------------------|
| 35. Sneezing | <input type="checkbox"/> | <input type="checkbox"/> |
| 36. Cough    | <input type="checkbox"/> | <input type="checkbox"/> |



- |  |                          |                          |
|--|--------------------------|--------------------------|
| 37. Headache                           | <input type="checkbox"/> | <input type="checkbox"/> |
| 38. Rhinorrhoea                        | <input type="checkbox"/> | <input type="checkbox"/> |
| 39. Tiredness                          | <input type="checkbox"/> | <input type="checkbox"/> |
| 40. Tenderness in the frontal region   | <input type="checkbox"/> | <input type="checkbox"/> |
| 41. Tenderness in the maxillary region | <input type="checkbox"/> | <input type="checkbox"/> |
| 42. Body pain                          | <input type="checkbox"/> | <input type="checkbox"/> |
| 43. Change sense of smell              | <input type="checkbox"/> | <input type="checkbox"/> |

**EXAMINATION OF OTHER SYSTEMS**

- |                      | 1. Normal                | 2. Affected              |       |
|----------------------|--------------------------|--------------------------|-------|
| 44. CVS              | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| 45. RS               | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| 46. CNS              | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| 47. RENAL SYSTEM     | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| 48. ENDOCRINE SYSTEM | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| 49. NERVOUS SYSTEM   | <input type="checkbox"/> | <input type="checkbox"/> | _____ |

**SIDDHA SYSTEM OF EXAMINATONS**

**50. THINAI**

- |            |                          |           |                          |             |                          |
|------------|--------------------------|-----------|--------------------------|-------------|--------------------------|
| 1. Kurunji | <input type="checkbox"/> | 2. Mullai | <input type="checkbox"/> | 3. Marutham | <input type="checkbox"/> |
| 4. Neithal | <input type="checkbox"/> | 5. Palai  | <input type="checkbox"/> |             |                          |

### 51. PARUVA KAALAM

1. Elavenil kalam  2. Muthuvenil kalam   
3. Mazhai kalam  4. Kulir kalam   
5. Munpani kalam  6. Pinpani kalam

### 52. YAKKAI

1. Vali  2. Azhal  3. Iyam   
4. Valiazhal  5. Valaiyam  6. Azhalvali   
7. Azhaliyam  8. Iyavali  9. Iyaazhal

### 53. GUNAM

1. Sathuva gunam  2. Rajo gunam   
3. Tamo gunam

### IYMPORIKAL

- |            | 1. Normal                | 2. Affected                    |
|------------|--------------------------|--------------------------------|
| 54. Mei    | <input type="checkbox"/> | <input type="checkbox"/> _____ |
| 55. Vaai   | <input type="checkbox"/> | <input type="checkbox"/> _____ |
| 56. Kan    | <input type="checkbox"/> | <input type="checkbox"/> _____ |
| 57. Mookku | <input type="checkbox"/> | <input type="checkbox"/> _____ |
| 58. Sevi   | <input type="checkbox"/> | <input type="checkbox"/> _____ |

### KANMENTHIRIUM

59. Kai   \_\_\_\_\_  
60. Kaal   \_\_\_\_\_

61. Vaai   \_\_\_\_\_

62. Eruvai   \_\_\_\_\_

63. Karuvaai   \_\_\_\_\_

## UYIR THATHUKKAL

### VALI

1. Normal      2. Affected

64. Pranan   \_\_\_\_\_

65. Abanan   \_\_\_\_\_

66. Samanan   \_\_\_\_\_

67. Udhanan   \_\_\_\_\_

68. Viyanan   \_\_\_\_\_

69. Nagan   \_\_\_\_\_

70. Koorman   \_\_\_\_\_

71. Kirukaran   \_\_\_\_\_

72. Devathathan   \_\_\_\_\_

73. Tananjeyan   \_\_\_\_\_

### AZHAL

1. Normal      2. Affected

74. Anala pittham   \_\_\_\_\_

75. Prasaka pittham   \_\_\_\_\_

- |                      |                          |                          |       |
|----------------------|--------------------------|--------------------------|-------|
| 76. Ranjaka pittham  | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| 77. Aalosaka pittham | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| 78. Saathaka pittham | <input type="checkbox"/> | <input type="checkbox"/> | _____ |

**IYAM**

- |                 | 1. Normal                | 2. Affected              |       |
|-----------------|--------------------------|--------------------------|-------|
| 79. Avalambagam | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| 80. Kilethagam  | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| 81. Pothagam    | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| 82. Tharpagam   | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| 83. Santhigam   | <input type="checkbox"/> | <input type="checkbox"/> | _____ |

**UDAL THATHUKKAL**

- |                           | 1. Normal                | 2. Affected              |       |
|---------------------------|--------------------------|--------------------------|-------|
| 84. Saaram                | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| 85. Chenneer              | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| 86. Oon                   | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| 87. Kozhuppu              | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| 88. Enbu                  | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| 89. Moolai                | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| 90. Sukkilam / Suronitham | <input type="checkbox"/> | <input type="checkbox"/> | _____ |

**ENVAGAI THERVUKAL**

- |           | 1. Normal                | 2. Affected              |       |
|-----------|--------------------------|--------------------------|-------|
| 91. Naa   | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| 92. Niram | <input type="checkbox"/> | <input type="checkbox"/> | _____ |

93. Mozhi   \_\_\_\_\_

94. Vizhi   \_\_\_\_\_

95. **Sparisam:** 1.Mithaveppam  2.Miguveppam

3. Thatpam

**Malam**

1. Normal

2. Affected

96. Niram

97. Nurai

98. Karumai

99. Kalappu

100. Thanmai

**Moothiram**

**Neerkuri**

101. Niram   \_\_\_\_\_

102. Eadai   \_\_\_\_\_

103. Manam   \_\_\_\_\_

104. Nurai   \_\_\_\_\_

105. Enjal   \_\_\_\_\_

106. **Neikuri:** 1.Vatham  2. Pittham  3. Khabam

107. **Naadi:** 1.Vatham  2.Pittham  3.khabam

4. Vathapittham  5. Vathakhabam  6. Pitthavatham

7. Pitthakhabam  8. Khabavatham  9. Khabapittham

## INVESTIGATIONS

### BLOOD

108. TC (cells /cumm):

109. DC (%): P  L  E  B   
M

110. Hb (gm %): .

ESR (mm/hr): 117. 1/2hr  118. 1hr

111. Blood Sugar (F) (mg %):

112. Post Prandial (mg %):

113. Random (mg %)

114. Blood Urea (mg %):

115. Serum Creatinine (mg %): .

116. Serum Cholesterol (mg %):

### URINE

117. Albumin: 0. Nil  1. Trace  2. +  3. ++   
4. +++

118. Sugar (F): 0. Nil  1. Trace  2. +  3. ++   
4. +++

119. Sugar (PP): 0. Nil  1. Trace  2. +  3. ++   
4. +++

Deposit 1. Yes 2. No

120. Pus cells

121. Epithelial cells

122. RBC

123. Crystals

**MOTION**

|          | <b>Present(1)</b>        | <b>Absent(2)</b>         |
|----------|--------------------------|--------------------------|
| 124. Ova | <input type="checkbox"/> | <input type="checkbox"/> |

|           |                          |                          |
|-----------|--------------------------|--------------------------|
| 125. Cyst | <input type="checkbox"/> | <input type="checkbox"/> |
|-----------|--------------------------|--------------------------|

|                   |                          |                          |
|-------------------|--------------------------|--------------------------|
| 126. Occult blood | <input type="checkbox"/> | <input type="checkbox"/> |
|-------------------|--------------------------|--------------------------|

|                |                          |                          |
|----------------|--------------------------|--------------------------|
| 127. Pus cells | <input type="checkbox"/> | <input type="checkbox"/> |
|----------------|--------------------------|--------------------------|

128. ADMITTED TO TRIAL: 1. Yes  2. No

If yes

129. S. No:

130. I.P / O.P 1. I.P  2. O.P

131. Drug issued for OP patient (g):

132. Station

133. Date:

134. Signature of the doctor

**AN OPEN PILOT CLINICAL TRIAL OF SIDDHA DRUGS *SINGATHI CHOORANAM* WITH *CHITTARATHAI KUDINEER* AND *DIKKAMALLI THYLAM* FOR THE TREATMENT OF *NEER PEENISM*(SINUSITIS)**

**FORM-II ASSESSMENT PROFORMA**

1. O.P.No / I.P No: \_\_\_\_\_ 2. Bed No: \_\_\_\_\_ 3. S.No: \_\_\_\_\_

4. Name: \_\_\_\_\_

5.Date of Admission to the trial

6.Date of the Assessment

7.Day of Assessment

**CLINICAL EXAMINATION**      1. Yes                      2.No

8. Sneezing                                           

9. Cough                                                   

10. Headache                                           

11. Rhinorrhoea                                           

12. Tiredness                                           

13. Tenderness in the frontal region                                           

14. Tenderness in the maxillary region                                           

15. Body pain                                           

16. Change sense of smell                                           

**FOR OP PATIENTS**

18. DRUGS ISSUE                      1. No. of Packs                                            2. Volume of Thylam                     

19. DRUGS RETURNED                      1. No. of Packs                                            2. Volume of Thylam                        
Date

Station

Signature of doctor



**LAB INVESTIGATIONS**

**BLOOD**

20. TC (cells /cumm):

|  |  |  |  |
|--|--|--|--|
|  |  |  |  |
|--|--|--|--|

21. DC (%):

P

L

E

B

M

|  |  |
|--|--|
|  |  |
|--|--|

22. Hb (gms %):

|  |  |   |  |
|--|--|---|--|
|  |  | . |  |
|--|--|---|--|

23. ESR (mm/hr):

1/2hr

|  |  |
|--|--|
|  |  |
|--|--|

1hr

|  |  |
|--|--|
|  |  |
|--|--|

24. Blood Sugar (F) (mg %):

|  |  |  |  |
|--|--|--|--|
|  |  |  |  |
|--|--|--|--|

25. Post Prantial (mg %):

|  |  |  |
|--|--|--|
|  |  |  |
|--|--|--|

**URINE**

26. Albumin: 0. Nil

1. Trace

2. +

3. ++

4. +++

27. Fasting :

0. Nil

1. Trace

2. +

3. ++

4. +++

28. Post Prandial:

0. Nil

1. Trace

2. +

3. ++

4. +++

29. Deposit

1. Yes

2. No

**MOTION**

**Present (1)**

**Absent (2)**

30. Ova

31. Cyst

32. Occult blood

**RESULT**

Cured

Improved

No change

Date:

Station:

signature:

**AN OPEN PILOT CLINICAL TRIAL OF SIDDHA DRUGS *SINGATHI CHOORANAM* WITH *CHITTARATHAI KUDINEER* AND *DIKKAMALLI THYLAM* FOR THE TREATMENT OF *NEER PEENISM*(SINUSITIS)**

**CONSENT FORM**

**CERTIFICATE BY INVESTIGATOR**

I certify that I have disclosed all details about the study in the terms readily understood by the patient.

Date

Signature

Name

**CONSENT BY PATIENT**

I have been informed to my satisfaction, by the attending physician, the purpose of the clinical trial, and the nature of drug treatment and follow-up including the laboratory investigations to be performed to monitor and safeguard my body functions.

I am aware of my right to opt out of the trial at any time during the course of the trial without having to give the reasons for doing so.

I, exercising my free power of choice, hereby give my consent to be included as a subject in the clinical trial of siddha drugs *Singathi Chooranam* with *Chittarathai Kudineer* and *Dikkamalli Thylam* for the treatment of *Neer Peenism*(SINUSITIS)

Date

Signature

Name

Date

Signature of Witness

Name

Relationship

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