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## INTRODUCTION

Man is a wonderful creature blessed by God. Imagination and laughter are milestones on the way that distinguishes man from other animals of mere living, no man was ever proud: but the good life had always been his aim.

To desire among goods the greatest good which is the most desirable, thus to be trusted to the self, to prefer among beautiful things, the grandeur beauty, thus to weigh objective things most truly; to worship that only which reflects infinite value; for this sound mind, one needs sound body. Health is Stated which not only keeps the body sound but also the mind.

Man is hale and healthy when his life moves along with nature, when he violates against it he is pushed into oriental stress, deteriorates his physique and ultimately his sound mind

Todys modern industrialization imbalance the Ecosystem which paves way for many diseases. To uproot these diseases there should be a system of medicine which goes hand in hand with the nature.

The Indian subcontinent abounds as it were in a variety and diversity of health traditions. We have with us what is perhaps the longest unbroken health tradition which has not only a stream of practitioners but also a textual and theoretical backing in terms of siddha and Ayurvedic system of medicine.

### **There are three types of Indigenous medicines:**

- i. Siddha system – origin from south India on the basis of Tamil language.
- ii. Ayurvedic system – in North India on the basis of Sanskrit
- iii. Unani – It is brought from Arabic countries to India by Mugalayas on the basis of Arab.

In the legend of science the only system with rich Dravidian culture is the noble Siddha system of medicine,. It is holistic and treats the complete individual and not merely the disease. The treatment varies for different individuals based on their constitution (Prakriti) and dietary habits.

It's proud and pleasure for the author to be in this field and to take up the dissertation on the disease that leads to many patients in despair

The treatment is known as in Siddha System is that to eradicate or to cure (or) to relieve the illness of the body as well as the Athma. Along with the human beings the medicine is also created. The medicinal substances or drugs were collected in the surroundings of the patients. Day by day the medicines are cultivated and collected for purpose of medicine according to the season and availability of drugs. The Indigenous medicine is based on three – dosha theory.

According to Siddha System the word Prakriti means “Nature” or Natural form of the build and constitution of the human body. Prakriti means “Natural Form (or) Original form”. Disease occurs when there is a change in this original form at the physiological or psychological level. Our siddha system considers Sukkilam, Suronitham, Thanvinai, Piravinal and Moola Prakrithi also. If there is any abnormalities in these factors will affects the universe as well as individual.

The universe around us is the macrocosm (Andam) and the human body is considered as the Microcosm (Pindam). Any change in the macrocosm will have its impact in the Microcosm. i.e Human body. Both are formed by the basic of five elements Pancha Boodhangal i.e: Prithivi (Earth), Appu (Water), Theyu (Fire), Vayu (Air), Aahayam (Ether). These five elements combine to form the three thathus (Vadha, Pitha,Kabha), the balance of which is very essential for the healthy life.

Vadha is formed by **AIR** and **AAHAYAM**

Pitha is formed by **FIRE**

Kabha is formed by **EARTH** and **WATER**

These three thathus are perceived as Naadi, which is the unique feature of siddha system. The existence of these thathus are in the ratio of 1:½:¼ respectively. If all the three thathus are in the above said ration the body will be healthy.

The diagnostic methods in siddha system are Envagai thervugal. They are

The objective of the siddha system is to maintain the balance of the three thathus and there by correcting the disease in the body.

The diseases evolving recently in the modern medicine have already been dealt by our great Siddhar's. Many millennium backs one such clinical entity is "Saganavadham" which is described by "Yugi Vaidhya Sindhamani – 800". Most of the clinical features of Saganavadham closely resembled to that of "cervical Spondylosis" in modern medicine. The author wishes to explain the "SaganaVadham" with other scientific factor in order to reach siddha basic principles to people.

The factor that cause pain in the neck, 80% of the people who suffer from neck pain those who are engaged in works which make chronic flexion of the cervical vertebrae as in tailors, porters, Agricultural labors, clerks, goldsmiths, dentists, writers etc.

In treating vadha diseases the Siddha system of medicine has its wonderful effects. So the author has tried to formulate a treatmetnt methodology to treat this disease.

**The author's choices of medicines for clinical study are.**

i. Agni Chooranam – **Agasthiyar Vaithya Rathina Chrukkam**

(Internally)

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Dose – 1-2 gm twice daily with hot water.

ii. Maasha thylam – 30 ml - **Anuboga vaithiya Deva Ragasium**

(Externally)

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The medicines were prepared by the author in PG Gunapadam Laboratory, with the guidance of the concerned Lecturers, and were tried in 20 selected IP cases and 20 selected OP cases of “Saganavadham” of varied etiology and the clinical study was undertaken in the Post – Graduate department.

In patient department of Maruthuvam Pothu the follow up study in all cases was done in the post graduate out patient department.

A comprehensive knowledge of siddha and modern concept about etiology, signs and symptoms, pathology, and Bio-chemical analysis will be very helpful to conduct the present Study in a useful manner.

## **AIM & OBJECTIVES**

The aim of the present work is to study the various aspects of the clinical study of saganavadham compared with cervical spondylosis in modern medicine was done 20 selected cases of both sex and treated in the IN patient ward of the post graduate department of pothu maruthuvam at Government Siddha medical college hospital, Palayamkottai. The main objective of the present study is to create an awareness about the siddha science and highlight the efficacy of siddha medicines among the public.

### **The aim and objectives are as follows:-**

1. Siddha system of medicine should reach the entire society of the world.
2. The unique aspect of Siddha principles namely the tridosha theories with respect to body constitution (prakriti) taste and seasonal variation (paruvakaalam) are interpreted with the disease
3. Make a detailed study of various literatures dealing with definition, aetiology, classification, signs and symptoms, prognosis, diet and treatment for saganavadham.
4. To study the incidence of the disease with respect to age, sex, socio-economic status, habit and family history
5. To have a clinical trial with specific medicine.
6. To evaluate the biochemical and pharmacological reports on dissertation medicine.
7. To have a detailed clinical investigations.
8. To insist thokkanam, yoga along with medicine to achieve better results.
9. To pave way for research work in future.
10. To have an clinical trial on saganavadham with Agni chooranam internally and Maasha thylam externally.



## **ABSTRACT**

Medicine is not merely a science but art as well. The science of medicine is of fundamental importance to Man's well being and survival.

The most common problem in day to day life is Saganavadham (Cervical Spondylosis). So the authors have chosen this disease and attempts to search for a perfect remedy for the same.

According to the Tridosha theory mentioned in siddha literatures, this disease occurs due to imbalance of three thathus.

The three thathus are made up of pancha Boothas. These panja boothas also form the basis for suvai. Saganavadham is the disease which occurs due to vitiation of vadha (Vali+Aahayam). To neutralize the vadha kutram the suvai Salt (appu + theyu) is necessary. The trial medicines are "Agni Choornam and Maasha thylam".

Along with these medicines, yoga and certain exercises were also advised to the patients to get good results.

# REVIEW OF LITERATURES

## SIDDHA ASPECTS

### MUKKUTRA IYAL

Diseases as classified as 4448 types. Among 4448 types the vadha constitutes 84 types.

This mentioned as

நாடடா நாற்பத்து நாலு நூறு  
நயமுடனே நாற்பத்து எட்டு ரேகம்  
பாறப்பா வாதமது 84.

- இரத்தின சுருக்க நாடி நூல்.

According to Yugi Vaidhya Chinthamani, Vadha is of 80 types.

என்னவே வாதம் தான் என்பதாகும்

## VADHAM

**Synonyms** – Vayu, Vali, Arasan, Air.

### **Definition:**

Vadha or Vayu is not mere a wind, but also that causes motion energy and sensation of every cell in the body. So vadha is humour which is responsible for construction nature of works in the human body.

### **Geneis of Vadha**

Vadha - Vali + Aakayam

When vali bootham and Aakaya bootham are combined vadha is formed.

### **Shape**

It is invisible. It can be felt by action or movements of the body.

## **The relation between panchabootham and Uyir thathukkal**

<b>Uyir Thathukkal</b>	<b>Panchabootham</b>
Vatham	Aahaayam (Space)
	Vayu (Air)
Pitham	Theyu (fire)
Kabam	Appu (Water)
	Prithivi (Earth)

It would be incorrect to think of the “Thodams” only as the Three dynamic elements manifesting in the body. These active elements are always supported by the two stable elements, for change can only happen upon the foundation of stable. Thus Vayu and Aahaayam combine to become ‘Vatha Thodom’ which controls all aspects of movements as well as space with in the body. In spite of this combination, however, “Vatha thodam” tends to primarily display the characteristics of Vayu-wind. The words “dry, light, cold, quick, rough, minute and mobile” describes the characteristics of “Vaadha Thodam”.

Theyu, in conjunction with some of the qualities of vayu and Appu, becomes “Pitha Thodam”. This is the function that governs all the body’s conversion processes as well as its heat and energy producing capacities. ‘Pitha Thodam’ is primarily characterized by the qualities of Theyu, which are “hot, sharp, penetrating, light, acidic, and slightly oily”.

‘Appu’ supported by “Prithivi” becomes “Kaba Thodam” and controls liquefaction, lubrication and cohesion. It is also responsible for giving solidity and structure to the body. ‘Kaba Thodam’ primarily reflects the qualities of the water, but also some traits of the earth elements, consequently, ‘Kabam’ is heavy, slow, cold, steady, solid and oily.

Another interesting feature of the ‘Thodas’ is that each has a taste associated with it.

“Vatham” is mostly Pungent,

“Pitham” is Sour and

“Kabam” is Sweet

### **THODAMS AND THEIR FUNCTIONS**

Vatha Thodam

Separation / Movement

Pitha Thodam

Conversion / Transformation

Kaba Thodam

Cohesion / Liquidity

These three humours vatham, pitham and kabam are more or less correlated with Air, Gastric juice and Saliva respectively. They circulate in the body system in different proportions and help in the digestion of food and other general physiological functions of the body. Each of them has different functions. The right proportion of each, in proper combination are responsible for maintaining the good health.

When some of the environmental factors like diet, weather etc., disturb vatham, it loses its control, which may be diminished or exaggerated. So the other two “Thodams” are also disturbed which are in peculiar Equilibrium State. Finally this lead to “Vatha” diseases.

### **LOCATIONS:**

Below the navel.

“நாமென்ற வாதத்துக் கிருப்பிடமே கேளாய்  
நாபிக்குக் கீழென்று நவில வாகும்.”

-யுகிமுனி

Generally “Vatham” lives in,

1. Abaanan
2. Edakalai
3. Kamakodi
4. Undhiyin Keezh moolam

5. Hip region
6. Bones
7. Muscles
8. Nerves
9. Joints
10. Skin
11. Hair follicles and
12. Stools.

Physiologically “Vatham”, which has no alterations, lives in Gastro Intestinal Tract, Bones, Ear, Thigh, Hip and Skin.

### **NATURAL PROPERTIES OF VATHAM**

1. Giving briskness
2. Expiration and Inspiration
3. Functioning of the mind, thoughts and body
4. Regulation of the “Fourteen Physiological Reflexes”, (Vegam)
5. Functioning of the “Seven Udal Kattukal” uniformly
6. Protection and strengthening of the Five sensory organs.  
(Iymporigal)

### **FUNCTIONS OF VATHAM:**

1. Body ache
2. Pricking pain
3. Tearing pain
4. Nerve weakness
5. Shivering
6. Mental distress
7. Dryness
8. Movements
9. Weakness
10. Joints pain

11. Traumatic pain
12. Dislocation of joints
13. Weakness of organs
14. Pilo-erection
15. Paralysis of limbs
16. Polydypsia
17. Severe pain in calf and thigh muscles
18. Bony pricking pain
19. Anuria and constipation
20. Unable to do flexion and extension of the limbs
21. All tastes to be like astringent
22. Excess salivation and
23. Darkness of skin, eyes and urine.

**QUALITY OF VATHAM:**

Own Qualities

- |              |   |          |
|--------------|---|----------|
| 1. Kadinam   | - | rough    |
| 2. Varatchi  | - | dry      |
| 3. Elesu     | - | light    |
| 4. Kulirchi  | - | cold     |
| 5. Asaidhal  | - | unstable |
| 6. Anuthuvam | - | subtle   |

Opposite Qualities

- |            |   |          |
|------------|---|----------|
| 1. Mirudhu | - | soft     |
| 2. Pasumai | - | unctuous |
| 3. Paluvu  | - | heavy    |
| 4. Akkini  | - | hot      |
| 5. Sthiram | - | stable   |
| 6. Katti   | - | solid.   |

## RELATION WITH TASTE

The tastes, which increase 'Vatham' are Sour and Astringent.

“புனிதுவர் விஞ்சுங்கறி யாற்பூரிக் கும்வாதம்  
ஒளியுவர் கைப்பேறில் பித்துசீறும் - கிளிமொழியே  
காற்பினிப்பு விஞ்சிற்கபம் விஞ்சுஞ் சட்டிரதச்  
சேரப் புணர் நோயணுகாதே”

The tastes, which neutralizes Vatham, are Sweet, Sour and Salt.

“வாத மேலிட்டால் மதுரம் புளியப்பு  
சேதமுறச் செய்யுஞ் சிறையும் -ஓதக்கேள்  
காரந் துவர் கசப்பு கட்டுஞ் கவையெல்லாம்  
சாரப் பரிகாரஞ் சாற்று”

- கண்ணுசாமியம்

## RELATION WITH FIVE ELEMENTS:

Vatham - Air + Sky  
Pitham - Fire  
Kabam - Water + Earth

Vatham has “Air” and “Sky” as its elemental constituents. If “Air” and “Sky” or any one of them is decreased (or) increased from the normal level, it will surely lead to pathological state of vatham.

Regarding diet, bitter, pungent and astringent tastes contains “Air” and bitter alone contains “Sky”. So if these are consumed in large amounts results in the vitiation of vatham and eventually vatha disease.

The six tastes and their constituent elements are as follows.

1. Sweet = Earth + Water
2. Sour = Earth + Fire
3. Salt = Water + Fire
4. Bitter = **Air + Sky**
5. Pungent = **Air + Fire**
6. Astringent = Earth + **Air**

### THREE PHASES PRAPAKAM (METABOLISM)

PRAPAKAM (METABOLISM)	THODAM	TASTE	FUNCTION
Inippu	Kabam	Sweet	Moistening of Food
Pulippu	Pitham	Sour	Conversion of Food
Kaarppu	Vatham	Pungent	Absorption and separation of food

### ALTERATIONS OF VATHAM

Vatham is specialized in Aadi, Aavani, Purattasi, and Iyppasi Physiologically.

The three humours are affected either themselves or with Udal Thaadukkal, pathologically.

The type of alterations of Vatham are:

#### 1. Thannilai Valarchi (தன்னிலை வளர்ச்சி)

Definition : A kutram, which is provoked in its own location is called “Thannilai Valarchi”.

Limitation: Hatredfulness of the things which are causing Thannilai Valarchi and likeness of the things which are getting opposite properties are the limitations of “Thannilai Valarchi.”

Duration : Vatham gets “Thannilai Valarchi” during Mudhuvēnil Kaalam (Aani and Aadi).



## 2. Vetrunilai Valarchi (வேற்றுநிலை வளர்ச்சி)

Definition : A Kutram, which is provoked to other locations is called “Vatrunilai Valarchi.”

Limitation : Signs and symptoms of the affected kutram and the pathological conditions of the Udal Thaadhukkal give the details of the limitations.

Duration : Vatham gets “Vetrunilai Valarchi” during kaar Kaalam (Aavani and Purattaasi).

## 3. Thannilai Adaidhal (தன்னிலை அடைதல்)

Definition : A provoked kutram, which is neutralizing in its own property is called Thanilai Adaithal

Duration : The provoked Vatham neutralizes during koodhir kaalam (Iyppasi and karrthigai)

## FACTORS WHICH ALTER VATHAM

1. When hot foods are mixed with vatham, “Vatham” gets Thanniliai Valarchi”.
2. When cold is mixed with Vatham, “Vatham” gets ‘Vetrunilai valarchi’.
3. And when oily foods with hotness are mixed with Vatham. “Vatham” neutralizes in its own property that means healthy conditions.

“ வாயுவின் குணத்துடன் சூடணுகில்  
வாயுவினி டங்களில் நோய்களுண்டு  
வாயுவில் குளர்ச்சிதான் கூடிடலே  
வந்திடும் நலிகளும் வேறிடத்தே  
வாயுவில் அனல்தரும் நெய்ப்பமைந்தால்  
வாயுவும் அடங்கிடும் வாய்மையிது  
வாயுவின் பிணிகளைப் போக்கிடவே  
வகுத்திடும் முனிமொழி கண்டிடுமே.”

- சித்த மருத்துவாங்க சுருக்கம்

## **DESCRIPTION OF VATHAM:**

The siddha classical texts divide the general principles of Vatham into ten subsidiary forms that differ from one another by their localization in the body (Anatomical) and by their particular functions (Physiological). They are

### **1. PRAANAN : (Heart Centre)**

It corresponds to the Cardiac plexus and refers to the chest. It maintains the action of the heart, the functioning of the mental faculties of perception and concentrations and also cares for the arteries, veins and nerves. It regulates the respiration and digestion. It is otherwise called as “Uyirkkaal”.

### **2. ABAANAN (Moolaadharam Centre)**

It corresponds to the pelvic plexus and controls the excretion. It is focussed in the lower part of the gut and also occupies the sites in the bladder and genitals. It has a tendency to travel downwards. It moves in the whole Genito Urinary Tract and regulates the defaecation, micturition, menstruation, parturition and ejaculation. It is otherwise termed as “Kezhnökkumkaal”.

### **3.VIYAANAN: (Fore head Centre)**

It corresponds to the naso ciliary plexus at the root of the nose and base of the skull and controls the will. It helps in the circulation of energy throughout the entire nervous system and the movements of various parts of the body. It also transports nutrients and blood throughout the entire body. It is also known as “Paravukaal.”

### **4. UDHAANAN: (Throat Centre)**

This corresponds to the pharyngeal plexus in the throat region and controls speech and breathing. It is also responsible for the physiological reflex actions like vomiting, hiccup, cough, etc., It has the tendency to travel upwards. It is otherwise named as “Melnökkukaal.”

## **5.SAMAANAN: (Navel Centre)**

It corresponds to the solar plexus in the navel region and controls digestion. It selects the useful substances from the swallowed food and supplies them to the whole body. It balances the other ‘Vayuss’ it is also called “Nadukkaal.”

## **6. NAAGAN:**

It is responsible for the intelligence of an individual, winking, singing and pilo erection.

## **7. KOORMAN:**

It is responsible for yawning, closing of mouth (immovable of lower jaw) winking, shedding of tears, vision and opening of the eyes.

## **8. KIRUGARAN:**

It is responsible for salivation and nasal secretion. It helps in digestion and meditation. It produces cough and sneeze.

## **9.DHEVATHATHAN:**

It is responsible for laziness, lassitude, to quarreling arguing, begging and also for much anger. It helps movements of the eyeball in various directions and is present in genital and anal region.

## **10. THANANJEYAN:**

It is present in nose and responsible for swelling of the body and tinnitus. It leaves from the body by blowing up the cranium only on the third day after death.

## **BEHAVIOURAL CHARACTERISTICS OF VATHA DHEHI**

- |  |   |  |
|--|---|--|
| 1. Performs activity                       | - | Very rapidly                                 |
| 2. Motivated enthusiastic<br>and excitable | - | Very easily                                  |
| 3. Moods                                   | - | Change quickly                               |
| 4. Learns                                  | - | Very quickly and easily                      |
| 5. Quality of mind                         | - | Quick, creative and imaginative but restless |

- |                                  |   |  |
|----------------------------------|---|--|
| 6. Memory                        | - | Good, short term   |
| 7. Digestion                     | - | Inconsistent varies between weak and strong                  |
| 8. Appetite                      | - | Variable   |
| 9. Quantity of food eaten        | - | Variable   |
| 10. Taste preference             | - | Sweet, Sour, and salty                                       |
| 11. Thirst                       | - | Varies   |
| 12. Food                         | - | Warm, Moist Foods  |
| 13. Drink Preference             | - | Hot.   |
| 14. Frequency of bowel movements | - | Irregularly  |
| 15. Consistency of faeces        | - | Hard, Dry, Stools  |
| 16. Perspiration                 | - | Moderate   |
| 17. Sexual desire                | - | Less   |
| 18. Amount of sleep              | - | Usually 5-6 hours  |
| 19. Quality of sleep             | - | Light, easily interrupted                                    |
| 20. Type of dreams               | - | Fear, Flying, Running, Jumping climbing trees and mountains. |
| 21. Response to challenge        | - | Uncertain, worried and indecisive                            |
| 22. Speech                       | - | Fast, omitting words and digressing                          |
| 23. Gait                         | - | Fast, with a light step.                                     |

### **PHYSICAL CHARACTERISTICS OF VATHA DHEHI**

- |                                |   |   |
|--------------------------------|---|---|
| 1. Shape of Face               | - | Thinbody, and elongated plain looking                 |
| 2. Complexion                  | - | Dark, brownish or Black                               |
| 3. Involuntary bodily movement | - | Twitching, jerking and fine tremors                   |
| 4. Body weight                 | - | Light and below normal                                |
| 5. Build                       | - | Lean, thin, tall or short.                            |
| 6. Texture or Quality of skin  | - | Dry, coarse, rough, cracked or scaling and birthmarks |

- 7. Skin - Dry
- 8. Body temperature - Low, cold extremities
- 9. Stamina - Short
- 10. Shape and quality  
of eyes and lashes - Small bulging and deep set with thin scanty eye lashes.
- 11. Characteristics of eyes - Dry, frequent blinking
- 12. Teeth - Very small or protruding crooked, easily cracked
- 13. Nails - Short, rough, brittle, dark and lustreless.
- 14. Lips - Dark, dry, and cracked
- 15. Size and shape of  
fingers - Very short or very long stubby and thick
- 16. Colour and texture  
of hair - Thin, Coarse, dry and wiry, darker in color or balding.
- 17. Body hairs - Scanty
- 18. Joints - Loose or rigid Pronounced crack and pop.
- 19. Veins - Prominent or branching close to surface
- 20. Chest - Long, sunken thin ribs easily visible.
- 21. Body odour - Little or no smell or perspiration
- 22. Tongue - Dark, brownish, thick, rough and cracked on the sides.

## **AETIOLOGY OF VATHA DISEASES:**

The aetiological factors for all types of vatha diseases including “Saganavatham” have been described generally in “Yoogimunivar vaithya sindhamani perunool-800” and agasthiyar Kanma Kaandam-300”.

In Yoogi munivar Vaidhaya Sindhaamani – 800

1. Breach of trust.
2. Abusing from the pious elderly people and priests.

## **THE FEATURES OF EXAGGERATION OF VATHAM**

1. Body weakness and darkness
2. Liking to eat hot foods
3. Shivering
4. Abdominal distension
5. Constipation
6. Diminution of immunity
7. Giddiness
8. Insomnia
9. Laziness

## **THE FEATURES OF DIMINUTION OF VATHAM**

1. Body ache
2. Hoarseness of voice
3. Loss of memory
4. Semi consciousness
5. Difficulty to do any work
6. Paleness and coolness of body
7. Excessive salivation
8. Heaviness of body
9. Anorexia
10. Cough, sleep and abdominal distension

## CLASSIFICATION OF VATHA DISEASES:

Various siddha texts gives different classifications of Vatha diseases as follows:

SI.No.	Name of the siddha Test	Types
1.	Agasthiyar -2000 எண்பது வாதமாக மிருவகைப்படுத்திக் கண்ணின் நண்பறு அரைக்குமேலே நார்பது வாதமாகும் பண்ணேரரைக்குக் கீழே பத்து நான்காகுமென்று வண்டுசேர் குழலினாளே வாதத்தின் கூறுதாளே	80
2.	Agasthiyar Gurunaadi – 235	84
3.	Agasthiyar Rathina Surukkam – 500 “மற்றமே வாதரேகம் வகை எண்பத்து நாலே”	84
4.	Ashtaanga Sangiragam	85
5.	Bohar Vaidhiyam – 700 “வாச்சென்ற வாதம் எண்பதுவும் போகும்”	80
6.	Jeeva Rakshaamirdham	80
7.	Noi Naadal and Noi Mudhal Naadal – part II	85
8.	Thanvandhiri Vaidhiyam	80
9.	Theraiyar Vaagadam	81
10.	Yogi Vaidhya Sindhaamani Perunool – 800 “என்னவே வாதமது எண்பதாகும்”	80
11.	Yogai Vaidhya Sindhaamani Perunool -800 “ஆமப்பா வாதம் மெண்பத்து நாலு அதனுடைய குண குணங்க லடங்கலாக”	84

## CLINICAL FEATURES:

The signs and symptoms of Vatha diseases have been given in many siddha classical text books as follows:

### 1. In Agasthiyar - 2000

“வாதத்தின் குணமேதென்னில் மயக்குந்தியெங்கும் மலர்சிவக்கும்  
பாதங்குளிர்ந்து சருவாகம்பற்றி நடக்குமுகம் கடுக்குஞ்  
சீதத்துடனே வயிறுபுண்ணாஞ் சிரிப்பித் ததுந்தெறி மூச்சாம்  
பேரத்த தண்ணீர்தான் வரங்கும் புகழும் பஞ்ச குணமாமே”

1. Giddiness
2. Stabbing pain in the face
3. Redness of eyes
4. Peptic Ulcer
5. Abdominal distension
6. Joint pain in upper and lower limbs
7. Numbness in the limbs
8. Oliguria,
9. Drowsiness and
10. Chillness of body

### 2. Agasthiyar Naadi:

“சொல்லவே வாத மது மீறிற்றால்  
சேர்வடைந்த வாயு வினாள் தேகமெங்கும்  
மேல்ல கைகால் அசதி யுண்டாகும்  
மேய்முடங்கும் நிமிரவொண்ணாத திமிர் உண்டாகும்”

- அகத்தியர் நூடி

1. Weakness of the limbs
2. Sluggishness,
3. Stiffness and
4. Numbness



### 3. THERAIYAR VAAGADAM:

“வாதவீறு அன்னமிறங்காது கடுப்புண்டாம் வண்ணமுண்டாம்  
மோது கட்டுரோகம் சுரமுண்டா மிருமலுமர முறங்காடுதன்றும்  
ஓதுசூரிய வாதமனலாகு நடுக்கமுண்டாம் பொருள்களாய்த்  
தீதெனவே நரம்பிசித்து சந்துகள்தோறும் கிடுக்குந் தானே”

- தேரையர் வாகடம்

1. Loss of appetite,
2. Backache,
3. Fever,
4. Cough
5. Sleeplessness,
6. Shivering and
7. Pain in joints

“தக்கவாயு கோபித்தால் சந்துவுளைந்து தலைநோவா  
மிக்கமூரி கொட்டாவிவிட் டங்கெரியு மலங்கட்டும்  
ஓக்கநரம்புதான் முடனங்குமுலர்ந்து வாய்நீ ழூறிவரும்  
மிக்ககுளிரும் நடுக்கமுமாய் மேனிகுளறி வருங்காணே”

- பாடல் 42

1. Pain in the joints
2. Headache,
3. Excessive yawning,
4. Constipation,
5. Burning sensation of the body,
6. Paralysis,
7. Excessive salivation,
8. Chillness and
9. Tremor

## **MUKKUTRA VERUPAADUGAL (Pathogenesis)**

1. By any one or other etiological factors, Vatham is vitiated first.
2. Then it affects the other dhoshams pitham and kabam which are in three dhosa equilibrium.
3. And then the ten Vayus, seven udarkattugal and other structures are also affected according to the severity of the illness.
4. By the affection of 'piranaan' wheezing, cough, dyspnoea, nasal congestion and indigestion may occur.
5. By the vitiation of 'Abaanan' Constipation, oliguria and menstrual disorders may occur.
6. By the affection of 'Udhaanan' heart, chest, mouth and eyes are affected and hiccup, vomiting and heart burn are formed.
7. By the vitiation of 'Viyaanan' muscle wasting, loss of sensation, giddiness, coma, body ache, numbness, itching and tingling sensation are formed.
8. By the affection of 'samaanan' disturbances of other vayus abdominal distension, anorexia malnutrition and indigestion may occur.
9. When 'Saaram' is affected anorexia, laziness, lassitude, weakness and dryness of skin are formed.
10. When 'Senneer' is affected nerve weakness, dryness, mental disorders, haematuria, jaundice, anaemia, anorexia, splenomegaly and skin diseases may occur.
11. When 'Oon' is affected muscle wasting, dropsy, body ache, edema and weakness of five sensory organs are formed.
12. When 'kozhuppu' is affected body debility, body ache, joints pain, splenomegaly and tiredness may occur.
13. When 'Enbu' is affected arthritis, joint pain, osteophyte formation and other bone disease are formed.

14. When 'Moolai' is affected blurring of vision, ulcers, heaviness of the body and bone diseases may occur.
15. When 'sukkilam' is affected lustfulness, urinary calculus, bleeding during coitus, orchitis and diseases of genitalia are found.
16. When 'Pitham' is affected anorexia, anaemia, indigestion, blurring of vision, dryness and darkness of skin, 'vomiting, giddiness, burning sensation of the body and difficulty to do works are formed.
17. When 'Kabham' is affected respiratory disorders, indigestion tastelessness, burning sensation of eyes and joint diseases may occur.

In Vaadha diseases Abaanan, Viyaanan, Samaanan, Naagan, Koorman, and Dhevathatan are affected generally. Saaram, seneer, Oon, Kozhuppu, Enbu, and Moolai are also affected one by one.

### **NAADINADAI**

In Vaadha diseases, the following stages of naadi are noted generally

1. Exaggeration of Vaadha naadi,
2. Vaadha pitha thondha naadi,
3. Vaadha kaba thondha naadi,
4. Kaba Vaadha thondha naadi and
5. Kaba pitha thondha naadi.

## SAGANA VATHAM

### DEFINITION:

Saganavatham is one of the vatha disease described in ‘Yugi Vaidhya Sindhamani -800’. It is a condition dealing with the involvement of the neck which is identical to the cervical spine, comprising the symptoms of pain in the nap of the neck, radiating pain in the upper limbs, feeling of heaviness of the body, mental depression, giddiness, burning sensation of the eyes and constipation.

### Aetiology:

The common aetiological factors for all types of Vatha diseases including “Saganavatham” have been described generally in Yoogi Vaidhya Sindhamani -800, Agasthiyar kanma kaandam – 300 and Agastthiyar Gunavagadam

#### 1. In Agasthiyar Gunavagadam:

“தொல்லை செய்ய இன்னும்வெகு வாதநோய்கள்  
தொல்லுலகில் மாந்தருக்குக் காண்பதுண்டு  
எல்லையில்லை வாதநோய் நேர்மைதன்னை  
இயல்பாக அறிந்திடவே விபரங் கேளே”

“விவரமடா அசதிசன்னி மூளை நோவு  
விளிவான மூளையது மிருதுவாகி  
இவனிதனில் திடமாகப் போவதாலும்  
அப்பனே முத்திரக் குண்டிக்காய் வியாதியாலும்  
தவமுனிவர் தீர்க்கக்கை மேகரோகம்  
தன்மையுள்ள முத்தண்டுக் கொடி வியாதி  
அவமிலாப் பரிசு நரம்பழுத்தங்கண்டாய்  
அணுகுமடா வாதநோய் ஆகும்பாரே”.

“அணுகுமடா மாமிசத்தின் வியாதியாலும்  
அப்பனே சூதகத்தின் பெருக்காலும்  
குணமில்லா இரசம் வங்கம் தின்னலாலும்  
குடிக்கெடுத்த வாதமது உண்டாமப்பா”

-அகஸ்தியர் குணவாகடம்

1. Brain diseases
2. Renal disorders
3. Sexually transmitted disease
4. Disease of the vertebral column & spinal cord
5. Menorrhagia
6. Take im-proper prepared medicine of mercury and lead will cause Vatha disease.

**In Agasthiyar Kanma kaandam -300**

“நூலென்ற வாதம் வந்தவகை தானேது  
 துண்மையாய்க் கன்மத்தின் வகையைக் கேளு  
 காலிலே தோன்றியது கடுப்ப தேது  
 கைகாலில் முடக்கியது வீக்கமேது  
 கோலிலே படுகின்ற விருட்ச மான  
 குழந்தை மரந்தன்னை வெட்டல்மேல் தோல்சீவல்  
 நாலிலே சீவசெந்து கால் முறித்தால்  
 நல்ல கொண்பு தழை முறித்தல் நலித்தல் தானே”

-பாடல் 56

1. Cutting the trees
2. Breaking the legs of living animals
3. Cutting the branches and leaves of living trees

In **Yoogi Vaidhya Sindhaamani**, the following causes are given as follows:

“தானென்ற கசப்போடு துவர்ப் புறைப்பு  
 சாதகமாய் மிஞ்சுகிலும் சமைத்த வண்ணம்  
 ஆனென்ற வறறினது புசித்த லாலும்  
 ஆகாயத் தேறலது குடித்தாலாலும்  
 பானென்ற பகலுறக்க மிராவிழிப்பு  
 பட்டினியே மிகவறுதல் பார மெய்தல்  
 தேனென்ற மொழியார் மேற்சிந்தை யாதல்  
 சீக்கிரமாய் வாதமது செனிக்குந் தானே”

-பாடல் 244

“பகரவே வாதமது கோபித் தப்போ  
 பண்பாக பெண்போக மதுதான் செய்யில்  
 நகரவே வெகுதூர வழி நடக்கில்  
 நளிர்ரான கற்றுமே பனிமேற் பட்டால்  
 மிகரவே காய்கள் கனிகிழங்கு தன்னை  
 மிகவருந்தி மீறியே தயிர்தான் கொண்டால்  
 முகரவே முதுகெலும்பை முறுக்கி நொந்து  
 முழங்காலும் கணைக்காலும் கடுப்பு உண்டாமே”

- பாடல் 285

1. Consumption of bitter, astringents, pungent foods excessively.
2. Eating previously cooked food
3. Drinking polluted water
4. Changing sleep rhythm
5. Excessive starvation
6. Lifting heavy objects
7. Excessive lust
8. Walking long distance
9. Living in chill environment
10. Excessive consumption of tubers, fruits, curd etc.

Kanma Vinai is also implicated in the aetiology of vatham.

The aetiological factors are as follows,

“நூலென்ற வாதம் வந்தவகை தானேது  
 துன்மையாய்க் கண்மத்தின் வகையைக் கேள  
 காலிலே தோன்றியது கடுப்ப தேது  
 கைகாலில் முடக்கியது வீக்கமேது  
 கோலிலே படுகின்ற விருட்ச மான  
 குழந்தை மரந்தன்னை வெட்டல்மேல் தோல்சீவல்  
 நாலிலே சீவசெந்து கால் முறித்தல்  
 நல்ல கொண்பு தழை முறித்தல் நலித்தல் தானே”

-அகத்தியர் கன்ம கண்டம்

“என்னவே வாதந்தா னெண்பதாகும்  
 இகத்திலே மனிதர்களுக் கெய்யுமாறு  
 பின்னவே பொன்னதனையே சேரஞ்செய்து  
 பெரியோர்கள் பிராமணரைத் தூடனித்தும்  
 வன்ன தேவச் சொத்தில் சேரஞ்செய்து  
 மாதாபிதா குருவை மறந்த பேர்க்கும்  
 கன்னவே நிந்தை செய்தால்  
 காயத்திற் கலந்திடுமே வாதந்தானே”

-யுகி வைத்திய சிந்தாமணி 800

“ஆனான வரன்றனையே மதியாமாந்தர்  
 அகதி பரதேசியர்கட் கன்ன மீயார்  
 கோனான குருமொழியை மறந்த பேர்கள்  
 கொலை களவு பொய்காமங் குறித்த பேர்க்கு  
 ஊனான சடந்தன்னில் வாதம் வந்து  
 உற்பலிக்கும் வேதத்தின் உண்மைதானே”

-யுகி வைத்திய சிந்தாமணி 800

1. Cutting trees, tree bark, tender leaves
2. Breaking legs of animals
3. Breach of trust
4. Abusing elderly and priest
5. Exploitation of charitable properties
6. Ingratitude with mother, father and gurus
7. Irrespective attitude with god
8. Refusing food for destitutes and hermits
9. Involvement in murder theft, lustfull activities

In **Agasthiyar Gunavagam** the following causes are given,

“தன்மையள்ள முத்தண்டுக் கொடி வியாதி  
அவமிலாப் பரிசு நரம்பழுத்தங் கண்டாய்  
அணுகுமடா வாதநோய் ஆகும்பாரே  
அணுகுமடா மாமிசத்தின் வியாதியாலும்  
அப்பனே சூதகத்தின் பெருக்காலும்  
குணமில்லா இரசம் வங்கம் தின்னலாலும்  
குடிகெடுத்த வாதமது உண்டாமப்பா”

- அகத்தியர் கன்ம கண்டம்

1. Diseases of the vertebral column and spinal cord
2. Diseases of muscles
3. Menorrhagia
4. Mercury poisoning
5. Lead poisoning

#### **Alteration of Udal Vanmai:**

Udal vanmai is described as Iyarkai vanmai, cheyarkai vanmai and kaala vanmai.

1. Iyarkai Vanmai is considered with three Gunangal (Sathuva, Raso, Thamo Gunam)
2. Kaala Vanmai is considered with Age and Season. Most of the vatha diseases occurs in old age because the kaala vanmai is diminished in old age.
3. Changes in cheyarkai Vanmai also plays a major role. Wrong postures, sedentary life style and improper foods, disturb cheyarkai vanmai and causes the Sagana vatham.

#### **Pathology:**

When there is changes in lifestyle, occupation, food and habitates, there is no way for the development of disease. When any one of them is altered it causes derangement of micro elements in the body (panchapoothangal), Improper food habits directly alters the elemental



composition while other acts also cause derangement of these elements indirectly.

When elemental composition is altered naturally, uyir thaathugal of the three humours which are made up of these elements get deranged. This simultaneously leads to derangement of seven udal thathukkal and produces symptoms.

The aetiological factors for Sagana vatham are both diets that produce excessive vayu and other agents cause vitiation of vayu, aahayam. Depending upon the type of agent, those are vitiated to affect the corresponding uyir thaathu. Here vali and aahayam constitute vatham, earth and water correspond to kabam and fire corresponds to pitham. So vatham, pitham and kabam are deranged. Simultaneously udal thathukkal get deranged. These even give rise to clinical features of Sagana Vatham.

In the uyir thaathu vatham, due to the derangement of, vianan – pain in the cervical and dorsal spine, pain along the upper limbs pain like scorpion sting and heaviness of the body. Due to the derangement of abanan leads to constipation.

Involvement of Uthanan leads to cough with expectoration. Involvement of Samaanan leads to indigestion and imbalance of functions of other vayus. Involvement of Naagan leads to sluggishness and mental depressions and of koorman leads to diminished vision and devathathan affects the normal sleep rhythm.

In Sagana vatham, the saathaga pitham is also affected with vatha. It produces the features like mental depression and difficulty in performing regular duties because of the pain in the neck and upper limbs.

In kabam, Tharpagam and santhikam are affected. The Tharapagam derangement produces burning sensation in eyes and the santhikam

derangement produces pain and stiffness in the neck (cervical joints) rendering the movements difficult.

Simultaneously along with uyir thathus there is derangement of Saaram, Senner, Oon, Kozhuppu and Enbu. The whole events constitute the clinical condition Sagana Vatham.

**Clinical features:**

The signs and symptoms of Sagana vatham described in Yoogi Vaithya Sinthamani and parasasekaram by the following verses.

“கேளுமே கழுத்தின் கீழரைக்கு மேலும்

கெடியான கரமிரண்டு மிகவே நொந்து

வாளுமே சரீரமெல்லாங் கனத்திருக்கும்

வாலிபர்க்கு மனங்கண்ணு மயக்கமாகும்

ஏளுமே இரண்டு கண்ணும் எரிச்சலுண்டாம்

ஏற்றமாய் மலந்தனும் இறுகிக் காணும்

தேளுமே கெட்டினது போற் கடுக்கும்

சேகனவளி நோயினூட தீர்கந்தானே”

-யுகி வைத்திய சிந்தாமணி

“கண்டதோர் சிகன்ன வாதங் கழுத்தின் கீழரைக்கு மேலும்

மிண்டலங் கரமிரண்டு மிக நொந்து கனத்திருக்கும்

மண்டியே திமிர்த்துக் குத்தும் வலி மிகுத்துளைவுண்டாகும்

வண்டமர் குழலினாளே மதியினாலுன்னுவாயே”

-பரராசசேகரம்

1. Pain in the neck
2. Radiating pain to the shoulders and upper limb
3. Heaviness of the body
4. Mental depression
5. Giddiness
6. Burning sensation of the eyes
7. Constipation
8. Pain like scorpion sting
9. Tingling sensation and numbness of the upper limbs.

## **PINIYARIMURAIMAI (Diagnosis)**

It is very important part of the treatment. It is helpful to select the correct line of treatment and good prognosis. It is based upon the following diagnostic methods.

### **1) PORIAAL THERTHAL**

The physician should examine the patient's porigal by his porigal.

1. Mei: Feels all types of sensations
2. Vaai: For knowing taste
3. Kan: Meant for vision
4. Mooku: For knowing the smell
5. Sevi: For hearing

### **2) Pulanaal Arithal:**

The physician should examine the patient's pulangal (Functions of the sensory organs)

1. Ooru - Perception of sensation
2. Suvai - Perception of taste
3. Oil - Perception of vision
4. Nattram - Perception of smell
5. Oosai - Perception of sound

In case of saganavatham pain in the cervical region that radiates either one (or) both upper limbs and numbness over the both upper limbs, shows that ooru is affected.

### **3. VINADHAL (Interrogation)**

The physician should interrogate about the patient's name, age, occupation, native, socio- economic status, dietetic habits, prone to any allergens, complaints, history of previous illness, history of past illness and frequency of attacks. If the patient is unable to speak, or is a child physician should interrogate the details with his immediate relatives who are taking care of him.

#### 4. ENNVAGAI THERVUGAL

The prime method adopted to diagnose the disease is by means of “Ennvagai thervugal”. The value of ennvagai thervugal is very important for diagnosing purposes, which is the unique and special method described in siddha system of medicine.

“ நாடிப் பரிசம் நா நிறம் மொழி விழி  
மலம் மூத்திரமிவை மருத்துவராயுதம்”

- தேரையர்

“மெய்க்குறி நிறத்தொணி விழி நாவிருமலம் கைக்குறி”.

**Hence the makes the diagnosis.**

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

#### 1.NAADI (PULSE)

The study of Naadi is the important factor in ‘Ennvagai thervugal’ which gives almost the correct diagnosis. Naadi may be studied at ten places in the body, which are Heel, Genital organ, Abdomen, Chest, Ear, Nose, Neck, Hand, Eyebrow and Vertex. But the study of naadi of hand is the best because the radial artery is located superficially. The unique factor which pertaining the soul in the body is known as ‘Naadi’. ‘Naadi must be studied in right hand for men and left hand for women. The three Uyir thaadhukkal are formed by the combination of

Edakalai + Abaanan - Vaadham

Pinkalai + Piraanan - Pitham

Suzhumunai + Samaanan – Kabam

The naadi can be felt one inch below the wrist on the radial side by means of palpation and percussion with the tip of the index, middle and ring finger corresponding of Vatham, Pitham and Kabam respectively.

The three humours exist in the ratio of 1:1/2:1/4 normally. Derangement of this ratio leads to various diseases.

“கரிமுகனடியை வறழ்த்தி  
கைதனில் நுடி பரக்கில்  
பெருவிரலங் கலத்தில்  
பிடித்தடி நடுவே தொட்டால்  
ஒரு விரலோடல் வாதம்  
உயர் நடுவிரலில் பித்தம்  
திருவிரல் மூன்றிலோடல்  
சிலேத்தும நுடிதானே”

In cases of vatha diseases the following stages of Naadi are seen.

### Naadi:

1. “வாதமெனும் நுடியது தோன்றில்  
சீதந்தமொடு வயிறு பொருமல் திரட்சிவாயு  
சீதமுறுங் கிராணி மகோதரம் நீரமை  
திரள்வாயு சூலைவலி கடுப்புத் திரை”

- சதகநாடி

2. “சொல்லவே வாதமது மீறிற்றானால்  
சோர்வடைந்த வாயுவினால் தேகமெங்கும்  
மெல்ல கைகால் களசதியுண்டாகும்  
மெய்முடங்க நிமிரவொண்ணாத் திமிருண்டாகும்”

- அகத்தியர் நாடி

“காண்பா வாதமீறில் கால்கைகள் பொருந்தி நோகும்”

- காவிய நாடி

### Vatha Pitha Naadi

“பொருளான வாதத்தில் பித்தஞ் சேர்ந்து

.....  
கருவான தேகமதிலுளைச்சல் சோம்பல்  
கைகால் தறிப்பு.....”

.....ஊன் குறைதல்

- சதகநாடி

“திருத்தமாம் வாதத்தோடே தீங்கொடு பித்தஞ் சேரிற்  
பொருந்துகள் தோறும் நொந்து போதவே பிடிக்கும்”

- நோயின் சாரம்

### **Vatha Kaba Naadi**

“பாங்கான வாதத்தில் சேத்தும நாடி  
பரிசித்தால் திமிர்மேவு முளைச்சலாகும்”

- சதகநாடி

“வாதத்தில் சேத்துமமாகில் வலியோடு வீக்கமுண்டாம்”

- அகத்தியர் நாடி

### **Pitha Vatha Naadi**

“பித்தத்தில் வாதமாகில் பிடரியுங் காலுங் கையுங்  
குத்தது போலேயாகுங் குறுகி மெய்பதறும் பின்னே”

- அகத்தியர் நாடி

### **Pitha kaba Naadi**

“பித்தத்தில் சேத்துமமாகில் வாய்குளறுமிகக  
.....

பித்தமுமெடுத்துக் கொட்டிப் பிடரியில் நோவதாமே”

- அகத்தியர் நாடி

### **Kaba Vatha Naadi**

“கண்டாயே சிலெற்பனத்தில் வாதநாடி  
கலந்திடுகில் வயிறுபொருமல் கனத்தவீககம்  
உண்டாலே ஓங்காரஞ் சத்தி விக்கல்  
உறுத்திரட்சை வாய்வுவலி சன்னினதோடம்”

- சதகநாடி

“வாட்டிடுஞ்ச சேத்துமத்தில் வந்திடும் வாதமாகில்  
நாட்டிய கால்கள் போல நரம்பெல்லாம் வலித்து நிற்கும்”

- அகத்தியர் நாடி

In all sagana vatham patients Vatha, Pitha, Thondha naadi was noted.

## **Sparism**

By sparism the temperature of the skin, smoothness of roughness, sweat, dryness, hard patches, swelling, abnormal growth, tenderness and nourishment can be felt.

In Saganavatham there was tenderness in the cervical region for all the patients.

## **Naa : (Tongue)**

Examination of the tongue for its colour, coating dryness, deviation, sensory changes, ulcer, conditions of the tooth and gums are noted.

## **Niram (Colour)**

Colour indicating vatha, pitha, kaba and thridhosas. Yellow or pallor or redness of the skin, bluish discolouration of the face, conjunctiva can be noted. There was no specific abnormality in niram.

## **Mozhi:**

Clarity of speech, or any disturbance, loud voice, slurring, crying, talks induced by hallucination, undue argument can be made out.

Mozhi was normal in all sagana vatham cases.

## **Vizhi:**

Any abnormal colour change indicating thridhosa derangements, pallor, excessive lacrimation and accumulation of secretion at the angles of the eye, sub conjunctival bleeding, closure of the eye lids, visual disturbance, any specific disease of the eyes can noted. The study did not find any abnormality here.

## **Malam:**

Nature, quantity, colour, odour, froth and abnormal consistency are noted.

## Moothiram:

The examination of urine is classified into two types. They are Neerkuri and Neikuri.

“அருந்துமாரிரதம் அவிரோதமதாய்  
அ.:கல் அலர்தல் அகலவண்ண தவிர்ந்தழற்  
குற்றளவருந்தி உறங்கி வைகறை  
ஆடிக்கலசத் தாவியே காதுபெய்  
தொரு முகூர்த்தக் கலைக்குட்பகு நீரின்  
நிறக்குறி நெய்க்குறி நிருமித்தல் கடனே”

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

The first voided urine is collected in a glass container and is subjected to analysis of Neerkuri and Neikuri.

### 1. Neerkuri

“வந்தநீர் கரிஎடை மணம் நுரை எஞ்சவென்  
றைந்திய லுளவளை யறைகுது முறையே”  
-தேரர் நீர்க்குறி நெய்க்குறி நூல்- சித்த மருத்துவாங்க சுருக்கம்

In Neerkuri the Niram (Colour), Manam (Odour), Nurai (froth), Edai (specific gravity) and Enjal (quantity) is noted. Apart from these, the frequency of urination, abnormal constituents such as sugar, protein etc., and sediments are also noted.

### 2. Neikuri

Neikuri is an important test to assess the predominantly affected humour.

“நிறக்குறிக் குரைத்த திருமான நீரிற்  
சிறக்க வெண்ணையேரர் சிறுதுளி நடுவிடுத்  
தென்னுறந் திறந்தொலி யோகாமைத்ததி  
நின்றதிவலை போம் நெறிவிழியறிவும்  
சென்றத புகலுஞ் செய்தியை யுணரே”



Early morning urine of the patient is collected in a glass container and examined within 1.30 hrs. A drop of gingelly oil is dropped and kept in the sunlight in a calm place. The nature of the oil drop in the urine is noted.

In the drop of oil,

1. Lengthens like a snake it indicates vatha disease
2. Spreads like a ring it indicates pitha disease
3. Appears like a pearl it indicates kaba disease

“அரவென நீண்டிடின அ:தே வாதம்”

“ஆழி பேரற் பரவின் அ:தே பித்தம்”

“முத்தொத்து நிற்கின் மொழிவதென் கபமே”

When the drop of oil shows two shapes enclosed within one another it indicates Thondha Neer.

In Siddha system of medicine, besides Ennvagai thervugal, a disease can be diagnosed by means of kanmendhiriyam, gnannendhiriyam Uyir thaathukkal, Udal thaathukkal, thinaigal and paruva kalangal.

### **1. Kanmendhiriyam:**

- 1.Kai - Works done by the hands
2. Kaal - For walking
3. Vaai - For speaking
4. Eruvai - For defaecation
5. Karuvai - For reproduction

Here kai is affected i.e., pain and numbness along both upper limbs presents.

## **2.Gnaanendhiriyam:**

The five Gnaanendhiriyam are

1. Mei - Feels all types of sensations
2. Vaai - For taste
3. Kan - For vision
4. Mookku - For smell
5. Sevi - For hearing

## **3.Uyir Thaadhukkal:**

### **1.Vatham:**

In saganavatham the following vayus are affected.

#### **a) Viyanan:**

Neck pain, restricted movement of neck, radiating pain in the shoulders, and upper limbs, tingling sensation, numbness and giddiness.

#### **b) Abanan:**

Constipation

#### **c) Samanan:**

Indigestion, imbalance in the functions of other vayu.

#### **d) Udhanan:**

cough

#### **e) Naagan:**

Sluggishness, mental depression

#### **f) Devathathan:**

Sleeplessness

**PITHAM:**

Pitham is located in Urinary bladder, Heart, Head, Umbilicus, pinkalai, Piraana, Abdomen, Stomach, Sweat, Blood, Eye and skin. It is classified into five types they are

1. Anar pitham : It digests all the ingested particles
2. Ranjaga pitham : It gives colour to the blood
3. Saadhaga pitham : It is used to complete the work properly what he thinks in the mind.
4. Alosaga pitham : It gives vision to the eye
5. piraasaga pitham : It gives color to the skin.

Saadhaga pitham is commonly affected in Sagana vatham.

**KABHAM:**

Kabham is located in Samaanan, Semen, Fat, Bonemarrow, Nose, Chest, Nerves, Bones, Brain, Large intestine, Stomach and pancreas. It is divided into five types. They are

1. Avalambagam : It controls the other four types of kabham
2. Kiledhagam : It moistens the food
3. Podhagam : It helps to know the taste
4. Tharpagam : It gives cooling effect to the eyes.
5. Sandhigam : It gives lubrication effect to the joints

In Sagana Vatham Tharpagam and Sanddhigam are affected.

**Udal Thaathukkal:**

There are seven udal thathukkal in human body, they are

1. Saaram - It strengthen the body and mind
2. Senneer - It gives power, knowledge and boldness to the mankind.
3. Oon - It gives structure and shape to the body and responsible for the movements of the body

- 4. Kozhuppu - Lubricates the joints and facilitates their functions
- 5. Enbu - Protects all the internal organs and gives structure to the body
- 6. Moolai - It is present in the bones and gives strength
- 7. Sukkilam - Meant for reproduction  
(or) Suronidham

**THINAIGAL:**

Nilam is classified into five types. They are

- 1. Kurinji : Mountain and its surroundings. Kabanoigal and liver diseases are common
- 2. Mullai : Forest and its surroundings, pitha noigal, vatha noigal, liver diseases are common
- 3. Marutham : Field and its surroundings safest place to maintain good health.
- 4. Neidhal : Sea and its surrounding, Vatha diseases and liver enlargements are common.
- 5. Paalai : Desert and its surroundings, Vatha, Pitha and kaba noigal are common.

Study of five lands is very much needed, as some diseases are common in the particular lands.

## PARUVA KAALANGAL

A year is into six seasons, each consisting of two months.

Sl.NO.	Season	Months	Kuttram
1.	Kaarkaalam	Aavani & Purattasi August 16 – October 15	Vatham ↑↑ Pitham ↑
2.	Koodhir kaalam	Ayppasi and kaarthigai October 16 – December 15	Vatham (-) Pitham ↑
3.	Munpani kaalam	Margali and Thai December 16 – February 15	Pitham (-)
4.	Pinpani kaalam	Maasi and panguni February 16 – April 15	Kabam ↑
5.	Elavenir kaalam	Chithirai and Vaigasi April 16 – June 15	Kabam ↑↑
6.	Mudhuvenir kaalam	Aani and Aadi June 16 – August 15	Vatham ↑ Kabam (-)

↑ - Thannilai valarchi

(-) - Thannilai adaidhal

↑↑ - Vetrunilei valarchi

According to alteration of kaalam (Thannilai valarchi, Vetrunilei valarchi)

The final diagnosis is confirmed by summarizing all the clinical findings observed by the above methods.

## Noi Kanippu Vivaadham (Differential Diagnosis)

Some other types of Vatha diseases resembling the symptoms of sagana vatham are mentioned. Careful and clear history taking and examination will reveal the diagnosis. They are,

1. Kanda Kiraga Vatham
2. Kumba Vatham
3. Paanikamba Vatham
4. Pei Vatham
5. Sirakamba Vatham

### 1. Kanda Kiraga Vatham

“வகையான குரலதனைப் பற்றி நொந்து  
மர்போடு பிடரிதனில் வலியுண்டாகி  
நுகரான சரீரமெல்லாம் நொந்து மூற்றி  
நுணக்கமாய் கவசமது புறப்ப டாமல்  
முகையான நாவாலே மூச்சு மறறி  
முகத்திலே வியர்வாகி விலாநோ வுண்டாம்  
புகையான வன்னத்தைப் பருகொட்டாது  
புரிய கண்ட கிரகத்தின் பண்பு தானே”.

-யுகி வைத்திய சிந்தாமணி - 800

### The Clinical features are

1. Pain in the throat, chest and occipital region
2. Anorexia
3. Breathing through mouth
4. Backache
5. Sweating on face and
6. Loss of appetite

## 2. Kumba Vatham

“நலிலவே தோள்மீதும் கரத்தின் மீது  
நலிந்து மெத்த வாகியே நசவுண்டாகும்  
கலிலவே கன்னமொடு நயனந்தானுமங்  
கடுத்துமே விறுவிறுப்பு மெரிவும் காணும்  
துலிலவே துடிப்பாகும் சிரசு தன்னிற்  
சுழற்றியே நாபிக்கீழ் வலியு முண்டாகும்  
அலிலவே அடிநாக்கி வழன்று காணு  
மலருமே வருகும்ப வாதந்தானே”

-யுகி வைத்திய சிந்தாமணி -800.

The clinical features are,

1. Burning pain in shoulder and upper limbs
2. Burning sensation in the cheek and eyes
3. Twitching over the scalp
4. Pain in the lower abdomen
5. Glossitis.

## 3. Paanikamba Vatham

“மளக்கமாய் வாய்வு மாய் மெய்நி றைந்து  
வயிறுதனிற் பசியிலா தூணு மற்று  
நளக்கமாய் ஞாலத்து நடக்கை யற்று  
நடுக்கமர் கையிரண்டுந் திமிரு முண்டாம்  
ஊர்க்கமர யுறக்கமில்லா துணர்ச்சி யற்று  
உதறியே சரீரம் எங்கு முலர்ந்து காணும்  
பளக்கமாய் வாய்விட்டு அலத்த வாகும்  
பாணிக் கம்பவாத்தின் பாங்குதானே”

-யுகி வைத்திய சிந்தாமணி -800

The clinical features are

1. Anorexia
2. Tingling sensation and numbness of upperlimbs
3. Tremor of upper limbs
4. Sleeplessness and
5. Dryness all over the body

#### 4. Peivatham

”பெற்றியாம பெருமையாக் காலும் கையும்  
பெருவயிறு நெஞ்சேரடு விரலு மூக்கும்  
ஏற்றியா மெறிகபுத்து மெங்கும் பற்றி  
ஏக்கமாய் நொந்துடன் பெங்கும் வீங்கி  
ஊற்றியா முணவே திமிர்த் தெடுத்து  
உறுதியாய்ப் பிடிக்கவு மொணாம லாகுந்  
சத்தியாய் வாய்கசந்து மயக்க மாகுந்  
தரித்திட வொண்ணாது பேய் வாதந் தானே”.

-யுகி வைத்திய சிந்தாமணி - 800.

#### The clinical features are

1. pain and swelling in neck, upper and lower limb
2. Weakness of hand muscles, difficulty in holding things in the hand
3. Vomiting
4. Giddiness and
5. Swelling all over the body.

#### 5. Sirakamba Vatham

”தம்பமாய் உதிரகண்ட நரம்பிற் புக்கித்  
தலையோடு சரீரமெலாந் தாக்கிப் புக்கும்  
கம்பமாய் காதிரண்டு மிகுவுங் கேளா  
கையோடு காலிரண்டும் வசக் கேடாகும்  
நிம்பமாய் நினைவு தான் கலங்கிக் காணும்  
நெடு மூச்சுங் கொட்டாவி நித்திரை யாகும்  
சிம்பமாய் தலைநடுங்கிக் கனப்பு முண்டாஞ்  
சிரக்கம்ப வாத மென்றே செப்பலாமே”.

-யுகி வைத்திய சிந்தாமணி -800.

#### The main clinical features are

1. Stiffness of neck
2. Deafness
3. Yawning
4. Over sleeping
5. Tremor in the head and neck
6. Difficulty in using lower and upper limbs



## Noi Neekkam (Treatment)

In Siddha system the main aim of treatment is not only for the removal of physical illness but also for the mental illness. Treatment is considered with prevention and improvement of the general body condition also.

This is said as follows

1. Kaappu - prevention
2. Neekkam - Treatment
3. Niraivu - Restoration

The general aetiological factors for constitutional discomfort are said to be improper diet, mental and physical activities.

While treating the disease, the following principles must be noted.

“நோய்நாடி நோய்முதல் நாடிஅது தணிக்கும்  
வாய்நாடி வாய்ப்பச் செயல்”.

“உற்றா னளவும் பிணியளவுங் காலமுங்  
கற்றான் கருதிச் செயல்”

- திருக்குறள்

So it is essential to know the disease, the aetiological factor, the nature of the patient, the severity of illness, the seasons and the time of the occurrence of the disease.

## Line of Treatment

The aim of Noi Neekkam is based on

1. To bring the Three Dhosas in equilibrium
2. Treatment of the disease by internal medicines and external application.
3. Diet and advices
4. Thokkanam
5. Yoga etc
6. Kanma nivarthy

The line of treatment is described as follows.

### **1. Bring the Three Dhosas in Equilibrium**

“முப்பிணி மருவி முறிவு கொள் குறிப்பை  
தப்பாதறியும் தன்மையும் வாதபித்த வையப்  
பிரிவையுமனைவதாம்  
ஏறி யிறங்கி இணைந்து கலந்து  
மகறி மகறி வருஞ்செய்கையாற் பிணி  
நேர்மையறிந்து நீட்டு மருந்தே  
சீரியதாமனைச் செப்புவர் சித்தரே”.

Since siddha system of medicine is based on the mukkuutra theory, the treatment is mainly aimed to bring down the three dhosas to its equilibrium state and thereby restoring the physiological condition of various thadus.

Vitiation of vatha is the prime factor for Sagana Vatham”.

Kalichal maruthuvam (Purgation) corrects the vitiated Vatham. The following verses reveals the importance of Kalichal Maruthuvam.

“விரேசனத்தால் வாதம் தாமும்  
ஓதுகின்ற மலக்கட்டை யொழிய வைத்தால்  
உடலிலுள்ள வாதையெலா மொடுங்கிப் பொரும்  
அறிந்திடும் வாதம் அடங்கு மலத்தினில்”

5 gm. Nilavagai churnam with hot water at bed time (or) 15 ml of Vellai Ennai with hot water was administrated at early morning as a kalichal medicine in the first day of treatment.

### **III. Diet and advices**

Diet and advices are summarized as follows.

#### **1. Pathiyam (Diet Regimen)**

During the course of treatment according to the nature of illness and the drug administered, the patient were advised to follow certain special dietary methods called “Pathiyam”. The importance of Pathiyam is clearly mentioned by the rayer as follows.

“பத்தியத்தினாலே பலனுண்டாகும் மருந்து  
 பத்தியங்கள் போனால் பலன் போகும் - பத்தியத்தில்  
 பத்தியமே வெற்றிதரும் பண்டிதருக்காதலினாற்  
 பத்தியமே உத்தியென்று பர்.”

-யுகி வைத்திய சிந்தாமணி - 800.

Three types of pathiyam are commonly told. They are kadum pathiyam, Miga kadum pathiyam, Echcha pathiyam and Uppilla pathiyam (salt free dieting) also mentioned in many ancient siddha literatures especially for the mercurial preparations of drugs.

### Vatha Roga pathiyam

“புனிதுவர் விஞ்சுங் கறியாற் புரிக்கும் வாதம்.”

-பதார்த்த குணசிந்தாமணி

i.e. Tamarind and Astringents increase vatham. So the Sangana vatham patients were advised to avoid tamarind and astringents.

In “**Padhartha Guna Chindhamani**”. The following are advised to avoid.

“கடுக நற்றிலத் தெண்ணெய் கூழ்பாண்டங்கள் கடலை  
 வடுக தாகிய தெங்கமர வருக்கை நற்காயம்  
 மடிவி லாதவெள னூள்ளிகொள் புகையிலை மதுபெண்  
 இடறு பாகலேற டகத்தி நீக்கிடலிச் சாபத்தியம்.”

இச்சாப்பத்தியத்தில் நீக்கும் பொருட்களாவன.

கடுகு	எள்ளெய்	கலியாண பூசணிக்காய்
கடலை	தேய்காய்	மாங்காய்
பலா	காயம்	பூண்டு
கொள்	புகையிலை	பெண்கள் சேர்க்கை
பாகல்	அகத்தி முதலியன.	

## Diet

In Pathartha Guna Chinthamani, the following diets are advised to Vatha Patients.

“செங்கழுநீர் கோட்டந்தேன் மிளகு நல்லெண்ணெய்  
தங்கு பெருங்காயந் தழுதாழை யெங்கெங்குங்  
கூட்டு சிறு முத்துநெய் கோதி வழந்திவைகள்  
வாட்டு மணிலத்தை மதி.”

“மாட்டுப் பறங்கிவங்க மாமுருங்கை வெள்ளவரை  
நாட்டுக்கூர்ப் பிஞ்சு நற்கருணை நாட்டுளுரை  
மா கருணை யங்கருவில் வாதத் தெழுத்து வந்த  
தே கருணை நற்கறியாந் தேர்.”

“மேனிமுன்னை யாரைநறு வேளைமணித் தக்காளி  
யானை நெருஞ்சி சினமுசுக்ககை யப்பைநெடுங் காளிபுலுறை  
முக்குறட்டை நல்வசவை முன்பிவைக விற்கீரை  
யாக்குவரவா யுத்தேகர்க் காய்ந்து.”

“சக்கர வர்த்தி வெள்ளைச் சாரடைபா கண்முருங்கை  
தொக்கவினந் தன்றறுந் தூதுணம்வாந் - மைக் சூழலே  
சீதமுறு கானயிலை செந்தளிர்க விறறினமும்  
வாததே கர்க்கிரசமும் வை.”

செங்கழுநீர்	கோஷ்டம்	பெருங்காயம்
தேன்	மிளகு	நல்லெண்ணெய்
தழுதாழை	சிறுறாமணக்கெண்ணெய்	உளுந்து
கல்யாணபூசணி	வழுதனங்காய்	வெள்ளவரக்காய்
காரக்கருணை	குப்பைமேனி	முன்னை
ஆரை	நல்வேளை	மணித்தக்காளி
யானை நெருஞ்சில்	முசுமுசுக்கை	கோவை
பசலை	கத்தரிக்காய்	முருங்கைப்பிஞ்சு
பாகல்பிஞ்சு	காட்டுக்கருணை	

## IV. Yoga Theraphy

Yoga is India's unique contribution to the world. The word “Yoga” is derived from the Sanskrit word “yuj” which means bind, join, or attach. Yoga therefore is an art which brings an incoherent and scattered mind to

a reflective and coherent state. Pathanjali is known as the father of yoga. He enumerates the means of yoga as “Astanga Yoga” or stages of yoga for the quest of the soul. They are,

- Iyama : Universal moral commandments
- Niyama : Self purification by discipline
- Asanas : Stretching static posture
- Pranayama : Rhythmic control of breath
- Prathyahara : Withdrawal and emancipation of the mind  
from the domination of senses and exterior  
objects.
- Dharana : Concentration
- Dhyana : Mediation
- Samathi : A state of superior consciousness brought about  
by profound meditation in which the individual  
aspirant becomes one with the object of his  
meditation.

Yoga has a message for the human body, mind and also for the human soul.

Therapeutic yoga is basically a system of self treatment. Yogasanas are reliable supportive therapy or sometimes plays main part of the treatment of vatha diseases. The yogasanas are useful not only to revive the body but also strengthen the nervous system, locomotor system, digestive system and regenerate the endocrine system. They bring the human body under the complete control of mind.

The following Asanas are advised to the patients to relieve from the symptoms of sagana vatham.

**1. Bhujankaasana**

- ★ Helps in keeping the dorsal spine elastic and strong.
- ★ Back ache due to over strain can be relieved.
- ★ Helps in considerable reduction of abdominal fat.

**2. Arthakadi Chakkarasana**

- ★ It gives a good lateral movement to the vertebral column and helps in keeping it flexible and healthy.

**3. Maharasana**

- ★ It gives complete relaxation to the muscles and is useful in Hyper tension, Insomnia etc.

**4. Pavanamukthasana**

- ★ To get relief from constipation.

**5. Savasana**

- ★ For sound sleep restoring mental peace.
- ★ These asanas can be done after the neck pain is reduced considerably with drug treatment.

**6. Ustrasana (The Camel pose)**

- ★ Prevents the flabbiness and relieves vertebral pressure,
- ★ Promotes spinal circulation.

**7. Dhanurasana (The Bow curve pose)**

- ★ It makes spine and back muscles flexible, removes nervous weakness.
- ★ It helps in removing constipation and pitta disorders.
- ★ Those suffering from lumbar spondylitis should not practice it.

## **8. Gomukhasana (Cow Face pose)**

- ★ This helps in making the spine straight.
- ★ This, Asana is very useful in arthritis and piles (dry).
- ★ This gives exercise to the lungs automatically.
- ★ Those suffering from bleeding piles should not practise it.

## **9. Paschimuttanasana**

- ★ Stretches the back and spine
- ★ Stretches the shoulders
- ★ Stretches the hamstrings
- ★ Beneficial for the kidneys, liver, ovaries and uterus. (It is thus a must for women. It also helps ease menstrual discomfort.)
- ★ Beneficial for diabetics and improves digestion.

### **Exercises advised for Sagana vatham:**

#### **1). Neck Bending**

##### **a).Starting Position**

- Sit with both legs straight.
- Place the palms on the floor by the side of the buttocks
- Keep the back, neck and head straight
- Close the eyes
- This is Dandasana

##### **b) Practice**

##### **Stage - I (Forward – Backward movement).**

- Slowly move the head forward and try to touch the chin to chest.
- Then move the head as far back as comfortable.
- Try to feel the stretch of the muscles in front and back of the neck and the loosening of the spine in the neck.
- Practice 10 times.

- Inhale on the backward movement and exhale on the forward movement.

### **Stage –II (Bending to Right and Left)**

- Close the eyes and face directly forward.
- Slowly bend the head to the right and ear coming to the shoulder turning the head or lifting the shoulder.
- Bring the head back to the normal position
- Then bend in to the left side and try to touch the left ear to the left shoulder in the same fashion. Lift the head to the centre
- This is one round. Practice 10 rounds
- Inhale on the upward movement and exhale on the downward movement.

### **Stage –III (Turning the head to Right and Left)**

- Keep the head upright and eyes closed.
- Gently turn the head to the right so that the chin is in line with the shoulder.
- Slowly turn the head to the left through the centre till the chin is in line with the shoulder. Bring the head to centre.
- This is one round. Practice 10 rounds.
- Inhale while turning to the front. Exhale while turning to sides.

### **c) Note : (For all the three stages)**

- Move the head as far as comfortable. Do not strain
- Keep the shoulders relaxed and unmoved
- Feel the release of tension in the neck muscles and the shoulder muscles.

### **Contra - Indications**

- Should not be performed extreme positions by elderly people
- Cervical spondylosis cases to avoid during acute pain



## **Benefits**

- These asanas release tension (accumulated especially after prolonged work at a desk), and also heaviness and stiffness in the head, neck and shoulder region.

## **Additional points to Note**

- Make the movements cautiously and slowly when there is Neck pain.
- Practice them with normal breathing
- Hold the neck in the final positions for a few moments
- If you have pain at any stage, stop in that position for a while. As you bring your complete awareness to the area of pain, start breathing consciously and deeply, then continue the movement.
- It can be practiced even while standing in Tadasana or sitting on a chair, or in Vajrasana.

## **2.Neck Rotation**

### **a) Starting Position**

- Sit in Dandasana

### **b) Practice**

#### **Stage –I (Half Rotation)**

- Relax the head bending forward
- Bring the right ear to the right shoulder in a circular way.
- Bring the left ear to the left shoulder in a circular bending the head forward.

Now relax the head forward again in a circular way and finally lift the head to normal position. This is one round.

Repeat 10 rounds clockwise and 10 rounds anti – clockwise with breathing.

### **Stage -11 (Full Rotation)**

- Relax the head forward trying to touch the chin to the chest.
- Slowly rotate the head in as large a circle as possible, keeping the chin tucked in.
- Practice 10 rounds clockwise and 10 rounds anti- clockwise while breathing normally.

### **3. Note**

- In both cases (Half and full Rotations) you may take about one minute or even longer for one cycle. Allow normal breathing without trying to synchronise the breath & neck movements.
- In full rotation, try to make the circle bigger and bigger.
- Keep the eyes closed throughout the practice
- Feel the shifting stretch around the neck and loosening up of the joints and muscles of the neck.
- Practice full rotation very carefully. Start with half rotation and then go for full rotation.
- If there is pain in any position, hold the head in that position. Become aware of the point or area of pain and start breathing consciously and deeply. This will relieve you of pain and then you can continue.
- Can be practiced in cross – legged sitting position, or sitting on a chair.

### **Contra - indications**

- Should be performed carefully by elderly people
- Cervical spondylosis cases to avoid during acute pain

## Benefits

- These practices release tension (accumulated especially after prolonged work at a desk), and also heaviness and stiffness in the head, neck and shoulder region.

## V) Thokkanam (Massage Theraphy)

Thokkanam is systemic manipulation of the body parts by the physician.

“தொக்கணத்தினாலிரத்தம் தேரல் ஊனிலை கட்டு  
மிக்க சவுக்கியம் சமீரணும் போம் - மெய்க்கதிக  
புட்டியுறக்கம் புணர்ச்சி யிலை கதிக்கும்  
பட்ட அலைச்சலறும் பார்”

-பதார்த்த குணசிந்தாமணி

Thokkanam acts directly on vascular system, nervous system, lymphatic system and musculo – skeletal system and brings the affected body to normal condition physically and mentally. It also gives a sense of well being, gives a good sleep and increases vital power and also provides relaxation.

Vatha diseases are relieved specially by thokkanam. The following verse reveals that,

“மத்தமமாகிய தொக்கணத்தின் செயல் வகுப்பானே - சதா  
நித்தமும் வாதம் பிணித்த பிணிப்பை செகுப்பேனே”.

- தேரையர் மகா கரிசல்

Among the nine types of Thokkanam, only two must be done in the case of Sagana vatham.

1. Pidiththal (Effleurage and petriassage)
2. Izhuththal (Traction)

In pidiththal, Strokes are slid smoothly and by kneeing and in Izhuththal, traction like method is performed.

## VI. Kanma Nivarthi :(Expiation)

Kanman means the deeds which are bad, committed by an individual in this and previous births. So he must expiate it to get better relief before the treatment.

Agsthiar in his kanma kaandam-300 prescribed some specific expiatory methods to get rid of the manifestation of the past misdeeds. Those are implanting fruitful trees, establishing garden, laying roads and pathways, digging wells and ponds to public use, constructing temples, donating ornaments to poor children must be done.

“நலியாலே வந்தகண்மந் தீரவென்றால்

நன்மரங்கள் தோப்பு, நடைசாலை வைத்தல்

தெளிவான கிணறுவெட்டல் குளங்கள் வெட்டல்

தெய்வதலங் கோயில் கட்டத் தீரும் பாரு

எளிதான பாலகர்கா பரணமீதல்

என்பதென்ற வாதமெல்லா மிடைந்து போகும்

பழியான நோய் வந்தாவிப்படியே செய்து

பதிவாக வைத்தியத்தைப் பிறகு செய்யே”

-அகஸ்தியர் கண்ம காண்டம்-300.

## **MODERN ASPECTS**

### **THE ANATOMY**

#### **The Vertebral column:**

The Vertebral column which lodges and protects the spinal cord, its meninges and the continuation of the central nervous system lies in the dorsum of the body. It forms a pillar which contains 33 segments and lengths about 70 cm in an average male and 60 cm in a female. It supports the body weight and transmits it to the ground through the lower limbs.

The segments can be divided into cervical, thoracic, lumbar, sacral and coccygeal segments.

The cervical segment has seven vertebral bones, thoracic twelve, lumbar five, sacral five and coccygeal four. All are separate bones except the sacrum and coccyx.

#### **The Curvatures of the Spine:**

There are four curvatures in the vertebral column. They are two primary and two secondary curvatures.

The primary curvatures are the thoracic and the sacral. They are convex posteriorly. The secondary curvatures are the cervical and lumbar. They are anteriorly convex. The cervical curvature becomes prominent when the child is able to hold its head up and fit upright. The lumbar curvature appears by 12 -18 months after the child starts walking. A slight lateral curvature is seen in the upper thoracic region. It is curved to the right in right handed persons and vice versa.

#### **The General features of the vertebrae:**

The vertebrae can be divided into vertebral body and a dorsal vertebral arch. The vertebral arch has 2 pedicles, 7 processes and 2 laminae. Pedicles are thick bars projecting backward from the body. The

laminae are vertical plate like structures, fuses together to form spinous process. The spinous process projects downwards and is the lever for the muscles. The articular processes are four in number, bearing the articular facets and articulate with the adjacent vertebrae. Transverse processes project laterally from the junction of pedicle and laminae. In thoracic region they articulate with ribs.

### **Inter-Vertebral Discs:**

They are fibro cartilagenous discs interposed between the adjacent surface of the vertebral bodies. They are thicker in lumbar region than in thoracic. Their peripheral parts are supplied by the adjacent blood vessels but the central parts are avascular. They receive their nutrients by diffusion from spongy bone of adjacent vertebrae.

The ventral portion of disc is known as **Nucleus pulposus** and the peripheral zone is known as **Annulus Fibrosus**. The central portion is made up of gelatinous mucoid material. On going it is converted into fibro cartilagenous material and its water binding capacity is reduced. The annular fibrosus contains collagen bundle in the periphery and fibro cartilagenous tissue in the inner part.

The thickness of the discs varies daily. In the morning it is thick due to absorption of fluids in lying posture during night it is thin.

### **Uses:**

They absorb shock and allow easy movements of the vertebral column.

### **The cervical Vertebrae:**

The cervical segment of vertebral column contains 7 vertebrae. The first, second and the seventh are atypical and the third to sixth are typical. They are smaller and delicate than the thoracic and lumbar vertebrae. All the cervical vertebrae have a foramen in the transverse

process known as foramen transversarium. This is identical to the cervical vertebrae.

### **Typical Cervical Vertebrae:**

#### **1. Body:**

It is small and oval. It's superior surface is concave transversely with upward projecting lips on each side and its inferior surface is saddle shaped, convex from side to side and concave from before backwards.

#### **2. Vertebral Foramen:**

It is larger than the body and triangular.

#### **3. Vertebral Arch:**

##### **i) Pedicles:**

These are short and directed outwards and backwards from the middle of postero lateral parts of the body and they form the postero medial wall of the foramen transversarium.

##### **ii) Laminae:**

These are long and narrow, being thinner above than below.

##### **iii) Articular Facets:**

The superior and inferior articular processes form the articular pillars which project laterally at the junction of the pedicle and the lamina. The superior articular facets are flat and directed backwards and upwards. The inferior articular facets are also flat but directed forwards and downwards.

##### **iv) The Spine:**

It is short and bifid.

### **Foramen Transversarium:**

It transmits the vertebral artery, vertebral veins and sympathetic plexus.

## **The Atypical Cervical Vertebrae:**

### **1. Atlas:**

It is the first cervical vertebrae which lodges the skull. It has no body and spine. It has anterior and posterior arch, right and left lateral masses and transverse processes.

The anterior arch bears an anterior tubercle in the anterior aspect. Its posterior aspect bears an oval facet which articulates with dens. The posterior surface of the posterior arch has a median posterior tubercle. The two lateral masses bear an elongated superior articular facet for atlanto-occipital joint and an inferior articular facet for atlanto axial joint.

### **2. The Axis:**

The Axis has a peg like projection in its upper part of the body known as the dens (or) odontoid process. It has circular facet anteriorly articulating with atlas. There are two articular facets on either side of the dens on the upper surface of the body. The laminae are thick. The spine is large and bifid. The transverse process is small and possesses a tubercle in its tip.

### **3. The Seventh Cervical Vertebrae:**

It is also known as the “Vertebral Prominent”. The transverse process does not possess anterior tubercle. The foramen transversarium is small (or) absent. It transmits accessory vertebral vein only. The spine is long.

### **Palpable parts of Cervical Vertebrae:**

1. The spine of C<sub>2</sub> is in the nape of the neck 5 cm. below the external occipital protuberance.
2. The spine of C<sub>7</sub> where the collar bone crosses the posterior medium line of the neck.



3. The transverse process of C<sub>1</sub> through the anterior border of sternocleidomastoid, immediately below the tip of the mastoid process.

### **Joints of the Vertebral Column:**

The vertebrae from the 2<sup>nd</sup> cervical to 1<sup>st</sup> sacral are articulated to one another by a series of cartilagenous joints between vertebral bodies and a series of synovial joints between the vertebral arches. The vertebral bodies are united by anterior posterior longitudinal ligaments and by centvertebral disc of fibrocartilage.

#### **1. Atlanto Occipital Joint:**

It is a synovial condyloid variety.

Articular ends:

- |              |   |  |
|--------------|---|--|
| Superiorly   | - | Occipital condoyles.   |
| Inferiorly   | - | Superior articular facet of the atlas.<br>Ligaments, joints capsule, anterior and posterior occipital membranes. |
| Blood supply | - | Vertebral artery   |
| Nerve supply | - | First cervical nerve   |

#### **Ligaments:**

1. Capsular ligament.
2. The Anterior Atlanto-occipital membrane.
3. The posterior Atlanto-occipital membrane.

#### **Movements:**

Flexion, extension and slight lateral flexion are possible.

#### **2. Atlanto Axial Joint:**

Comprise of

1. A pair of lateral atlanto-axial joints.
2. Median atlanto-axial joints.

**Articular ends:**

Inferior facets of atlas and the superior facets of axis.

**Ligaments:**

- i) Capsular ligament.
- ii) Longitudinal ligament.
- iii) Cruciform ligament.

**Movement:**

Rotatory movements around a vertical axis occur in this joint.

**Ligaments between axis and the occipital bone:**

1. Membrana tectoria
2. Cruciate ligament
3. Apical ligament of dens
4. Linear ligament

**The Unco Vertebral (Luschka's) Joints:**

Luschka's joints are not true synovial joint, which develop as a result of degenerative changes in the edges of the disc in early adult.

Luschka's joints are important, because

- i) They are the commonest site of osteophyte formation.
- ii) The osteophytes may compress the cervical nerves.

**Blood supply of Vertebral Column:**

The vertebrae and longitudinal muscles attached to them are supplied by segmental arteries. The arteries give multiple small branches to the vertebral bodies. The extensor muscles of the neck are supplied by the occipital, the deep cervical and the transverse cervical arteries.

**Venous Drainage:**

The Internal vertebral venous plexus lies within the vertebral canal, but outside the spinal dura. It receives tributaries from

- i) The vertebrae through the basilo vertebral veins.
- ii) The meninges and the spinal cord.

The internal vertebral venous plexus is drained by the intervertebral veins, which pass out through the intervertebral foramen. Here they are joined by the tributaries from the external vertebral and sacral veins. The internal venous plexus communicates with the occipital and basilar veins through the foramen magnum.

**Movements of the Vertebral Column:**

The greater thickness of the discs in the cervical and lumbar regions as compared with the thoracic region is associated with the greater individual range of movements occurring in those regions.

Flexion (or) forward bending, extension (or) backward bending, lateral flexion and rotation are possible in vertebral column.

**Movements of the Head and Neck:**

Movements	Muscles	Nerve Supply
Flexion	Sternocleidomastoid	Accessory ventral rami of cervical spinal nerves C <sub>2</sub> ,C <sub>3</sub> ,C <sub>4</sub> .
	Longus Coli	Cervical ventral rami C <sub>2</sub> – C <sub>6</sub> .
	Longus Capitis	Cervical ventral rami C <sub>1</sub> – C <sub>3</sub>
	Rectus capitis Anterior	C <sub>1</sub> ventral ramus
Extension	Splenius cervicis and capitis	Dorsal cervical nerve
	Erector spinae	Dorsal rami
	Rectus capitis posterior major and minor	Dorsal rami C <sub>1</sub>
	Obliques capitis Superior	C <sub>1</sub> – Dorsal ramus
	Trapezius	Accessory

Lateral flexion and rotation	Sternocleido mastoid	Accessory, ventral rami of cervical spinal nerves C <sub>2</sub> ,C <sub>3</sub> ,C <sub>4</sub> .
	Scalene	Cervical ventral rami C <sub>3</sub> – C <sub>8</sub>
	Longus Coli	Cervical ventral rami C <sub>3</sub> – C <sub>8</sub>
	Levator scapulae	Cervical ventral rami C <sub>3</sub> ,C <sub>4</sub> ,C <sub>5</sub>
	Rectus capitis	C <sub>1</sub> – ventral ramus
	Splenius	Cervical dorsal ramus
	Longismus obliques capitis superior and inferior	C <sub>1</sub> Dorsal ramus.

## SPINAL CORD

The spinal cord is an elongated, cylindrical part of the central nervous system, occupying the superior two thirds of the vertebral canal. It extends from the level of the upper border of the atlas to the lower border of the vertebra L<sub>1</sub> (or) the upper of the vertebra L<sub>2</sub>. The lower end is conical and is called as conus medullaris. The apex of the conus is continued down as the filum terminale. Along its length, the cord presents, two thickenings, the cervical and lumbar enlargements which give rise to nerves for the limbs. The spinal cord gives off 31 pairs of spinal nerves.

### **The meninges of the Spinal Cord:**

The spinal cord is covered by three membranes like the brain and is called as meninges. They are

#### **1. Dura Mater:**

The outer most covering is thick opaque, vascular layer and it is continuous with the inner meningeal layer of dura mater of the brain. This is attached anteriorly with the posterior surface of the bodies of C<sub>2</sub> and C<sub>3</sub> and posteriorly with longitudinal ligament. Laterally it is pierced by spinal nerves.

#### **2. Arachnoid Mater:**

It lies between duramater and Piamater and is avascular, transparent membrane. It is continuous with the arachnoid mater of the brain and ends in second sacral level. The sub arachnoid space contains cerebrospinal fluid (CSF).

#### **3. Pia Mater:**

This transparent vascular membrane lies as an innermost layer and is the continuation of piamater of brain. But it is thicker than it.

**External Features:**

The surface of spinal cord presents an antero median fissure, a postero median sulcus and a pair of antero lateral and postero lateral sulci. The posterior nerve roots are attached to the posterior sulci and anterior nerve roots emerge from antero lateral sulci. Continuous with the cord is a series of paired dorsal and ventral root of spinal nerves. Ventral spinal roots contain efferent somatic and efferent sympathetic nerve fibres at same levels. Efferent sympathetic nerve fibres are emerging from their spinal sources. Each ventral root emerges as a variable number of rootlets, which appear over an elongated vertical elliptical area.

Dorsal spinal roots have an ovoid swelling ganglia one on each root proximal to its junction with a ventral root in an intervertebral foramen. Each fans out into 6-8 rootlets entering the cord in a vertical row in the postero lateral sulcus. These are usually said to contain only afferent axons from unipolar neurons in spinal root ganglia.

The region of spinal cord associated with the emergence of a pair of nerves is a spinal segment, but there is no actual surface indication of segmentation. Recent researches show that ventral spinal nerve roots contain only one neuro mediator. Acetyl choline whereas dorsal root contain atleast seven–Glutamate, Aspartate, substances P, VIP, CCK, somatostatin, Dynorphin, and Angiotensin II.

**Internal Structure:**

When seen in transverse section, the grey mater of the spinal cord forms a 'H' shaped mass. In each half of the cord, the gray mater is divisible into

1. The anterior grey column (or horn) and
2. The Posterior grey column. In some part of the spinal cord, a small lateral grey column is also present.

The anterior horn contains motor cells and the posterior horn contains sensory cells. Central canal is situated in the central part of the cord and contains CSF. The lateral horn of spinal cord gives origin to sympathetic nervous system from the thoracic to lumbar regions.

The white mater of the spinal cord is divided into right and left halves in front by a deep anterior median fissure and behind by the posterior median septum. In each half of the white mater is divided into the posterior, lateral and anterior white column.

### **Blood Supply:**

The blood supply to the spinal cord is derived from the anterior and posterior branches of vertebral arteries and they are reinforced to form spinal twigs. The twig at the level of 1<sup>st</sup> and 11<sup>th</sup> thoracic is known as “arteries of kiewicks”.

The spinal twigs and radicular arteries are the important vascular supply of the cord.

### **Venous drainage:**

There are 6 channels of veins present around the cord. One pair is situated behind each anterior & posterior nerve roots. The rest 2 channels are present in antero median fissure and posteromedian sulcus. They are drained into lateral sacral, lumbar, posterior intercostal veins.

### **Spinal Nerves:**

There are 31 pairs of spinal nerves emerge from the cord. The part of the cord to which one pair of spinal nerve is attached is called spinal segment. The spinal cord is made of 8 cervical, 12 Thoracic, 5 lumbar, 5 sacral and 1 coccygeal segments.

### **Cervical plexus:**

These are formed by the anterior rami of upper cervical nerves. Each nerve root divides into ascending & descending branch of another nerve and forms the plexus. The important branches, (1) transverse

cutaneous nerve which supplies the skin in front of the neck, (2) Phrenic nerve which is a motor nerve to the diaphragm.

**Brachial Plexus:**

These are formed by anterior rami of the lower four cervical and anterior primary rami of the first thoracic.

The important branches are ulnar nerve from medial cord axillary & radial nerves from posterior cord.

**NERVE AND ROOT SUPPLY OF MUSCLES**

**UPPER LIMB**

**SPINAL ROOT**

**SPINAL ACCESSORY NERVE**

Trapezius	C <sub>3</sub> C <sub>4</sub>
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**BRACHIAL PLEXUS**

Rhomboides	C <sub>4</sub> C <sub>5</sub>
Serratus anterior	C <sub>5</sub> C <sub>6</sub> C <sub>7</sub>
Pectoralis Major	
Clavicular	C <sub>5</sub> C <sub>6</sub>
Sternal	C <sub>6</sub> C <sub>7</sub> C <sub>8</sub>
Supra Spinatus	C <sub>5</sub> C <sub>6</sub>
Infra Spinatus	C <sub>5</sub> C <sub>6</sub>
Latissimus Dorsi	C <sub>6</sub> C <sub>7</sub> C <sub>8</sub>
Teres Major	C <sub>5</sub> C <sub>6</sub> C <sub>7</sub>

**Axillary Nerve**

Deltoid	C <sub>5</sub> C <sub>6</sub>
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**Musculo Cutaneous Nerves**

Biceps	C <sub>5</sub> C <sub>6</sub>
Brachialis	C <sub>5</sub> C <sub>6</sub>



## **Radial Nerve**

Triceps

Long Head

Lateral Head

C<sub>6</sub>C<sub>7</sub>C<sub>8</sub>

Medial Head

Brachio radialis

C<sub>5</sub>C<sub>6</sub>

Extensor Carpi radialis longus

C<sub>5</sub>C<sub>6</sub>

## **Posterior Interosseous Nerve**

Supinator

C<sub>6</sub>C<sub>7</sub>

Extensor Carpi Ulnaris

C<sub>7</sub>C<sub>8</sub>

Extensor digitorum

C<sub>7</sub>C<sub>8</sub>

Abductor pollicis Longus

C<sub>7</sub>C<sub>8</sub>

Extensor pollicis Longus

C<sub>7</sub>C<sub>8</sub>

Extensor pollicis brevis

C<sub>7</sub>C<sub>8</sub>

Extensor indicis

C<sub>7</sub>C<sub>8</sub>

## **Median Nerve**

Pronator teres

C<sub>6</sub>C<sub>7</sub>

Flexor Carpi radialis

C<sub>6</sub>C<sub>7</sub>

Flexor digitorum superficialis

C<sub>7</sub>C<sub>8</sub>T<sub>1</sub>

Abductor pollicis brevis

C<sub>8</sub>T<sub>1</sub>

Flexor pollicis brevis

C<sub>8</sub>T<sub>1</sub>

Opponens pollicis

C<sub>8</sub>T<sub>1</sub>

Lumbricals I & II

C<sub>8</sub>T<sub>1</sub>

## **Anterior Interosseous Nerve**

Flexor digitorum profundus I & II

C<sub>7</sub>C<sub>8</sub>

Flexor pollicis longus

C<sub>7</sub>C<sub>8</sub>

## **Ulnar Nerve**

Flexor carpi ulnaris	C <sub>7</sub> C <sub>8</sub> T <sub>1</sub>
Flexor digitorum profundus III & IV	C <sub>7</sub> C <sub>8</sub>
Hypothenar muscle	C <sub>8</sub> T <sub>1</sub>
Abductor pollicis	C <sub>8</sub> T <sub>1</sub>
Flexor pollicis brevis	C <sub>8</sub> T <sub>1</sub>
Palmar interossei	C <sub>8</sub> T <sub>1</sub>
Dorsal interossei	C <sub>8</sub> T <sub>1</sub>
Lumbricals III & IV	C <sub>8</sub> T <sub>1</sub>

# CERVICAL SPONDYLOSIS

## Nomenclature

Cervic(o)	-	Latin Word, Means neck.
Spondylo	-	Greek Word, Means Vertebra
Osis	-	Condition

Is a type of pathological condition in cervical vertebra.

## Definition:

Cervical spondylosis is a disorder characterised by increasing degeneration of the intervertebral disc, with subsequent changes in the bones and soft tissues. Spondylosis is usually asymptomatic. Symptoms are usually manifested of encroachment on local neural elements such as cervical nerve roots, spinal cord, vertebral artery (or) sympathetic nerves. The symptoms and signs appear to be related to the cause and time course of compression as well as the structures being compressed.

## Chronology:

In 1901, Sir Victor Harsely explained compression of cervical spine due to progressive CSM. Hayashi in 1987 contributed the Spondylotic changes of spine.

## Epidemiology:

Cervical Spondylosis is present in 20- 25% of Population by the age of 50 Years & increases to 70 -85% by the age of 65 Years. (From Radiographic Evidence).

**Location:**

- ★ Generally the C5 & C6 roots are most commonly affected by cervical Spondylosis as a result of the increased mobility at the C5-C6 & C6-C7 levels.
- ★ Acute disc lesions are seen most often at the C7 level followed by C6
- ★ High level cervical disc involvement are very uncommon
- ★ T1 Radiculopathy is caused by the result of involvement by Pancoast tumor in the apical pleura.

**Aetiology:**

Causes of this disorder are explained as follows.

**a) Degenerative Causes:**

There are primary & Secondary

- |                  |   |                      |
|------------------|---|----------------------|
| <b>Primary</b>   | - | Senility             |
|                  | - | Genetic Factors      |
|                  | - | Metabolic Factors    |
|                  | - | Manual Labour        |
| <b>Secondary</b> | - | Osteo arthritis      |
|                  | - | Rheumatoid arthritis |
|                  | - | Metastatic carcinoma |
|                  | - | Lymphoma of Spine    |
|                  | - | TB Spine             |

**b). Injury**

1. Automobile accidents with whiplash injury & atheletic injury
2. Sudden jerks on the arms during falling down.
3. Previous injury with fracture or disc prolapse.

**c). Occupational causes**

**d). Hereditary Factors.**

1. Congenital narrowing of the cervical spinal canal (myelopathy is often seen when canal's sagittal diameter is 12mm or less).
2. Segmental defects – Hemi vertebra, Fused Vertebra.

**e) Acquired narrowing of cervical spinal canal due to**

- ★ Osteophytes
- ★ Ossified posterior longitudinal ligament (OPLL)
- ★ Facet joint hypertrophy (results foraminal stenosis & compression of root of radicular artery)
- ★ Hypertrophied ligamentum flavum (Compress the cord during extension).

## PATHOGENESIS

In disc degeneration the primary event is a progressive decrease in the degree of hydration. Glycoproteins diminish in size and number their ability to retain water diminishes. This results in loss of disc height, disc fibrosis and annular weakening. Adjacent vertebral bodies approximate each other and uneven abnormal movement in the affected areas probably results in osteophyte formation. These occur at all the joints, namely the disc, zygoapophyseal joints and the neurocentral joints of Luschka. Though osteophyte formation may be the body's attempt to stabilize the joints their growth can result in narrowing of the spinal canal and cord compression.

The **predisposing factors** which may accelerate of these changes viz.

1. Occupation requiring repetitive motion and chronic flexion of the cervical spine.
2. Previous injury with fracture or disc prolapses.
3. Segmentation defects like hemivertebrae or fused vertebrae.
4. May be a hereditary predisposition to intervertebral disc disease.

## PATHOLOGY:

Cervical spondylosis is very common and histological evidence of degenerative changes is present in virtually even present over the age of 70. Osteophytes may form posteriorly with osteoarthritis of the apophyseal joints and also anteriorly in relation to degenerative changes and narrowing of the intervertebral disc with sclerosis of the bony end plates. The osteophytes may cause symptoms by encroaching on the spinal nerve foramina or in the cervical region on the vertebral artery foramen. In the cervical region intermittent pain and discomfort may be followed eventually by stiffness and limitation of movements.

At first injury to be chondrocytes occur and therefore, the maintenance of articular cartilage imparirs and if this continues loss or decreased synthesis of proteoglycans occurs. Another theory is with decades of weight bearing. There is remodeling of the articular cartilage with redistribution of load stress chondrocyte intergrity mainly depends on normal level of loads. Chondrocyte degeneration or injury occurs as a result of overloading or under loading and loss of proteoglycans has been contributed by alteration of subsynovial weave of collagen fibres.

Chondrocyte injury causes release of degradative enzymes particularly proteoglycanase and **cathepsins**. At the same time the capacity of synthesis of proteoglycans diminished due to age and chondrocyte injury. Injury causes alteration in collagens and there occurs change from type II to type I. The Type I collagen withstands minimally to stress. All this causes cartilage injury.

**Morphology:**

The early changes appear to be erosion and flaking of cartilaginous surface with advance of the disease clefts appear within the cartilage at right angles to the surface. The clefts may penetrate to sub chondral bone producing cartilage fibrillation. Sometimes fragments of cartilage break off to create joint mice. This cartilage injury results in growth of blood vessels from the subchondral bone into articular cartilage. These occur focal cystic areas within the subchondral bone and they contain fibrous tissues. The further progression of the disease, leads to deep or complete erosion of cartilage layer.

The disappeared and leaves denuded subchondral bone which is dense smooth, glistening to ivory. This is known as Eburnation. The loss of cartilage accounts for the so called thinning of joint space, which is seen radiographically.

Osteophytes developing from margins of articular cartilage may sometime extend to the ligamentous and capsular attachment and is called “bone spurs” of osteoarthritis. When large spurs project from opposing bones come into contact causing pain and limitations to movements. These bony spurs accounts for nodules known as “Heberden’s nodes.”

### **Intervertebral disc prolapse**

This is common cause of compression of the nerve roots and more rarely causes compression of the cord. The inter vertebral disc consists of a central module semifluid matrix, the nucleus pulposus, surrounded by a ring of fibrous tissue and fibrocartilage, the annulus fibrosus. The posterior segment of the annulus is thinner and less firmly attached to bone and following unusual stress part of the martix of the nucleus pulposus may hereniae through it. The lesion often termed “Slipped disc” may occur after injury and symptoms depend on the direction taken by the extruded matrix. It usually tracks posterior laterally around the expansion of the posterior longitudinal ligament, appearing at one side and compressing the spinal nerve in the intervertebral foramen. Disc protrusion occurs, principally in C5 –C6 and C6 – C7 discs.

A single mid line posterior disc protrusion may compress the spinal cord, obstructing the anterior spinal artery, and is a rare but important cause of permanent damage to the spinal cord if surgical treatment is delayed.

When there are several protrusions, the resulting compression may impair the circulation and variable effects of ischaemia of the spinal cord may result. There may be cavitation of the cord and loss of nerve cells in the severely affected areas, the condition being known as “Spondylotic myelopathy”. Nerve root compression is common than myelopathy.



## **Pathogenesis of Myelopathy and Radiculopathy:**

The various factors that play a role are:

### **1. Congenital narrowing of the Cervical Spinal Canal:**

This can be a major cause of myelopathy – canal narrowing is usually generalised but can occasionally be seen at one or two levels from C<sub>2</sub>- C<sub>7</sub>. Myelopathy is often seen when the canal sagittal diameter is 12 mm or less.

### **2. Acquired narrowing of the Spinal Canal:**

This can be due to:

#### **I. Osteophytes:**

The osteophytes can also give rise to irritational fibrosis of dural sleeve of the nerve root.

#### **II. Ossified posterior longitudinal ligament (OPLL):**

OPLL is characterized by heterotrophic new bone formation in ligamentous tissue and may be due to the activity of osteoblastic phenotype cells.

#### **III. Facet joint Hypertrophy:**

This leads to foraminal narrowing with resultant compression of the nerve root and the radicular artery.

#### **IV. Hypertrophied Ligamentum Flavum:**

During extension, the cord is compressed by the thickened ligament over the anterior osteophytic ridge and this may occur more frequently, a relatively more immobile one is due to spondylosis changes.

#### **V. Movement Disorders:**

Chronic movement disorders like torticollis and athetosis can induce premature spondylosis changes in the cervical spine.

## **VI. Trauma:**

Trauma, such as whiplash injury may cause structural changes that predispose towards premature degenerative disc disease.

### **3. Dynamic Factors:**

The spinal cord moves within the spinal canal and the cord and root becomes taut in flexion and lax in extension with an increase in the posterior contour by almost 5 cm and the anterior contour by upto 2 cm. Dural adhesions to the posterior longitudinal ligament and the root sleeves to the foramina make the cord more susceptible to injuries.

### **4. Vascular Factors:**

Vascular compromise by compression of the anterior spinal and radicular arteries and veins. The anterior sulcal arteries can be compressed and flattened due to degenerative changes with a reduction in blood flow. Though, the anterior radicular arteries exist at every level, the main artery is between C 4 – C 6. As Cervical spondylosis occurs mainly at these levels, compression of the main radicular artery in the foramen may be responsible for the ischaemia of the cord.

The combined effects of the compressive tensile and shear forces produces recurrent sub acute changes of demyelination in the posterior columns and the lateral spino – thalamic tracts. There is a relative sparing of anterior white mater tracts and a varying degree of grey mater degenerative changes.

### **Common signs and symptoms:**

1. Pain in the neck, radiating to the shoulder blades, top of the shoulders, upper arms and hands or back of the head.
2. Crunching sounds with movement of the neck or shoulder muscles.
3. Numbness and tingling sensation in the arms, hands and fingers, some loss of feeling in the hands and impairment of reflexes,
4. Muscle weakness and deterioration.

5. Neck stiffness.
6. Head ache.
7. Dizziness and unsteady gait.
8. With advanced stages, loss of bladder control and leg weakness.

**Neural compression syndrome:**

Most of the patients suffer from either radiculopathy (or) myelopathy. They may be acute, sub acute or chronic.

**1. Cervical Radiculopathy:**

Compression of a nerve root may be due to several causes. In young persons soft disc herniations are more common. The herniation is posterolateral near the nerve root foramen and a free disc fragment can be frequently found. Uncovertebral osteophytes and occasionally osteophytes from the superior articular process along with reduced disc height, may result in foraminal narrowing and radiculopathy.

**SUMMARY OF THE SITE OF SENSORY DISTURBANCES WITH INDIVIDUAL ROOT**

<b>Nerve root</b>	<b>Disc level</b>	<b>Symptoms</b>
C <sub>3</sub>	C <sub>2</sub> – C <sub>3</sub>	Pain and numbness in the back of the neck, mastoid process, and pinna of ear.
C <sub>4</sub>	C <sub>3</sub> – C <sub>4</sub>	Pain and numbness in back of the neck, levator scapulae and anterior chest.
C <sub>5</sub>	C <sub>4</sub> – C <sub>5</sub>	Pain in the neck, tip of the shoulder, anterior arm, numbness over middle of the body, deltoid muscle.
C <sub>6</sub>	C <sub>5</sub> – C <sub>6</sub>	Pain in the neck, shoulder, medial border of the scapula, lateral arm, dorsal forearm, numbness in tip of thumb or on dorsum of hand over first dorsal interosseus muscle.

C <sub>7</sub>	C <sub>6</sub> – C <sub>7</sub>	Pain in the neck, shoulder, medial border of scapula, lateral arm, dorsal forearm, sensory change in index and middle finger.
C <sub>8</sub>	C <sub>7</sub> – T <sub>1</sub>	Pain in the neck, medial border of scapula, medial aspects of arm and forearm. Sensory change in the ring and little fingers.

**SUMMARY OF THE MOTOR SYMPTOMS AND SIGNS  
(INCLUDING REFLEXES)**

<b>Nerve root</b>	<b>Disc level</b>	<b>Weakness – Reflex change</b>
C <sub>3</sub>	C <sub>2</sub> – C <sub>3</sub>	Not readily detectable weakness or reflex changes except by EMG.
C <sub>4</sub>	C <sub>3</sub> – C <sub>4</sub>	Not readily detectable weakness or reflex changes except by EMG.
C <sub>5</sub>	C <sub>4</sub> – C <sub>5</sub>	Weakness of extension of arm and shoulder particularly above 90° wasting of deltoid muscle, no reflex change.
C <sub>6</sub>	C <sub>5</sub> – C <sub>6</sub>	Weakness of biceps muscle, Diminished biceps reflex.
C <sub>7</sub>	C <sub>6</sub> – C <sub>7</sub>	Weakness of triceps muscle diminished triceps reflex.
C <sub>8</sub>	C <sub>7</sub> – T <sub>1</sub>	Weakness of triceps and small muscles of hand. No reflex change.

**2. Cervical Myelopathy:**

It may be precipitated by a large central disc herniation but is more commonly the result of spondylotic changes superimposed on a congenitally narrowed canal. Dorsomedial herniation of disc and the

development of transverse bony bars or posterior osteophytes may result alone or in combination in pressure on the spinal cord or the anterior spinal artery which supplies the anterior 2/3 of the cord.

### **Clinical Features:**

The onset of symptoms is usually insidious and painless, although acute deterioration may occur after trauma, especially hypertension injury. Upper motor neuron signs develop in the limbs with spasticity of the legs usually appearing before the arms are involved. Dermatomal sensory loss is common in the upperlimbs, while pain, temperature, joint sense and position sense may be impaired in the legs. The neurological deficit usually progresses gradually and disturbance of control of micturation is a late feature. Constipation is usually but with severe paraplegia there may be incontinence of faeces.

### **3. Radiculo Myelopathy:**

A combination of radicular and cord symptoms is found.

### **4. Signs and symptoms of spinal cord compression at different level of cervical segment.**

#### **★ At the C<sub>3</sub> – C<sub>4</sub> Level:**

Pain in the neck and occipital area, paresthesia and weakness of upperlimbs early. Paralysis of 9<sup>th</sup> and 10<sup>th</sup> cranial nerves, spasticity of all four limbs, exaggerated deep tendon reflexes, absence of abdominal and cremastic reflexes, extensor plantor on both sides, sphincters affection, paralysis of lower part of trapezius, supraspinatus, infraspinatus and diaphragm may occur.

#### **★ At the Level of C<sub>5</sub>:**

Quadriplegia, paralysis of deltoid, biceps, brachialis, rhomboideus and supinator muscles. Diminished biceps (C<sub>5</sub> – C<sub>6</sub>) and supinator (C<sub>5</sub> – C<sub>6</sub>) jerks, exaggerated triceps jerk and inversion of the radial reflex may occur.

**★ At the Level of C<sub>5</sub> – T<sub>12</sub>:**

Signs of lower motor neuron lesion, segmental sensory loss in upper limbs and signs of upper motor neuron lesion in the lower limbs may occur.

**★ At the Level of C<sub>7</sub>:**

Paraplegia, paralysis of triceps, extension of wrist and fingers, loss of triceps (C<sub>6</sub>– C<sub>7</sub>) jerks.

**★ At the Level of C<sub>8</sub> – T<sub>1</sub>:**

Spastic paralysis of trunk and lower limbs, paralysis of flexors of wrist, fingers and small muscles of hand and exaggeration of lower limbs tendon reflexes.

**5. Autonomic Symptoms:**

Various autonomic symptoms can be produced. by cervical disc diseased. (e.g) Vertigo, flushing, tinnitus and visual blurring. These may be mediated by the sympathetic contribution to the sinuvertebral nerves from the stellate ganglion. This may also result in fall of blood pressure, sweating and increased intestinal motility.

Spondylotic changes at the uncovertebral joints may cause direct linking of the vertebral artery and produce similar changes.

**6. Vertebro – Basilar Insufficiency:**

Vertebro basilar insufficiency induced by spondylotic compression of the vertebral artery is uncommon though popularly diagnosed.

Often rotation to one or both sides or extension of the neck and less frequently flexion may precipitate a brief attack of diplopia. In these patients movements of the head probably causes pressure on the vertebral arteries with consequent impairment of the blood supply of the hindbrain. strokes due to persistent vertebro basilar ischemia may also occur.

**Investigation:****1. plain X- ray of cervical spine, including A.P.. Lateral and oblique views show**

- Disc space narrowing
- Osteophyte formation
- Degeneration in facet and uncovertebral joints
- Foraminal stenosis (Seen on oblique films)
- Central stenosis

**2. Myelogram – May show compression of the spinal cord****3. C.T Scan (computerized Tomography)**

- Confirms degenerative changes
- May demonstrate posterior osteophytes and disc herniation

**4. MRI (Magnetic Resonance Imaging)**

- Neural compression
- Intrinsic cord changes
- Disc degeneration

**5. Examination of CSF:**

very high protein

**6. Other tests:**

Nerve conduction studies.

**Differential diagnosis:**

In most cases of cervical spondylosis either radiculopathy or myelopathy is the presenting features. Clinical features of many diseases may mimic cervical radiculopathy and myelopathy.

**Radiculopathy**

The symptoms of lesion of the brachial plexus, such as neurofibroma, the thoracic outlet syndrome, and pancoast tumour are superficially similar to those of disc disease.

## **1. Pan coast tumour**

Pan coast tumour results from local extension of a tumour growing in the apex of the lung with involvement of the eighth cervical, first and second thoracic nerves, with shoulder pain which radiates in the ulnar distribution of the arm, and often with radiologic destruction of the first and second ribs.

## **2. Referred pain**

Cardiac ischaemia causes left sided brachial neuralgia. In those patients, diagnosis depends on the history, examination and abnormal findings in E.C.G.

Sub – diaphragmatic lesions – cause right sided pain.

Gall bladder lesions causes right sided. brachial neuralgia. The diagnosis depends upon the history examination and investigations.

## **Myelopathy**

New growth of the spinal cord at cervical level may mimic the features of cervical spondylosis. But it can be differentiated by radiological findings, examination of cerebrospinal fluids and myelography.

### **1.Tumours of the spinal canal**

#### **i.)Extra dural (or) epidural tumours**

commonest extra dural tumour is the spinal metastasis. The symptoms are local pain, radiating pain which is exacerbated by coughing, sneezing or straining. Pain and local tenderness often proceed. other symptoms.

#### **ii) Intradural tumours**

##### **a. Extra medullary tumours (Meningiomas neur ofibromas)**

Local back pain, sensory loss below the level of the pain, weakness and bladder and bowel dysfunction.



## **b. Intra medullary tumours**

Dissociated sensory loss in the segments of tumour origin and sparing of posterior column sensory function.

Later spino thalamic tracts may be involved. The sacral segments may be spared. Atrophy in the appropriate segments due to anterior horn cells involvement.

## **2. Epidural abscess**

The condition can occur as a complication of operation or lumbar puncture. Spinal osteomyelitis acts as the nidus for abscess formation. Unexplained fever and mild spinal ache, later radicular pain occurs. As the abscess expands it causes cord. compression with a transverse and usually complete transaction syndrome.

## **3. Amyotrophic lateral sclerosis**

Upper motor neuron signs in Lower limbs and lower motor neuron signs in upper limbs.

## **4. Other unusual compressive lesions**

Cervical cord compression from destruction of the cervical apophyseal or atlanto axial joint's rheumatoid arthritis. It may present as a chronic compressive myelopathy similar to cervical spondylosis.

## **5. Syringomyelia**

Dissociated sensory loss wasting of the small muscles of one of other hand, loss of one or more reflexes in the arms and hyperreflexia in the legs and extensor plantar responses are common Charcot joints in the shoulders elbows (or) knee are common in advanced cases.

### **Syringobulbia**

Dissociated sensory loss on the face, palatal palsy, Horner's syndrome and nystagmus kyphoscoliosis pescavus and spinabifida are often found.

## **6. Tabes dorsalis**

Fleeting and repetitive shooting pains occurring mostly in the legs. Loss of reflexes in the legs, impaired position and vibration sense gives severe ataxic gait. Romberg's test is positive. Argyll Robertson pupils constitute a typical tabetic facies.

### **Diagnosis:**

The clinical diagnosis is arrived from the features of cervical radiculopathy and myelopathy. That diagnosis may be confirmed by the radiography, myelography, tomography and magnetic resonance imaging.

### **Complication:**

1. Pseudo arthrosis
2. Graft displacement
3. Neurological injury
4. Spastic gait and
5. Injury to other structures
  - Recurrent laryngeal nerve
  - Superior laryngeal nerve
  - Carotid artery
  - Oesophagus

### **Management:**

#### **1. Non – Operative:**

1. Analgesics
2. Local modalities
3. Exercise programme and cervical traction.

#### **2. Operative:**

Operative treatment should be considered.

1. In the presence of intractable pain.
2. where there is evidence of radiculopathy or myelopathy.
3. Where osteophytes are producing vertebro basilar insufficiency.

**Cervical Radiculopathy:**

Conservative treatment with analgesics and a cervical collar results in resolution of symptoms in the great majority of patients. In chronic complicated cases foraminectomy or disc excision to be recommended.

**Cervical myelopathy:**

Surgical procedures, including laminectomy and anterior excision of disc may arrest progression in disability but do not usually result in neurological improvement and carry a significant risk particularly in the elderly, the judgements as to where surgery should be undertaken may be difficult. Manipulation of the cervical spine is no proven benefit and may precipitate acute neurological deterioration.

**Physiotherapy:**

In acute exacerbation of disease affecting the cervical spine, rest may be the initial treatment.

**Cervical Collar:**

Cervical collar are advised to wear temporary collar. (Which is often made from Plastazote) for day time to restrict movement, and a soft collar for support at night. A patient who is given a collar should be advised that the restriction in neck movement will alter other proprioception, for example he will need to take care in the dark or on entering darkened rooms when he may lose his balance. A patient wearing a collar should not drive because judgement of relative distances will be impaired. In the cases of vertebro basilar insufficiency (VBI) cervical collar may be advised to the sufferers according to the severity.

**Cervical Traction:**

Vertebral traction should be the first choice of pain relief for patients suffering nerve root pain. Intermittent sustained traction is carried out after careful positioning has localized the involved segment in

such cases the treatment atleast once a day is essential, prolonged pain relief will take several days to obtain.

Cervical traction provides positive patient response and can relieve the pain associated with certain neck disorders. It applies a stretch to muscles, ligaments and tissue components of the cervical spine. It provides relief by promoting separation of the intervertebral joint space, which contains the disc and may reduce a “bulge” or impingement of structures within the foramen. It is no indicated for use in condition of instability such as with “whiplash” injury. It is most commonly used when the patient is in the supine position (lying on the back with knees bent at a 45° angle) with the neck placed at 20° - 30° of flexion (forward tilt). Using traction in this position helps stretch the posterior neck muscles and facilitate intervertebral separation, which relieves pressure that may be pinching nerves, therefore, promoting muscle relaxation and intervertebral separation.

### **Exercise for Cervical Spondylosis:**

To start with, exercises should be done sitting and the feet must rest on the floor or stool. Exercises should be done in front of a mirror, in order to get correct movements.

**1. Static Head & Neck Exercise:** (no movement take place, muscles are strengthened)

- ★ Place your hand on your forehead, with the hand stop forehead from bending forwards – 3 times increase to 5.
- ★ Place the hand behind the head, with yours hand stop the head from bending backwards -3 times increases to 5.
- ★ Place right hand on right cheek and ear, stop the head from bending on right side – 3 times increases to 5.
- ★ Place the left hand on left cheek and left ear, stop the head from bending on left side – 3 times increase to 5.

- ★ Place right hand on right lower jaw stop the head from turning to right side -3 times increase 5.
- ★ Place left hand on left lower jaw, stop the head from turning to the left side 3 times increase to 5.

In order words give resistance with your hands to work the muscles as much as possible. Continue the above static exercises. If these suit, otherwise discontinue the static exercises.

## **2. Exercise for Shoulder:**

- ★ Arms lift forwards, up and down – 5 times increase to 7-10 times
- ★ Arms lift sideways, up and down – 5 times, increase to 7 -10 times
- ★ Arms lift forwards, part and together – 5 times increase to 7 -10 times
- ★ Fingers on the shoulder with elbows bent:
  - Elbows circling forwards, upwards, backwards & downwards – 5 times increased to 7 – 10 times
  - Elbows circling backwards, upwards, forwards & downwards – 5 times increase 7 -10 times
- ★ Shoulders bracing – 5 times, increase to 7 – 10 times
- ★ Right hand meeting left hand at the back (Right hand to be carried above the right shoulder, left hand carried from left side at the back and try to touch the right hand) Repeat the left hand carried above the left shoulder and the right hand turned in, carried from the side of trunk -3 times each side, increase to 5 -7 times.

## **Instructions:**

1. Do not getting look down to read (or do any other work). Bring the reading materials to the eye level.
2. All neck movements can be performed with practice, by using trunk movements.
3. Use a low level pillow supporting the head and neck; pillow line upto the shoulders level. Otherwise not to be encouraged.

4. While lying on sides, head should be in neutral position. Use one pillow and your hand to adjust the head, or in addition, one small pillow to adjust the head. Place one pillow in front to support the right arm if you are lying on right side, place a pillow to support your left arm.

**Prevention:**

1. Avoid sitting in cramped position.
2. Sleep without pillows
3. Use a soft fabric collar or towel to support the neck.
4. Avoid injury
5. Wear protective headgear for contact sports
6. Use seat belts in vehicles and
7. Keep head rests at proper height.

**Prognosis:**

The assessment of prognosis is attained by studying the pathological condition of the spinal cord and nerve roots. Improvement can be felt with some of the reversible changes with drug treatment. In complicated cases improvement is not possible. The signs and symptoms due to myelopathy are unmanageable. Long history of suffering multiple disc lesions and in severe compression of spinal cord may adversely affect the prognosis.

## **MATERIALS AND METHODS**

The Clinical study on Sagana vadham was carried out in the post graduate department of Pothu Maruthuvam, Govt Siddha Medical College, Palayamkottai. In this study 20 patients were treated as in patients and the other 20 as outpatients. After discharge the patients were also followed as out patients.

### **Selection of the Patients:**

The Patients were selected on the basis of the following clinical findings.

1. Pain, Stiffness and restricted movements in the neck
2. Radiating pain in the upper limbs
3. Tingling sensation and numbness in the upper limbs
4. Feeling of heaviness in the body and weakness of the limbs
5. Giddiness
6. Constipation
7. Mental depression
8. Burning sensation of eyes

The detailed history was taken from the patient about:

1. Occupation
2. Social economic status
3. Psychological condition
4. Diet and other habits
5. Trauma
6. Exposure to cold.

### **Diagnosis:**

The diagnosis was made by following siddha diagnostic methods. Nilam, Kaalam, Poriyalaridhal, Pulanalarithal, Vinaadhal, Mukkutra Nilaigal, Udal Thathukal Nilai and Envagai Thervugal, and the diagnosis

of Sagana Vadham was obtained which correlates with modern term cervical Spondylosis by the X-Ray findings.

**Investigation:**

The following investigations were done in all selected patients in the laboratory of Govt.Siddha Medical College, Palayamkottai.

**Blood:**

- Total WBC Count
- Differential WBC count
- Erythrocyte Sedimentation Rate
- Haemoglobin estimation
- Estimation of Sugar
- Estimation of Urea
- Estimation of Cholesterol.

**Urine:**

- Albumin
- Sugar
- Deposits

**Radiological Investigations:**

- X – Ray cervical spine
- AP – View
- Lateral View
- Oblique View

**Treatment**

Nilavagai Choornam 5gm at bedtime with hot water was given on the first day of treatment.

All the patients were treated with the following medicines

1. Agni Choornam  
1-2gm thrice daily with hot water
2. Maasha thylam – 30ml  
As external application



All the patients were adviced to dietary regimen (or) Pathiyam to avoid tamarind and salt

Pranayamam and simple Yogasana were adviced for a supportive therapy.

The Bio - Chemical analysis was done in the department of Bio Chemistry and Pharmacological analysis was done in the pharmacological laboratory of Govt. Siddha Medical College, Palayamkottai.

## **RESULTS AND OBSERVATION**

For the clinical study 20 in patients and 20 out patients were selected and treated in PG-I Pothu Maruthuvam Department, GSMC hospital, Palayamkottai. Results were observed with respect to the following criteria.

1. Sex distribution
2. Age distribution
3. Kalam
4. Thegi
5. Gunam
6. Religion
7. Paruvakalam
8. Thinai
9. Occupational status
10. Socio-economic status
11. Etiological factor
12. Mode of onset
13. Duration of illness
14. Clinical manifestations
15. Deep tendon reflexes
16. Gananendrium
17. Kanmendrium
18. Condition of Mukkutram (Vatha, Pitha, kabha)
19. Udal Thathukkal
20. Envagai Thervugal
21. Associated diseases
22. Gradation of results
23. X-Ray
24. Laboratory findings

## 1. Sex distribution

**Table 1: Illustrates sex distributions and its relative percentage**

S. No	Sex	In Patients (IP)		Out patients (OP)	
		No of Cases	Percentage	No of cases	Percentage
1.	Male	10	50	6	30
2.	Female	10	10	14	70

Out of 20 in patients, 50% were males and 50% were females.

Out of 20 out patients 30% were males and 70% were females.

## 2. Age distribution

**Table 2: Illustrates the age distributions and its relative percentage**

S. No	Age group in years	In Patients (IP)		Out patients (OP)	
		No. of cases	Percentage	No. of cases	Percentage
1.	10 -30	-	-	-	-
2.	31-40	-	-	3	15
3.	41-50	2	10	5	25
4.	51-60	7	35	8	40
5.	61-70	7	35	4	20
6	Above 70	4	20	-	-

Among the 20 in patients,

10% of cases were observed in the age group of 41 to 50 years.

35% of cases were observed in the age group of 51 to 60 years.

35% cases were observed in the age group of 61 to 70 years

20% of cases were observed in the age group of above 70 years

Among the 20 out patients,

15% of cases were observed in the age group of 31 to 40 years.

25% of cases were observed in the age group of 41 to 50 years

40% of cases were observed in the age group of 51 to 60 years

20% of cases were observed in the age group of 61 to 70 years.

### 3. Kalam:

In siddha literature age of individual is fixed as 100 and into 3

kalam as,

Vadha kalam - First 33 years & 4 months

Pitha kalam - Second 33 years & 4 months

Kabha Kalam - Third 33 years & 4 months

**Table 3: Illustrates the kalam**

S. No	Kalam	In Patients (IP)		Out patients (OP)	
		No of cases	Percentage	No of cases	Percentage
1.	Vadha Kalam	-	-	1	10
2.	Pitha Kalam	16	80	19	90
3.	Kabha Kalam	4	20	-	-

Out of 20 In Patients,

80% of cases were in the pitha kalam

20% of cases were in the kabha kalam

Out of 20 patients,

10% of cases were in the Vadha kalam

90% of cases were in the Pitha kalam

#### 4. Constitution of the Body

**Table 4: Illustrates Constitution of the body and its Relative percentage**

S. No	Constitution Of the body	In Patients (IP)		Out patient (OP)	
		No. of cases	Percentage	No. of cases	Percentage
1.	Vadha Thegi	-	-	-	-
2.	Pitha Tegi	-	-	-	-
3.	Kabha Thegi	-	-	-	-
4.	Thontha Thegi	20	100	20	100

In both of IP & OP study, 100% of cases were in the Thontha thegi.

## 5. Gunam

**Table 5: Illustrates Gunam and its relative percentage**

S. No	Gunam	In Patients (IP)		Out patients (OP)	
		No. of cases	Percentage	No. of cases	Percentage
1.	Sathuvam	-	-	-	-
2.	Rajotham	20	100	20	100
3.	Thamogunam	-	-	-	-

In the both IP & OP study, 100% of cases were in Rajotham.

## 6. Religion Distribution

**Table 6: Illustrates Religion Distribution and Its relative Percentage**

S. No	Gunam	In Patients (IP)		Out patients (OP)	
		No of cases	Percentage	No of cases	Percentage
1.	Hindu	20	100	18	80
2.	Christian	2	10	-	-
3.	Muslim	-	-	2	20

In both IP & OP study,

100% of IP cases & 80% of OP cases were observed in Hindu.

20% of OP cases were observed in Muslim.

## 7. Paruva kalam

**Table 7: Illustrates the parauva kalam and its relative percentage:**

S. No	Paruva Kalam	Months	In Patients (IP)		Out Patients (OP)	
			No of Cases	Percentage	No of Cases	Percentage
1.	Kar kalam	Aavani, Purattasi	-	-	-	-
2.	Koothir kalam	Iyppasi, Karthigai	-	-	-	-
3.	Munpani Kalam	Markazhi, Thai	7	35	15	75
4.	Pinpani Kalam	Masi, Panguni	11	55	5	25
5.	Elavenil Kalam	Chithirai, Vaikasi	2	10	-	-
6.	Muthuvenil Kalam	Aani, Aadi	-	-	-	-

In both IP & OP study 35% IP cases and 75% of OP cases were observed in Munpani kalam.

In IP study 10% of cases were observed in Elavenil kalam.

In both IP & OP Study 55% IP cases 25% were observed in Pinpani Kaalam.

## 8. Thinaï (The habitat of the patients)

**Table 8: Illustrates the Thinaï**

S. No	Thinaï	In Patients (IP)		Out patient (OP)	
		No. of cases	Percentage	No. of cases	Percentage
1.	Kurinji	-	-	-	-
2.	Mullai	-	-	-	-
3.	Marutham	20	100	20	100
4.	Neithal	-	-	-	-
5.	Palai	-	-	-	-

In both IP & OP study 100% of cases were observed in Marutham.

## 9. Occupation:

**Table 9: Illustrates occupation**

S. No	Occupation	In Patients (IP)		Out patient (OP)	
		No of cases	Percentage	No of cases	Percentage
1.	Beedi Workers	5	25	8	40
2.	Agricultural labours	6	30	4	20
3.	House Wives	-	-	2	10
4.	Building Workers	6	30	2	10
5.	Tailors	2	10	1	5
6.	Weight lifters	1	5	3	15



Out of 20 in Patients,

25% were beedi workers

30% were agricultural labours

30% were building workers

10% were tailors

5% were weight lifters

Out of 20 out patients,

10 were house wives

5% were tailors

15% weight lifters

40% were Beeds workers

20% Were Agricultural labours

10% Were building workers

#### 10. Socia – Economic status

**Table 10: Illustrates the socio-economic status**

S. No	Socio-economic Status	In Patients (IP)		Out patients (OP)	
		No. of cases	Percentage	No. of cases	Percentage
1.	Rich	-	-	-	-
2.	Middle class	6	30	7	35
3.	Poor	14	70	13	65

In both IP & OP study 70% of IP cases and 65% of OP cases are belonged to poor social-economic status. 30 of IP cases and 35% of OP cases are belonged to middle class.

## 11. Aetiological Factors:

**Table 11: Illustrates the Aetiological factors**

S. No	Precipitating factors	In Patients (IP)		Out patient (OP)	
		No. of cases	Percentage	No. of cases	Percentage
1.	Age	18	90	12	60
2.	Occupation	2	10	8	40
3.	Trauma	-	-	-	-
4.	Metabolic	-	-	-	-
5.	Congenital	-	-	-	-

Out of 20 In patients, age was the precipitating factor in 90% of cases and occupation in 10% cases.

Out of 20 out patients, age was the precipitating factor in 60% of cases and occupation in 40% of cases.

## 12. Mode of Onset:

**Table 12: Illustrates the mode of onset**

S. No	Mode of Onset	In Patients (IP)		Out patient (OP)	
		No. of cases	Percentage	No. of cases	Percentage
1.	Acute	-	-	-	-
2.	Chronic	20	100	20	100

Both IP and OP study, in 100% of cases are chronic onset

### 13. Duration of illness

**Table 13: Illustrates Duration of illness**

S. No	Duration of illness	In Patients (IP)		Out patient (OP)	
		No. of cases	Percentage	No. of cases	Percentage
1.	10 – 15 days	-	-	-	-
2.	15 – 30 days	-	-	-	-
3.	1 – 2 months	-	-	-	-
4.	2 – 3 months	-	-	-	-
5.	Above 3 months	20	100	10	100

Both IP and OP study, In 100% of cases the duration of illness is more than 3 months.

#### 14. Clinical Manifestations:

**Table14: Illustrates the Clinical Manifestations**

S. No	Signs and Symptoms	In Patients (IP)		Out patient (OP)	
		No. of cases	Percentage	No. of cases	Percentage
1.	Pain in the neck	20	100	20	100
2.	Stiffness in the neck	20	100	20	100
3.	Radiating pain in the Upper limbs	20	100	20	100
4.	Headache	-	-	-	-
5.	Giddiness	4	20	2	10
6.	Tingling sensation	13	65	11	55
7.	Numbness	12	60	12	60
8.	Constipation	12	60	15	75
9.	Feeling of heaviness of the body	-	-	-	-
10.	Burning sensation of the eyes	-	-	-	-
11.	Weakness of the upper limbs	16	80	10	50
12.	Mental depression	9	45	8	40

### Other associated Signs and Symptoms

13	Cough	-	-	-	-
14.	Loss of appetite	3	15	5	25
14.	Other Joint pain (Hip, Knee, Ankle)	9	45	10	50
16.	Fever	1	5	2	10
17.	Chest Pain	-	-	-	-
18.	Epigastric pain	-	-	-	-
19.	Epilepsy	-	-	-	-

#### Out of 20 In patients:-

100% of cases have pain in the neck, stiffness in the neck, radiating pain in the upper limbs.

65% of cases have tingling sensation and weakness of the upper limbs.

60% of cases have constipation

60% cases have numbness

45% of cases have mental depression

20% of cases have giddiness

45% of cases have other joint pain

15% of cases have loss of appetite

5% of cases have fever

None of the patients have suffered from cough, chest pain and epigastric pain.

**Out of 20 out patients:-**

75% of cases have constipation

50% of cases have weakness of the upper limbs

50% of cases have numbness and other joint pain.

55% of cases have tingling sensation

40 % of cases have mental depression

25% of cases have loss of appetite

10% of cases have fever

None of the patients have suffered from cough, chest pain and epigastric pain.

**15. Gnanendrium reference:**

**Table 15. Illustrates the condition of Gnanendrium**

Sl.No	Gnanendrium	In Patients (IP)		Out patient (OP)	
		No of cases	Percentage	No of cases	Percentage
1.	Mei	20	100	20	100
2.	Vai	6	30	12	60
3.	Kan	7	35	5	25
4.	Mookku	-	-	-	-
5.	Sevi	-	-	-	-

In both IP & OP study:-

Mei was affected in 100% of OP and IP cases.

Vai was affected in 30% of IP cases and 60% of OP cases

Kan was affected in 35% of IP cases and 25% of OP cases.

Mookku and sevi was found to be normal in all both OP and IP cases.

## 16. Kanmendrium

**Table 16: Illustrates Kanmendrium**

Sl.No	Kanmendrium	In Patients (IP)		Out patients (OP)	
		No of cases	Percentage	No of cases	Percentage
1.	Vai	-	-	-	-
2.	Kal	-	-	-	-
3.	Kai	20	100	20	100
	Eruvai	12	60	15	75
	Karuvai	-	-	-	-

In both IP and OP study,

Kai was affected in all 100% of cases. Eruvai was affected in 60% of IP cases and in 75% of OP cases.

## 17. Conditions of Mukkuttram

### a. Disturbance in Vadha:

Sl.No	Disturbance In Vadha	In Patients (IP)		Out patients (OP)	
		No of cases	Percentage	No of cases	Percentage
1.	Piranan	5	25	12	60
2.	Abanan	12	60	15	75
3.	Viyanan	20	100	20	100
4.	Udhanan	-	-	-	-
5.	Samanan	20	100	20	100
6.	Nagan	-	-	-	-
7.	Koorman	7	35	12	60
8.	Kirukaran	5	25	6	30
9.	Dhevathathan	5	25	4	20
10.	Dhananjeyan	-	-	-	-

In both IP and OP study.

Piranan was affected in 25% of IP cases and in 60% of OP cases.

Abanan was affected in 60% of IP cases and in 75% of OP cases.

Viyanan and samanan was affected 100% in both IP& OP cases

Koorman was affected in 35% of IP cases and 60% of OP cases

Kirukaran was affected in 25% of IP cases and in 10% of cases.

Dhevadhathan was affected in 25% IP cases and in 20% of OP cases.

Udhanan, nagan and dhananjeyan was found to be normal in all cases.



**b. Disturbances in Pitha:**

Sl.No	Disturbances in Pitha	In Patients (IP)		Out patients (OP)	
		No of cases	Percentage	No of cases	Percentage
1.	Anar Pitham	5	25	12	60
2.	Ranjagam	-	-	-	-
3.	Prasagam	-	-	-	-
4.	Alosagam	7	35	12	60
5.	Sathagam	20	100	20	100

In both IP and OP study.

Anarpitham was affected in 25% of IP cases and in 60% of OP cases.

Alosagapitham was affected in 35% of IP cases and in 60% of OP cases.

100% of IP & OP cases showed derangement of sathaga pitham.

Ranjaga pitham and prasaga pitham was found to be normal in all cases.

**c. Disturbances in Kabha:**

Sl.No	Disturbances in Kabha	In Patients (IP)		Out patients (OP)	
		No of cases	Percentage	No of cases	Percentage
1.	Avalambagam	20	100	20	100
2.	Kilethagam	5	25	12	60
3.	Pothagam	-	-	-	-
4.	Tharpagam	7	35	12	60
5.	Santhigam	20	100	20	100

In both IP and OP study,

Avalambagam was affected 100% in IP and OP cases, due to derangement of other kabha.

Kilethagam was affected in 25% of IP cases and in 60% OP cases.

Pothagam was found to be normal in all OP & IP cases.

Tharagam was affected in 35% of IP cases and in 20% of OP cases.

Santhigam was affected 100% in all and OP cases.

## 18. Involvement of Udal Thathukkal

**Table 18: Illustrates the Involvement of Udal Thathukkal**

Sl.No	Udal Thathukkai	In Patients (IP)		Out patients (OP)	
		No of cases	Percentage	No of cases	Percentage
1.	Saram	20	100	20	100
2.	Senneer	20	100	20	100
3.	Oon	20	100	20	100
4.	Kozhuppu	20	100	20	100
5.	Enbu	20	100	20	100
6.	Moolai	-	-	-	-
7.	Sukkilam / Suronitham	-	-	-	-

In both IP and OP study

Saram, Senneer, Oon, Kozhuppu and Enbu were affected in 100% of cases.

Moolai and Sukkilam/ Suronitham were found to be normal in 100% of cases

## 19. Condition of Envagai Thervugal

Table 19 Illustrates the conditions of Envagai Thervugal

Sl.No	Disturbances in Kabha	In Patients (IP)		Out patients (OP)	
		No of cases	Percentage	No of cases	Percentage
1.	Naa	14	70	9	45
2.	Niram	-	-	-	-
3.	Mozhi	-	-	-	-
4.	Vizhi	7	35	12	60
5.	Malam	12	60	15	75
6.	Moothiram	-	-	-	-
7.	Sparisam	20	100	20	100
8.	Naadi (Thontha naadi)	20	100	20	100

In both IP and OP study

Naa was affected in 70% of IP cases and in 45% of OP cases.

Vizhi was affected in 35% of IP cases and in 60% OP cases.

Malam was affected in 60% of IP cases and in 75% of OP cases.

Sparisam was affected in 100% of all cases

Niram, Mozhi and Moothiram was found to be normal in 100% of all cases.

Thontha Naadi was found in 100% of all cases.

## 20. Associated diseases:

**Table 20: Illustrates Gradation of Results**

Sl.No	Associated diseases	In Patients (IP)		Out patients (OP)	
		No of cases	Percentage	No of cases	Percentage
1.	Hypertension	-	-	-	-
2.	Osteo arthritis	9	45	10	50
3.	Anaemia	-	-	-	-
5.	Diabetes mellitus	1	5	-	-

Out of 20 In patients

45% of cases had osteoarthritis

5% cases had Diabetes mellitus

Out of 10 out patients

50% cases had osteoarthritis

## 21. Gradation of Results:

**Table 21: Illustrates Gradation of Results**

Sl.No	Grade	In Patients (IP)		Out patient (OP)	
		No of cases	Percentage	No of cases	Percentage
1.	Good	9	45	8	40
2.	Fair	10	50	10	50
3.	Poor	1	5	2	10

In both IP and OP study

45% of IP & 40% OP cases showed good response

50% of IP & 50% of OP cases showed fair response

5% of IP & 10% of OP cases showed poor response

## 22. Radiological studies

X – ray of cervical spine antero posterior, lateral views were taken before treatment in all the cases which has been diagnosed clinically as saganavadham and was referred for the opinion of radiologist.

In every case, the findings reveal a certain stage of cervical spondylosis. The following features was commonly found separately or combined with others.

**Table 22: Illustrates Radiological findings and its relative percentage**

Sl.No	Radiological findings	In Patients (IP)		Out patients (OP)	
		No of cases	Percentage	No of cases	Percentage
1.	Narrowing of IVS	20	100	20	100
2.	Osteophytic Changes	11	55	10	50
3.	Fusion of Osteophytes with adjacent vertebrae	1	5	1	10
4.	Loss of lordosis	10	50	8	40
5.	Excessive lordosis	1	5	1	10

In both IP and OP study

100% of cases showed narrowing of I.V.S.

55% of IP cases and 50% of OP cases are showed osteophytic changes.

5% of IP cases and 10% of OP cases are showed fusion of osteophytes with adjacent vertebrae.

50% of IP cases and 40% of OP cases are showed loss of lordosis.

5% IP cases and 10% of OP cases are showed Excessive lordosis.

**Observation of other clinical laboratory examination:**

At the time of admission and discharge, routine laboratory investigations (i.e.) in blood, total WBC count, differential WBC count, Erythrocyte sedimentation rate and haemoglobin estimation, blood sugar, urea and serum cholesterol were done. Urine examination was also done.

## DISCUSSION

Advancement in the modern technology has enabled our present day society to exist in a world where the consent of hardwork even moderate physical work is absolute and infashionable. The physical inactivity, the sedentary life style, food habits, environmental pollution has caused so many diseases. These lead to the weakening of our Locomotor system and eventually causes the Sagana vadham. Sagana vadham was also a clinical condition in those days as mentioned in “Yugivaidhya Sindhamani 800” which become a very common problem now a day

Saganavadham, one among the eighty varieties of vadha noigal resembles in its clinical features with cervical spondylosis in modern medicine. The main clinical features of sagana vadham are pain in the nap of the neck, radiating pain in shoulder and upper limb, mental depression, giddiness, tingling sensation over the upper limbs. This coincide with cervical spondylosis in modern medicine.

Twenty IP cases and 20 OP cases were selected for treatment according to the clinical features mentioned in “Yugi Vaidhaya Sindhamani 800”, siddha method of diagnosis was carried out. With the help of modern investigations the diagnosis was confirmed and treatment with the trial medicines is clearly observed. The observations are discussed here under.

### **1. Incidence with Sex distribution**

Out of 20 In Patients, 50% were males and 50 were females.

Out of 20 out patients, 30% were males and 70% were females.



## **2. Incidence with Age distribution**

Among the 20 In patients,

10% of cases were observed in the age group of 41 to 50 years.

35% of cases were observed in the age group of 51 to 60 years.

35% of cases were observed in the age group of 61 to 70 years.

20% of cases were observed in the age group of above to 70 years.

Among the 20 out patients,

15% of cases were observed in the age group of 31 to 40 years.

25% of cases were observed in the age group of 41 to 50 years.

40% of cases were observed in the age group of 51 to 60 years.

20% of cases were observed in the age group of 61 to 70 years.

During the course of entire study most of the cases came during the age group of 51-60 years.

## **3. Distribution according to Kalam**

Out of 20 In Patients,

80% of cases were in the pitha Kalam

20% of cases were in the Kabha kalam

Out of 20 out patients,

10 of cases were in the Vadha kalam

90% of cases were in the pitha kalam

During the course of entire study, most of the cases belonged to pitha kalam of 34-66 years which is commonly the period of degeneration authentically proved by the medical field.

## **4. Incidence with reference to constitution of the body**

In both of IP & OP study, 100% of cases were in the thontha thegi.

## **5. Incidence with reference to Gunam**

In both IP & OP study, 100% of cases were in Rajotham.

## **6. Incidence with reference to Religion**

In both IP & OP study,

100% of IP cases & 80% of OP cases were observed in Hindu.

20% of OP cases were observed in Muslim.

Majority of the cases belongs to Hindu in my clinical study.

## **7. Incidence with reference to Paruvakalam**

In both IP & OP study, 35% of IP cases and 75% of OP cases were observed in Munpanikalam.

In IP study, only 10% of cases were observed in Elavenil Kalam.

In both IP & OP study, 55% of IP cases & 25% of OP cases were observed in pinpani kalam

In Munpanikalam most of the patients came to me for treatment.

## **8. Incidence with reference to Thinai**

In both IP & OP study, 100% of cases were observed in marutham.

## **9. Incidence with reference to Occupation**

Out of 20 In patients,

25% were beedi workers

30% were agricultural labours

30% were building workers

10 % were tailors

Out of 20 Out patients,

10% were house wives

5% were tailors

15% weight lifters

40% were beedi workers

20% were Agricultural labours

10% were Building workers

Most of the patients occupation forced themselves to maintain the same posture throughout the day . This may be the reason for these patients are predisposed to develop sagana vadham.

#### **10.Incidence with reference of Socio-economic status**

In both IP & OP study 70% of IP cases and 65% of OP cases are belonged to poor socio-economic status. 30% of IP cases and 35% of OP cases are belonged to middle class.

In my clinical study most of the patients belonged to poor social economic status.

#### **11.Incidence with reference to Aetiological factors**

Out of 20 In patients, age was the precipitating factor in 90% of cases and occupation in 10% cases.

Out of 20 out patients, age was the-precipitating factor in 60% of cases and occupation in 40% of cases.

#### **12.Incidence with reference to Mode of onset**

Both IP and OP study, In 100% of cases are chronic onset

#### **13.Incidence with reference to Duration of illness**

Both IP and OP study, In 100% of cases the duration of illness is more than 3 months.

#### **14. Incidence with reference to clinical manifestations.**

Out of 20 In patients,

100% of cases have pain in the neck, stiffness in the neck, radiating pain in the upper limbs.

65% of cases have tingling sensation and weakness of the upper limbs.

60% of cases have constipation

60% of cases have numbness

45% of cases have mental depression

20% of case has giddiness

45% of cases have other joint pain

15% of cases have loss of appetite.

5% of cases have fever

None of the patients have suffered from cough, chest pain and epigastric pain.

Out of 20 out patients,

75% of cases have constipation.

50% of cases have weakness of the upper limbs.

50% of cases have numbness and other joint pain.

55% of cases have tingling sensation.

40% of cases have mental depression

25% of cases have loss of appetite

10% of cases have of fever.

None of the patients have suffered from cough, chest pain and epigastric pain.

The selected cases in my study had the following main clinical features of pain in the nap of the neck, stiffness in the neck, radiating pain in the upper limbs, tingling sensation, constipation, numbness, mental depression and giddness.

### **15.Incidence with reference to the Gnanendrium**

In both IP & OP study,

Mei was affected in 100% of OP and IP cases.

Vai was affected in 20% of IP cases and 60% of OP cases.

Kan was affected in 35% of IP cases and 25% of Op cases.

Mookku and sevi was found to be normal in all Op and IP cases.

In my clinical study mei was found to be affected in all 100% of cases.

## **16. Incidence with reference to the Kanmendrium**

In both IP and OP study,

Kai was affected in all 100% of cases.

Eruvai was affected in 60% of IP cases and in 75% of OP cases.

Kai which is one of the kanmendrium was affected completely in all cases.

## **17. Condition of Mukkuttram**

### **17 .a. Disturbannce in Vadha**

In both IP and OP study,

Pranan was affected in 25% of Ip cases and in 60% of Op cases which produced indigestion.

Abanan was affected in 60% of IP cases and in 75% of OP cases which produced constipation.

Viyanan and Samanan was affected 100% in both IP & Op cases which produced pain, restricted movement of the neck, pain in the upper limb, numbness of tingling sensation.

Koorman was affected in 35% of IP cases and 60% of OP cases, which produced diminished vision.

Kirukaran was affected in 25% of IP cases and in 10% of OP cases, which produced loss of appetite.

Dhevadhathan was affected in 25% IP cases and in 20% of OP cases, which produced lethargy & disturbed sleep

Udhanan, nagan and dhananjeyan was found to be normal in all cases.

### **17. b. Disturbances in Pitham**

In both IP and OP study,

Anarpitham was affected in 25% of IP cases and in 60% of OP cases, which produced loss of appetite.

Alosagapitham was affected in 35% of IP cases and 60% of Op cases, which produced impaired vision.

100% of IP & OP cases showed derangement of sathaga pitham which produced difficulties in performing regular duties because of pain in the neck and upper limbs.

Ranjaga pitham and prasaga pitham was found to be normal in all cases.

### **17. c. Disturbances in Kabha**

In both IP and Op study,

Avalambagam was affected 100% in IP and OP cases, due to derangement of other kabha.

Kilethagam was affected in 25% of IP cases and In 60% Op cases which produced loss of appetite.

Pothagam was found to be normal in all OP and IP cases.

Tharpagam was affected in 35% of IP cases and in 20% Of OP cases, which produced burning sensation of eyes.

Santhigam was affected 100% in all IP and OP cases which produced pain and stiffness in the neck.

### **18. Incidence with reference to the Udal thathukkal**

In both IP and OP study,

Saaram was affected in all cases that produced the symptoms like lethargic and mental depression.

Senneer was affected in cases that produced the Symptoms like loss of appetite.

Oon, Kozhuppu and Enbu were affected in all cases that produced the symptoms like difficult to move the neck, and osteophytic changes in cervical region of the vertebral column.

## **19. Incidence with reference to the Envagai thervugal**

Under the study of naadi, all the 40 cases showed Thontha naadi, which Vadha nadi was, predominant (100%).

All of the 100% patients had pain in the nap of the neck, stiffness in the neck, Radiating pain in the neck, Tingling sensation and numbness over the upper limbs showed the affected sparisam in 100%.

Diminished vision showed the affected vizhi in 35% of IP cases and 60% of Op cases.

Malam was affected in 60% of IP cases and 75% of OP cases, which produced constipation.

Niram, mozhi and moothiram was found to be normal in all 40 cases.

## **20. Incidence with reference to the associated diseases**

In both IP and Op study.

45% of IP cases and 50% of OP cases had osteoarthritis.

5% of IP cases had diabetes mellitus.

## **21. Incidence with reference to Gradation of results**

In both IP and OP study.

45% of IP & 4% of OP cases showed good response.

50% of IP & 50% of OP cases showed fair response

5% of IP & 10% of Op cases showed poor response.

## **22. Radiological studies**

In both IP and OP study,

100% of cases showed narrowing of I.V.S.

55% of IP cases and 50% of OP cases showed osteophytic changes.

5% of IP cases and 10% of OP cases showed fusion of osteophytes with adjacent vertebrae.

5% of IP cases and 40% of OP cases showed loss of lordosis.

5% IP cases and 10% of OP cases showed Excessive lodosis.

### **Modern aspects**

Routine clinical laboratory investigation (Blood, Urine) were done on admission to rule out other abnormalities.

As per the report of the radiologist the pathological changes like degenerative osteophytic and osteoporotic changes, lipping, narrowing of inter vertebral foramen, loss of lordosis were analysed to confirm sagana vadham.

X-rays taken after treatment in a few patients who had been clinically relieved did not show any change (or) improvement in the radiologic features like osteophyte etc.,.

### **Treatment**

As sagana vadham is a vadha disease with degenerative effects and so the treatment is aimed to prove relief from the symptoms. Following medicine were administrated to the patient from the time of admission and continued till the symptoms were relieved.

1. Agni choornam 1-2 gm twice daily with hot water- Internally.
2. Maasha thylam - External use.

Mild yogic exercises in the morning were advised after some degree of relief from pain with the trial medicine for a few days.

From the pharmacological analysis the trial medicine was found to possess the significant anti inflammatory action. Also clinically the trial medicine was effective in reducing the pain in the nap of the neck, neck stiffness, radiating pain etc,



## SUMMARY AND CONCLUSION

Twenty cases with Saganavadham were diagnosed clinically and admitted in In patients ward and treated with the trial medicines. Another 20 cases were treated as out patients. All the inpatients were followed in the out patient department after discharge.

The clinical diagnosis was done on the basis of clinical features described in “Yugi Vaidhya Sindhamani-800”

The trial medicines choosen for the clinical study were.

### **Agni Choornam:**

1-2 gm thrice daily with hot water.

### **Maasha thylam:**

As external application.

The various siddha aspects of examinations of this disease were carried out.

The clinical features of saganavadham described in various Siddha literatures were correlated with cervical spondylosis.

The trial medicines corrected the deranged uyir thathukkal and udal thathukkal. So the patients were relieved from the symptoms like neck pain, stiffness, radiating pain to the upper limbs. This confirms the efficacy of the trial medicines in curing the disease, normalizing range of movements in the neck and maintaining the normal health conditions also.

The results were found to be good relief from the symptoms within 10 days of treatment in mild cases. In moderate cases good relief was found between 15-20 days of treatment. In long standing cases fair result were found after 20days treatment.

The relief (or) improvement was observed only clinically and there was no change in radiological findings.

As per our siddha material medica the ingredients of the trial medicines were found to have the property of controlling Vadha diseases.

No toxic effects were noticed during the treatment period. All the drugs were put to use only after careful purification process laid down for them individually.

Because of the encouraging results, clinically the study may be undertaken with the same medicine for a prolonged period in a large number of cases and it may throw new lights for the treatment of Vadha diseases especially for Sagana vadham.

**ANNEXURE - I**  
**PREPARATION OF TRIAL MEDICINES**  
**INTERNAL MEDICINE**

அக்கினி சூரணம் ( அகத்தியர் வைத்திய ரத்தின சுருக்கம்).

- ப.எண்.68

**தேவையான சரக்குகள்**

கொடிவேலி	}	- வகைக்கு 1 பலம்
திரிகடுகு		
ஓமம்		
சிறுதேக்கு		
யானைத்திப்பிலி		
கோஷ்டம்		
சோற்றுப்பு		
இந்துப்பு		
பெருங்காயம்		- ¼ பலம்
வசம்பு		- ¼ பலம்
கடுகு பொடி		- ½ பலம்
சர்க்கரை		- சம அளவு

**செய்முறை**

மேற்கூறிய சரக்குகளைசுத்தி செய்து பொடித்து அத்துடன் சமஅளவு சர்க்கரை சேர்த்து சுரணம் செய்து கொள்ளவும்.

**தீரும் நோய்கள்**

வாத நோய்கள் தீரும்

## அக்னி சூரணம்

### 1. கொடிவேலி (*Plumbago zeylanica*)

வேறு பெயர்கள்	-	வெண்சித்திர மூலம், வெண் கொடி மூலம்
பயன்படும் உறுப்பு	-	வேர்
சுவை	-	கார்ப்பு, விறுவிறுப்பு
தன்மை	-	வெப்பம்,
பிரிவு	-	கார்ப்பு

செய்கை:

முறைவெப்பகற்றி	-	Anti periodic
வியர்வையுண்டாக்கி	-	Diaphoretic

### 2. சுக்கு (*Zingifer officinalis*)

வேறுபெயர்கள்	-	உலர்ந்த இஞ்சி, விடமூடிய அமிர்தம் சுண்டி, நவசுறு, நாகரம்வேர்க்கொம்பு
பயன்படும் உறுப்பு	-	கிழங்கு (உலர்ந்து)
சுவை	-	கார்ப்பு
தன்மை	-	வெப்பம்,
பிரிவு	-	கார்ப்பு

செய்கை:

வெப்பமுண்டாக்கி	-	Stimulant
பசித்தீதூண்டி	-	Stomachic
அகட்டுவாய் அகற்றி	-	Carminative

### 3.மிளகு (*Piper nigrum*)

வேறுபெயர்கள்	-	சருமபந்தம், மலையாளி, கறி, காயம்
பயன்படும் உறுப்பு	-	விதை, கொடி
சுவை	-	கைப்பு, கார்ப்பு,
தன்மை	-	வெப்பம்
பிரிவு	-	கார்ப்பு

செய்கை :

காறலுண்டாக்கி	-	Acrid
அகட்டுவாய் அகற்றி	-	Carminative

முறைவெப்பகற்றி	-	Anti Periodic
தடிப்புண்டாக்கி	-	Rubefacient
வெப்பமுண்டாக்கி	-	Stimulant
வீக்கங் கரைச்சி	-	Resolvent
வாதமடக்கி	-	Antivatha

#### 4. திப்பிலி (Piper longun)

வேறுபெயர்கள்	-	ஆதிமருந்து, கோழையறுக்கி,காமன்,பாணம் உண்சரம்
பயன்படும் உறுப்பு	-	காய், அரிசி
சுவை	-	கார்ப்பு
தன்மை	-	வெப்பம்
பிரிவு	-	இனிப்பு
செய்கை:		
வெப்ப முண்டாக்கி	-	Stimulant
அகட்டுவாய் அகற்றி	-	Carminative

#### 5. சிறுதேக்கு (Clerodendrum Serratum)

வேறுபெயர்	-	கண்டுபாரங்கி
பயன்படும் உறுப்பு	-	இலை, வேர்
சுவை	-	கைப்பு, துவர்ப்பு
தன்மை	-	வெப்பம்
பிரிவு	-	கார்ப்பு
செய்கை:		
வெப்பமுண்டாக்கி	-	Stimulant
தாது வெப்பகற்றி	-	Sedative

#### 6. ஓமம் (Carum Copticum)

வேறுபெயர்கள்	-	அசமோதம், திப்பியம்
பயன்படும் உறுப்பு	-	விதை
சுவை	-	கார்ப்பு
தன்மை	-	வெப்பம்
பிரிவு	-	கார்ப்பு

செய்கை:

பசித்தீத்ராண்டி	-	Stomachic
இசிவகற்றி	-	Antispasmodic
அகட்டுவாய் அகற்றி	-	Carminative
அழுகல் அகற்றி	-	Antiseptic
வெப்பமுண்டாக்கி	-	Stimulant
உரமாக்கி	-	Tonic
உமிழ்நீர் பெருக்கி	-	Sialogogue

### 7. யானைத் திப்பிலி (Scindapsus Officinalis)

வேறுபெயர்கள்	-	அத்திதிப்பிலி, அலகம்
பயன்படும் உறுப்பு	-	காய், அரிசி
சுவை	-	கார்ப்பு
தன்மை	-	வெப்பம்
பிரிவு	-	கார்ப்பு

செய்கை:

பசித்தீத்ராண்டி	-	Stomachic
வெப்பமுண்டாக்கி	-	Stimulant
புழுக்கொல்லி	-	Anthelmintic
வியர்வை பெருக்கி	-	Diaphoretic

### 8. கோஷ்டம் (Costus Speciosus)

வேறுபெயர்கள்	-	குரா, ஒலி
பயன்படும் உறுப்பு	-	வேர்
சுவை	-	கைப்பு, விறுவிறுப்பு
தன்மை	-	வெப்பம்
பிரிவு	-	கார்ப்பு

செய்கை

பசித்தீத்ராண்டி	-	Stomachic
கோழையகற்றி	-	Expectorant
உரமாக்கி	-	Tonic
வெப்பமுண்டாக்கி	-	Stimulant
வியர்வைபெருக்கி	-	Diaphoretic

## 9. பெருங்காயம் (Ferula asafoetida)

வேறுபெயர்கள்	-	அத்தியாகிரகம், கந்தி, காயம், இரணம், இராமடம்
பயன்படும் உறுப்பு	-	பிசின்
சுவை	-	கைப்பு, கரகரப்பு
தன்மை	-	வெப்பம்
பிரிவு	-	கார்ப்பு

செய்கை:

வெப்பமுண்டாக்கி	-	Stimulant
அகட்டுவாய் அகற்றி	-	Carminative
இசிவகற்றி	-	Sedative
கோழையகற்றி	-	Expectorant
மலமிளக்கி	-	Laxative
புழுக்கொல்லி	-	Anthelmintic
சிறுநீர்பெருக்கி	-	Diuretic
காமம்பெருக்கி	-	Aphrodisiac
ருதுவுண்டாக்கி	-	Emmenagogue

## 10. வசம்பு (Acorus Calamus)

வேறு பெயர்கள்	-	உக்கிரம், வசம், சுடுவான், உரைப்பான், பேர் சொல்லா மருந்து, பிள்ளை மருந்து
பயன்படும் உறுப்பு	-	வேர்
சுவை	-	கார்ப்பு
தன்மை	-	வெப்பம்
பிரிவு	-	கார்ப்பு

செய்கை:

வெப்பமுண்டாக்கி	-	Stimulant
பசித்தீதூண்டி	-	Stomachic
முறைவெப்பகற்றி	-	Antiperiodic
அகட்டுவாய் அகற்றி	-	Carminative
குமட்டலெழுப்பி	-	Nauseant

வாந்தியுண்டாக்கி	-	Emetic
தொற்றுபுழுவகற்றி	-	Dis infectant
நுண்புழக்கொல்லி	-	Germicide

### 11. கடுகு (Brassica Juncea)

வேறுபெயர்	-	ஐயவி
சுவை	-	கார்ப்பு
தன்மை	-	வெப்பம்
பிரிவு	-	கார்ப்பு

செய்கை:

வாந்தியுண்டாக்கி	-	Emetic
வெப்பமுண்டாக்கி	-	Stimulant
தடிப்புண்டாக்கி	-	Rubefacient
கொப்புளமெழுப்பி	-	Vesicant
செரிப்புண்டாக்கி	-	Digestive
சிறுநீர் பெருக்கி	-	Diuretic

### 12. சீனி சர்க்கரை (Saccharum Officinarum)

சுவை	-	இனிப்பு
தன்மை	-	சீதம்
பிரிவு	-	இனிப்பு

செய்கை:

அழுகல் அகற்றி	-	Antiseptic
உள்ளழலாற்றி	-	Demulcent

### 13. சோற்றுப்பு

Sodii Chloridum, Sodium Chloride

Common Salt, Table Salt

வேறுபெயர்கள்	-	கறியுப்பு, வீட்டுப்பு, கடலுப்பு, இலவணம், சமுத்திர இலவணம்
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சுத்தி - உப்பை கடல் நீர் அல்லது மழை நீர் விட்டு கரைத்து வடிகட்டி காய்ச்சி குழம்பு பக்குவத்தில் இறக்கி வெயிலில் காயவைத்து எடுக்க அவ்வுப்பு உறைந்து சுத்தியாகும்.

செய்கை:

பசித்தீதூண்டி - Stomachic  
மலம் போக்கி - Laxative  
வாந்தியுண்டாக்கி - Emetic  
புழுக்கொல்லி - Anthelmintic  
முறைவெப்பகற்றி - Antiperiodic

பொதுக்குணம்

அளத்திலுனலி நல்லுபனல்வாதம் மறற்றுங்  
களத்து நோய் தன்னக் களையுங் - கிளைத்த கப  
ஆசுடைய வல்லைநோய் அஷ்டகுன்மமும் பேரக்குங்  
காசினியுள் மாதே கழறு.

14. இந்துப்பு

Sodii Chloridum Impura  
Sodium Chloride Impura

வேறுபெயர்கள் - சைந்தவம், சிந்தூரம், சந்திரனுப்பு,  
மதிசூர்மை, மிந்தாச் சொல்

சுத்தி - காடியில் 3 நாள் ஊறப்போட்டு சூரிய  
ஒளியில் உலர்த்தி எடுக்க சுத்தியாகும்

செய்கை:

அகட்டுவாய் அகற்றி - Carminative  
சிறுநீர்பெருக்கி - Diuretic  
பசித்தீதூண்டி - Stomachic

பொதுக்குணம்

அட்டகுன்ம மந்தம் அசிக்கரஞ்சூர் சீதபித்தந்  
துட்ட வையம் நாடிப்புண் டோடங்கள் கெட்டமலக்  
கட்டுவிட விந்தையக் காமிய நோய் வன் கரப்பான்  
விட்டு விட விந்துப்பை விள்.

# EXTERNAL MEDICINE

மாஷ தைலம்

(கோஷாயி அனுபவ வைத்திய தேவ ரகசியம்)

பக்கம் எண்- 428

தேவையான சரக்குகள்

உளுந்து	- 64 தோலா
பசும்பால்	- கியாழத்திற்கு 4 பங்கு
நல்லெண்ணெய்	- 64 தோலா
பெரிய சோம்பு	} - வகைக்கு 1 தோலா
இந்துப்பு	
சிற்றரத்தை	
அதிமதுரம்	
சிற்றாமுட்டி	
சுக்கு	
மிளகு	
திப்பிலி	
நெரிஞ்சில்	

செய்முறை:

உளுந்தை 256 தோலா எடையுள்ள ஜலத்தில் போட்டு நாலிலொன்றாக காய்ச்சி கியாழம் வைத்து அந்த கியாழத்திற்கு 4 பங்கு பசும்பாலும், பிறகு நல்லெண்ணெயும் சேர்த்து மேற்கூறிய கடைச்சரக்குகளை கற்கம் செய்து அதில் கலந்து தைலம் பக்குவமாக காய்ச்சி எடுத்துக் கொள்ளவும்.

தீரும் நோய்கள்:

கழுத்து வலி, இடுப்பு வலி, பட்சவாதம், செவிடு, திமிர்ரோகம், ஆகியன தீரும்.

மாஷ தைலம்

1. உளுந்து (Phaseiow Radiata)

பயன்படும் உறுப்பு	- விதை வேர்
சுவை	- இனிப்பு
தன்மை	- வெப்பம்
பிரிவு	- இனிப்பு

செய்கை:

உள்ளழலாற்றி	-	Demulcent
குளிர்ச்சி உண்டாக்கி	-	Refrigent
காமம்பெருக்கி	-	Aphrodisiac
பால்பெருக்கி	-	Lactagogue
உரமாக்கி	-	Tonic
உடலுரமாக்கி	-	Nutrient

## 2. பெரியசோம்பு (Pimpinella anisum )

வேறுபெயர்கள்	-	பெருஞ்சீரகம், வெண்சீரகம்
பயன்படும் உறுப்பு	-	விதை, வேர்
சுவை	-	மணமுடன் கூடிய கார்ப்பும், இனிப்பும்
தன்மை	-	வெப்பம்
பிரிவு	-	கார்ப்பு

செய்கை:

அகட்டுவாய் அகற்றி	-	Carminative
பசித்தூண்டி	-	Stomachic

## 3. சிற்றரத்தை (Alpinia Officinarum)

பயன்படும் உறுப்பு	-	வேர்
சுவை	-	கார்ப்பு
தன்மை	-	வெப்பம்
பிரிவு	-	கார்ப்பு

செய்கை:

கோழையகற்றி	-	Expectorant
வெப்பகற்றி	-	Febrifuge
பசித்தூண்டி	-	Stomachic

## 4. அதிமதுரம் (Glycyrrhiza glabra)

பயன்படும் உறுப்பு	-	இலை, வேர்
சுவை	-	இனிப்பு, கைப்பு
தன்மை	-	வெப்பம்,
பிரிவு	-	கார்ப்பு

வேர்

சுவை	-	இனிப்பு
தன்மை	-	சீதம்
பிரிவு	-	இனிப்பு

செய்கை:

வறட்சியகற்றி	-	Emollient
உள்ளழலாற்றி	-	Demulcent
கோழையகற்றி	-	Mild Expectorant
மலமிளக்கி	-	Laxative

#### 5. சிற்றாமுட்டி (Pavonia Zeylanica)

வேறுபெயர்கள்	-	சிறுகுறுந்தொட்டி, சிறுந்தொட்டி குறுந்தொட்டி
பயன்படும் உறுப்பு	-	சமூலம்
சுவை	-	துவர்ப்பு
தன்மை	-	வெப்பம்
பிரிவு	-	இனிப்பு

செய்கை:

வறட்சியகற்றி	-	Emollient
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#### 6. சுக்கு (Zingifer officinalis)

வேறுபெயர்கள்	-	உலர்ந்த இஞ்சி, விடமூடிய அமிர்தம் சுண்டி, நவசுறு, நாகரம், வேர்க்கொம்பு
பயன்படும் உறுப்பு	-	கிழங்கு (உலர்ந்து)
சுவை	-	கார்ப்பு
தன்மை	-	வெப்பம்,
பிரிவு	-	கார்ப்பு

செய்கை:

வெப்பமுண்டாக்கி	-	Stimulant
பசித்தீதுண்டி	-	Stomachic
அகட்டுவாய் அகற்றி	-	Carminative

### 7.மிளகு (Piper nigrum)

வேறுபெயர்கள்	-	சருமபந்தம், மலையாளி, கறி, காயம்
பயன்படும் உறுப்பு	-	விதை, கொடி
சுவை	-	கைப்பு, கார்ப்பு
தன்மை	-	வெப்பம்
பிரிவு	-	கார்ப்பு

செய்கை:

காறலுண்டாக்கி	-	Acrid
அகட்டுவாய் அகற்றி	-	Carminative
முறைவெப்பகற்றி	-	Anti Periodic
தடிப்புண்டாக்கி	-	Rubefacient
வெப்பமுண்டாக்கி	-	Stimulant
வீக்கங் கரைச்சி	-	Resolvent
வாதமடக்கி	-	Antivatha

### 8. திப்பிலி - (Piper longum)

வேறுபெயர்கள்	-	ஆதிமருந்து, கோழையறுக்கி காமன், பாணம் உண்சரம்
பயன்படும் உறுப்பு	-	காய், அரிசி
சுவை	-	கார்ப்பு
தன்மை	-	வெப்பம்
பிரிவு	-	இனிப்பு

செய்கை:

வெப்ப முண்டாக்கி	-	Stimulant
அகட்டுவாய் அகற்றி	-	Carminative

### 9. நெரிஞ்சில் (Tribulus Terrestris)

பயன்படும் உறுப்பு	-	செடிமுழுமையும்
சுவை	-	துவர்ப்பு, இனிப்பு
தன்மை	-	சீதம்
பிரிவு	-	இனிப்பு

செய்கை:

குளிர்ச்சியுண்டாக்கி	-	Refrigerant
சிறுநீர்பெருக்கி	-	Diuretic
உள்ளழலாற்றி	-	Demulcent
உரமாக்கி	-	Tonic
ஆண்மைபெருக்கி	-	Aphrodisiac
துவர்ப்பி	-	Astringent

### 10. நல்லெண்ணெய் (Gingelly Oil)

செய்கை:

உள்ளழலாற்றி	-	Demulcent
மலமிளக்கி	-	Laxative
உடலுரமாக்கி	-	Nutrient
வறட்சியகற்றி	-	Emollient

## ANNEXURE- II

### BIO – CHEMICAL ANALYSIS OF AGNI CHOORANAM

#### PREPARATION OF THE EXTRACT

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

#### Qualitative Analysis

S.no	Experiment	Observation	Inference
1.	<b><u>TEST FOR CALCIUM</u></b> 2ml of the above prepared extract is taken in a clean test tube. Add 2 ml of 4% ammonium oxalate solution is added to it.	A white precipitate is formed.	Indicates the presence of calcium.
2.	<b><u>TEST FOR SULPHATE:</u></b> 2ml of the extract is added to 5% barium chloride solution.	A white precipitate is formed.	Indicates the presence of sulphate.
3.	<b><u>TEST FOR CHLORIDE</u></b> The extract is treated with silver nitrate solution.	A white precipitate is formed.	Indicates the presence of chloride.
4.	<b><u>TEST FOR CARBONATE</u></b> The substance is treated with concentrated HCL.	No brisk effervescence is formed.	Absence of carbonate.

5.	<b><u>TEST FOR STARCH</u></b> The extract is added with weak iodine solution	No blue colour is formed	Absence of starch
6.	<b><u>TEST FOR IRON</u></b> <b><u>FERRIC:</u></b> The extract is treated with glacial acid and potassium ferro cyanide.	No blue colour is formed.	Absence of ferric iron.
7.	<b><u>TEST OF IRON :</u></b> <b><u>FERROUS:</u></b> The extract is treated with concentrated Nitric acid and ammonium thio cyanate.	Blood red colour is formed.	Indicates the presence of ferrous Iron in sorace
8.	<b><u>TEST FOR PHOSPHATE</u></b> The extract is treated with ammonium molybdate and concentrated nitric acid.	No Yellow precipitate is formed.	Absence of phosphate.
9.	<b><u>TEST FOR TANNICACID</u></b> The extract is treated with ferric chloride	No blue black precipitate is formed.	Absence of Tannic acid.
10.	<b><u>TEST FOR ALBUMIN</u></b> The extract is treated with Esbach's reagent	No yellow black precipitate is formed.	Absence of albumin.
11.	<b><u>TEST FOR UNSATURATION</u></b> Potassium permanganate solution is added to the extract.	It gets decolourised.	Indicate the Presence of unsaturated compound.



12.	<p><b><u>TEST FOR THE REDUCING SUGAR</u></b></p> <p>5ml of benedict's qualitative solution is taken in a test tube and allowed to boil for 2 mts and added 8-10 drops of the extract and again boil it for 2 mts.</p>	No colour change occurs.	Absence of reducing sugar.
13.	<p><b><u>TEST FOR AMINO ACID:</u></b></p> <p>One or two drops of the extract is placed on a filter paper and dried it well after drying, 1% ninhydrin is sprayed over the same and dried it well.</p>	Violet colour is formed.	Indicate the Presence of Amino acid
14.	<p><b><u>TEST FOR MERCUREY:</u></b></p> <p>The extract is treated with ammonia and boil (fill the ammonia aeses off) and then potassium Iodide is (Iv.coln) added</p>	A scarlet Precipitate Is formed	It indicates The presence Of mercury

**ANNEXURE – III**  
**PHARMACOLOGICAL ANALYSIS**  
**ACUTE ANTI-INFLAMMATORY STUDIES ON AGNI**  
**CHOORNAM**

**Aim**

To study the acute anti-inflammatory effect on Agni Choornam

**Preparation of trial medicine**

1gm of the Agni Choornam was taken and dissolved in 10ml of hot water. A dose of 1ml was given to each rat. This 1ml contains 100mg of the trial medicine.

**Procedure**

The anti-inflammatory activity of Agni Choornam was studied in healthy albino rats weighing 100-150gms. Nine rats were collected and divided into three groups each containing three rats.

First group was kept controlled by giving distilled water of 2ml/100gm of body weight. The second group was given Ibuprofen as dose of 20mg/100gm of body weight. The third group received the trial medicine Agni Choornam of 200mg/100gm of body weight.

Before administration of trial medicine, the hindpaw volume of all rats were measured. This was done by dipping the hindpaw upto tibiotarsal junction, into mercury plethysmography. While dipping the hindpaw, by pulling the Syringe piston, the level of mercury in the center small tube was made to coincide with red marking and reading was noted from the plethysmograph.

Soon after the measurement, the medicines were administered orally. One hour later, a subcutaneous injection of 0.1ml of 1% (W/V) carrageen in water was made into plantar surface of both hind paw of each rat.

Three hours after carrageenin injection, hindpaw volume was measured once again. The difference between the initial and final volume was calculated and compared.

This method is more suitable for studying the anti-inflammatory activity in acute inflammation. The values are given in the table.

**Effect of AGNI CHOORNAM:**

<b>Group</b>	<b>Dose/100gm Body weight</b>	<b>Initial Reading In secs</b>	<b>Final Readings</b>	<b>Mean Difference</b>	<b>% of inflammation</b>	<b>% of inhibition</b>
Control Water	2 ml	0.55	1.4	0.85	100	NIL
Standard Ibuprofen	20 mg	0.55	0.85	0.3	35.2	64.8
Agni Chooram	200 mg	0.5	0.7	0.2	23.5	76.5

**Result:**

From the above experiment it was concluded that the Agni Chooram has **significant** acute anti inflammatory action.

# **CHRONIC ANTI-INFLAMMATORY**

## **ACTIVITY ON RATS**

### **BY COTTON – PELLETS GRANULOMA METHOD**

#### **Aim**

To study the chronic anti-inflammatory activity of the medicine Agni Choornam in the rats by cotton pellets implantation (granuloma) methods.

#### **Preparation of the trial medicine:**

1gm of Agni Choornam was taken and dissolved in 10ml of hot water. A dose of 1ml was given to each rat. This 1ml contains 100mg of the trial medicine.

#### **Procedure:**

Cotton pellets each weighing 10mg were prepared and sterilised in the autoclave for about one hour under 5 pounds atmospheric pressure. Nine albino rats weighing 150-200gms were selected and divided into 3 groups each containing 3 rats. Each rat was anaesthetized with ether and cotton pellets were implanted subcutaneously in the groin two on each side.

From the day of implantation a group of animals received Agni Choornam in a dose of 200mg/100gm of body weight. The standard group of animals received ibuprofen in a dose of 20mg/100gm of body weight.

On the eighth day the rats were sacrificed and the pellets were removed, dried to concordant weight and weighed. They were put in an incubator at 60 -80<sup>0</sup>c and then the weight of the granulation tissue was determined separately.

**Effect of Agni Choornam:**

<b>Group</b>	<b>Dose/100gm of body weight</b>	<b>Pellet Weight</b>	<b>Pellet weight of granuloma of medicines</b>	<b>Percentage inflammation</b>	<b>Percentage inhibition</b>
Control (Water)	2ml	10mg	250mg	100%	NIL
Standard (Ibuprofen)	20mg	10mg	56mg	22.4	77.6
Agni Choornam	200mg	10mg	100mg	40	60

**Result:**

From the above experiment it was concluded that the Agni Choornam has **significant** chronic anti inflammatory action.

## **ANALGESIC STUDY ON AGNI CHOORNAM**

### **(In Albino rats by hot water bath method)**

#### **Aim**

To study the analgesic effect of Agni Choornam

#### **Preparation of the trial medicine**

1gm of Agni Choornam was taken and dissolved in 10ml of the hot water. A dose of 1ml was given to each rat.

#### **Procedure**

Three groups of healthy albino rats on both sexes were selected. Each group having 3 rats, weighing between 100 to 150gm. The hot water bath was maintained at the temperature of 55<sup>0</sup>C.

The tail was dipped into the bath, and the time taken for each rat to remove its tail from the hot water bath was noted. The rat which taken more than 5sec for removal of its tail from hot water bath was excluded from the experiment.

First group was kept controlled by giving distilled water of 1ml per 100mg of body weight.

The second group was given paracetamol 20 mg per 100mg of body weight.

The third group was given trial medicine.

30 minutes after Medicines administration, the tail of each rat was dipped into hot water bath one by one. The time taken for each rat to remove its tail was noted. The whole experiment was repeated after 30 minutes.

The results of control, standard and trial medicine groups were tabulated and compared.

### Effect of Agni Choornam

S.No	Groups	Dose/100gm Body weight	Initial reading	After Medicines Administration	
				After ½ hr	After 1 hr
1.	Control (water)	2ml	2 secs	2.5.	2.5 secs
2.	Std (Paracetamol)	20mg	2 secs	5.5	6.7 secs
3.	Agni Choornam	200 mg	2secs	3.5 secs	5.4 secs

### Inference

It is observed that Agni Choornam has **significant** analgesic action.

## ANTIPYRETIC STUDY OF AGNI CHOORNAM

### Aim

To study the antipyretic activity of Agni Choornam

### Procedure

Nine albino rats were selected and divided equally into 3 groups. All the rats were made hyperthermic by subcutaneous injection of 12% suspension of yeast at a dose of 1ml/100gm of the body weight. 10 hours later one group was given distilled water by gastric tube at a dose of 1ml and kept as control. The second group was received the standard drug paracetamol at a dose of 20mg/ml. The third group was given the test medicine at a dose of 100mg/ml.

The mean rectal temperature for the 3 groups were recorded at 0' hour, 1 ½ hours, 3 hours and 4 ½ hours after the drug administration. The difference between the mean temperature of the control, standard and test drug groups was measured.

Tabulation of the results were recorded.

### Tabulation of results obtained

Medicines	Dose/100gm Body weight	Initial temp	After 1½ hour	After 3 hours	After 4 ½ hours	Remarks
Control (Water)	1ml	36.0 37.0`	36.0 37.0	36.0 38.0	37.0 39.0	38.0
Standard (Paracetamol)	20 mg	37.0 38.0	37.0 37.0	36.5 36.5	35.0 34.0	34.5
Agni Choornam	200mg	38.0 37.0	37.0 37.0	36.5 36.0	36.0 35.0	35.5

### Inference:

From the above experiment it was concluded that the Agni Choornam has **significant** antipyretic action.



## **ACUTE ANTI-INFLAMMATORY STUDIES ON MAASHA THYLAM**

### **Aim**

To study the acute anti inflammatory effect on Maasha thylam.

### **Procedure**

The anti inflammatory activity of Maasha thylam was studied in healthy albinorats weighing 100-150gms. Nine rats were selected and divided into three groups each containing three rats.

The first group was applied with distilled water 2 ml externally and was kept as control. The second group was applied with ibuprofen gel externally. The third group was applied with the trial medicine externally for once in 15 min for 2 hours.

Before applications of the medicine, the hind paw up to the tibiotarsal junction is dipped in a mercury plethysmography. While dipping the hindpaw by pulling the syringe piston, the level of mercury in the center small tube was made to coincide with red marking and reading was noted from the plethysmograph.

Subcutaneous injection of 0.1ml W/V of carrageenin in water and injected in to plantar surface of both the hindpaw of each rat. Then the trial medicine is painted on the hindpaw once in 15min for 2 hours. Two hours after injection, the hindpaw volume was measured once again. The difference between the initial and final volumes would show the amount of inflammation. Taking the volume in the control group as inflammation or anti inflammatory effect of the medicine was calculated. Tabulations of the results were recorded.

<b>Group</b>	<b>Dose/100gm Body weight</b>	<b>Initial Reading In secs</b>	<b>Final Readings</b>	<b>Mean Difference</b>	<b>% of inflammation</b>	<b>% of inhibition</b>
Control Water	2 ml	0.55	1.4	0.85	100	NIL
Standard Ibuprofen	20 mg	0.55	0.85	0.3	35.2	64.8
Maasha thylam	External	0.5	0.8	0.3	35.2	64.8

**Result:**

From the above experiment it was concluded that the Maasha thylam has **significant** acute anti inflammatory action.

## **ANNEXURE-IV**

**GOVERNMENT SIDDHA MEDICAL COLLEGE AND HOSPITAL**

**POST GRADUATE RESEARCH CENTRE**

**PALAYAMKOTTAI**

**TIRUNELVELI - 627002**

**Branch I Maruthuvam (Pothu)**

**CASE SHEET FOR "SAGANA VADHAM"**

I.P. No	:	Occupation	:
Bed No	:	Income	:
Ward	:	Nationality	:
Name	:	Religion	:
Age	:	Date of admission	:
Sex	:	Date of discharge	:
Permanent	:	Diagnosis	:
Address	:		
Temporary	:		
Address	:	Medical officer	:

**COMPLAINTS AND DURATION:**

**HISTORY OF PRESENT ILLNESS:**

**HISTORY OF PAST ILLNESS:**

**PERSONAL HISTORY:**  
**(Including Habit)**

**FAMILY HISTORY:**

**GENERAL EXAMINATION:**

Consciousness	:	
Stature	:	
Nutrition	:	
Facies	:	
Temperature	:	
Pulse Rate	:	
Respiratory Rate	:	
Heart Rate	:	
Blood Pressure	:	
Pallor	:	
Clubbing	:	
Jaundice	:	
Lymphadenopathy	:	
JVP	:	
Engorged Veins	:	
Koilonychia	:	
Pedal Odema	:	
Cyanosis	:	
Fasciculations	:	
Congenital anomaly	(if any)	
Premature cataract	Yes / No	
Miscellaneous	:	

**Clinical Examination – Siddha Aspects**

Nilam	:	
Paruvakalam	:	
Udal Nilai	:	
Gunam	:	

**Pori Pulangal**

Mei	-	Sensation	:
Vai	-	Taste	:
Kan	-	Sight	:
Mookku	-	Smell	:
Sevi	-	Hearing	:

**Kanmendriyam / Kanma Vidayam**

Kai	-	Dhanam	:
Kal	-	Kamanam	:
Vaai	-	Vasanam	:
Eruvai	-	Visarkam	:
Karuvai	-	Anantham	:

**Utkaya / Athakayam**

Puyam	-	Fore arm	:
Sayam	-	Arm	:
Kaal	-	Leg	:
Paatham	-	Feet	:

**Mummalam**

Malam	:
Moothiram	:
Viyarvai	:

**UL Uruppukalin Nilai**

Moolai	:
Iruthayam	:
Puppusam	:
Eraippai	:
Kalleeral	:
Manneeral	:
Kudal	:

Siruneeragam :  
Siruneerpai :  
Karuppai :

## **Uyir Thathukkal**

### **1. Vatham**

Pranan :  
Abaanan :  
Viyaanan :  
Uthaanan :  
Naagan :  
Koorman :  
Kirukaran :  
Dhevathathan :  
Dhananjeyan :

### **2. Pitham**

Anar pitham :  
Ranjaga Pitham :  
Saathaga Pitham :  
Alosaga Pitham :  
Piraasaga Pitham :

### **3. Kabham**

Avalambagam :  
Klethagam :  
Pothagam :  
Tharpagam :  
Santhigam :

### **Udal Thathukkal**

Saaram	:
Senneer	:
Oon	:
Kozhuppu	:
Enbu	:
Moolai	:
Sukkilam / Suronitham	:

### **Envagai Thervugal**

Naadi	:
Naa	:
Niram	:
Mozhi	:
Vizhi	:
Sparisam	:

### **Malam**

Niram	:
Edai	:
Elagal	:
Erugal	:

### **Moothiram**

#### **Neerkuri**

Niram	:
Edai	:
Manam	:
Nurai	:
Enjal	:

#### **Neikuri**

**Modern Aspects**  
**Systemic Examination – Locomotor System**  
**Examination of the spine and its joints**

**A) Inspection**

- 1. Skinover the vertebrae :
- 2. Attitude and deformity :
- 3. Muscular wasting :
- 4. Trophic changes :
- 5. Swelling :
- 6. Fasciculations :
- 7. Gait :

**B) Palpation**

- 1. Local Temperature :
- 2. Tenderness :
- 3. Rigidity and Deformity :
- 4. Wasting :
- 5. Swelling :
  - Position :
  - Extend :
  - Consistency :
  - Fluctuation :
- 6. Lymphadenopathy :
- 7. Cold abscess :
  - In Join :
  - In Abdomen :
  - In Cervical region :

**C) Movements**

- 1. Painful / Not painful :



- 2. Restricted / Not Restricted :
- 3. Excess mobility in any direction present / not present :
- 4. Movements of head
  - i) Rotation :  
(Atlanto axial joint C1-C2)
  - ii) Flexation :
  - iii) Extension :
  - iv) Lateral bending :  
(Dorsal, Cervical region)
  - v) Nodding :

**Examination of peripheral nerves**

**1. Cutaneous areas of distribution of spinal segments and the peripheral nerves**

- Examination of other system :
- Central nervous system :
- Cranial nerves :

**Motor System**

- Nutrition :
- Tone :
- Power :
- Co-ordination :
- Involuntary movement :

**Sensory System :**

**Reflexes :**

- Superficial reflexes :
- Corneal :
- Conjunctival :
- Abdominal :

Cremasteric :  
Plantar :  
Palatal :  
Pharyngeal :

**Deep tendon reflexes**

Jaw jerk :  
Biceps :  
Triceps :  
Supinator :  
Knee jerk :  
Ankle jerk :  
Clonus :  
    Petallar :  
    Ankle :  
Cranium and Spine :

**Laboratory Investigations**

**Blood :**

TC :  
DC :  
ESR :  
Hb% :  
Serum Cholestrol :  
Sugar :  
Urea :

**Urine**

Albumin :  
Sugar :  
Deposists :

**Motion**

Ova :  
Cyst :

**X – ray**

Cervical spine :

**GOVERNMENT SIDDHA MEDICAL COLLEGE & HOSPITAL,  
PALAYAMKOTTAI**

**DEPARTMENT OF POST GRADUATE - POTHU MARUTHUVAM  
DISCHARGE CASE SHEET PROFORMA FOR - 'SAGANAVATHAM'**

I.P.No : Occupation :  
 Bed No : Income :  
 Ward No : Nationality :  
 Name : Religion :  
 Age/Sex : Date of Admission :  
 Address : Date of Discharge :  
 Diagnosis :  
 No.of.Days treated :

<b>Sl.No</b>	<b>Important Signs and Symptoms of Sagana Vatham</b>	<b>During Admission</b>	<b>During Discharge</b>
1.	Pain in the neck		
2.	Stiffness in the neck		
3.	Pain in the upper limbs		
4.	Radiating pain in the chest		
5.	Head ache		
6.	Giddiness		
7.	Tingling sensation		
8.	Numbness		
9.	Muscular Wasting		
10.	Constipation		
11.	Feeling of heaviness of the body		
12.	Burning Sensation of the eyes		
13.	Weakness of the upper limbs		
14.	Mental depression		

+ = Symptoms present

- = Symptoms relieved

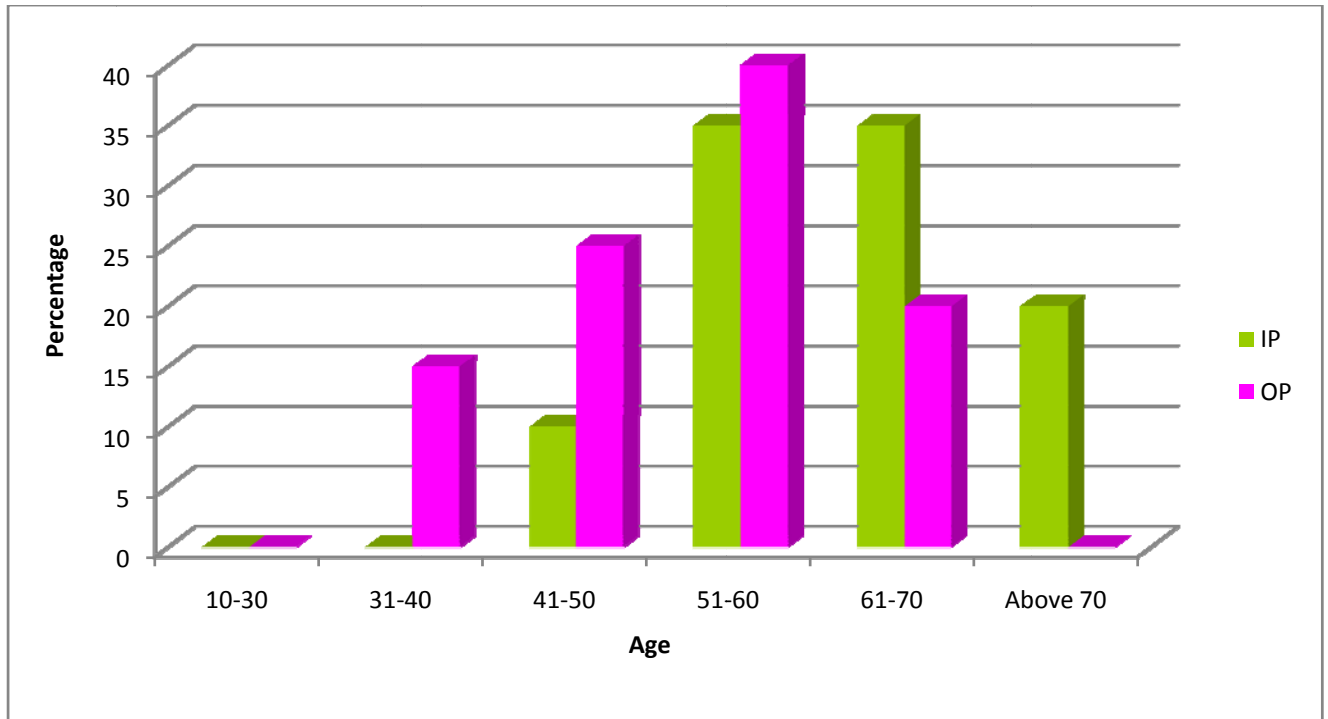
Signature of Medical Officer

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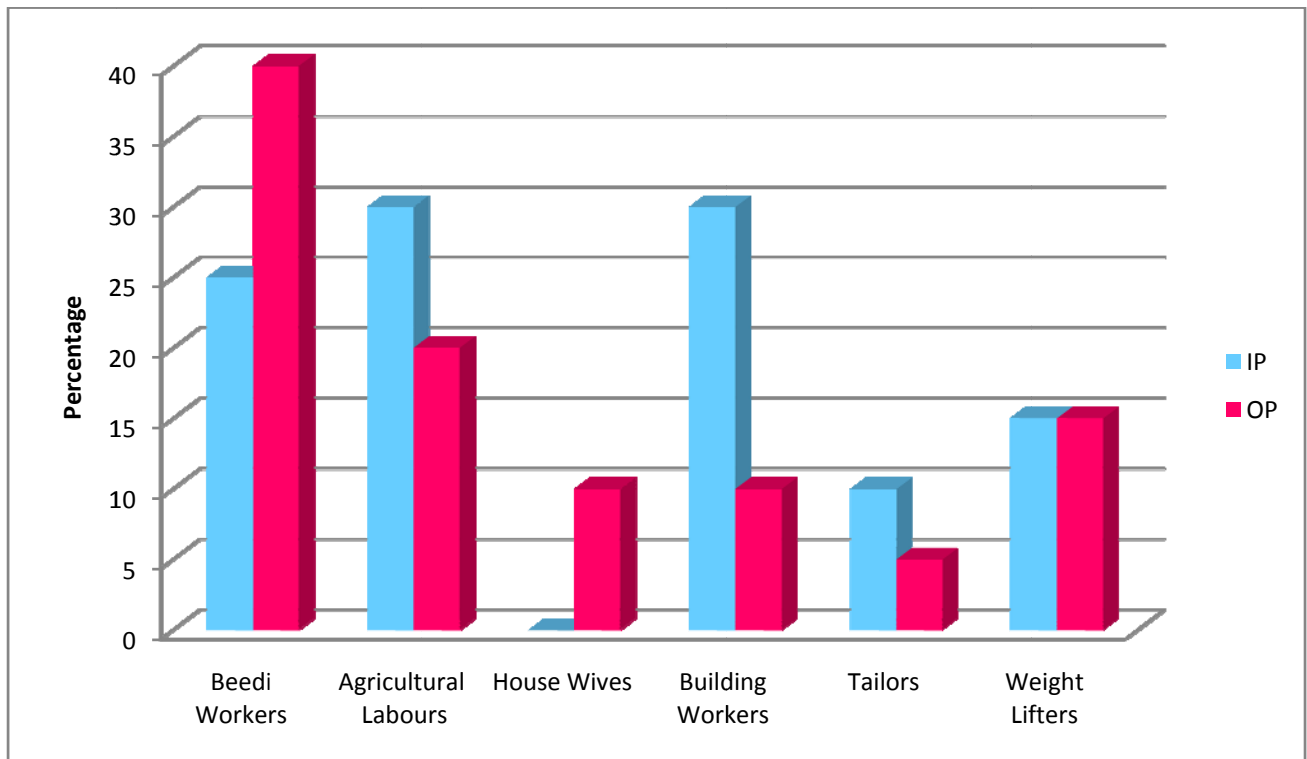
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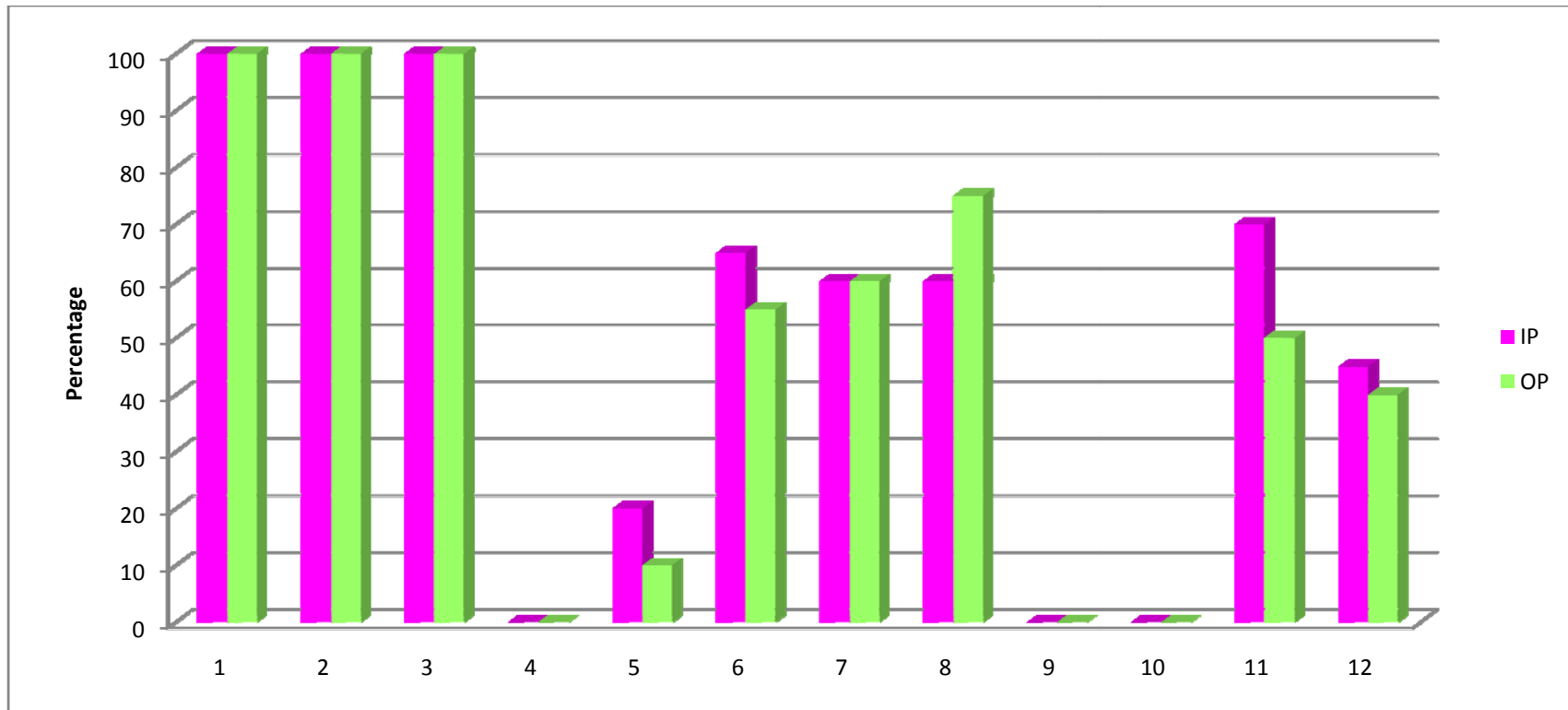
## GRAPH SHOWING AGE REFERENCE



## GRAPH SHOWING OCCUPATION REFERENCE

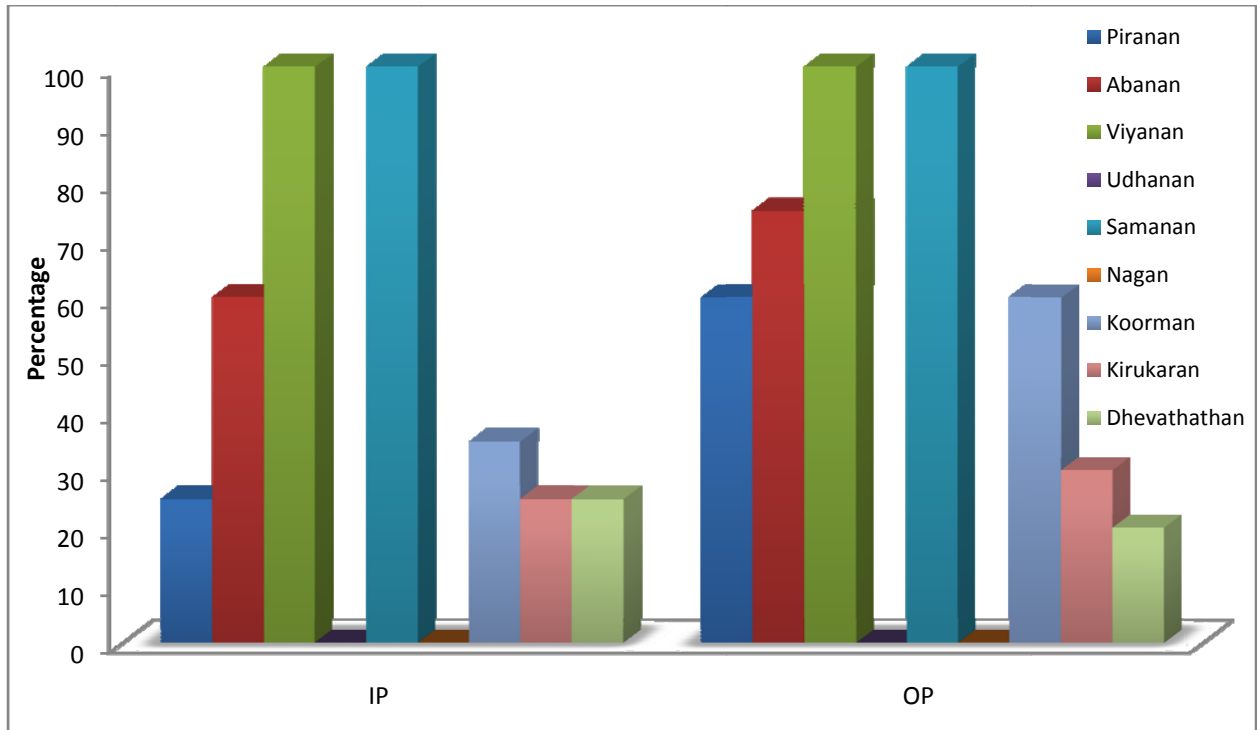


## GRAPH SHOWING CLINICAL MANIFESTATIONS

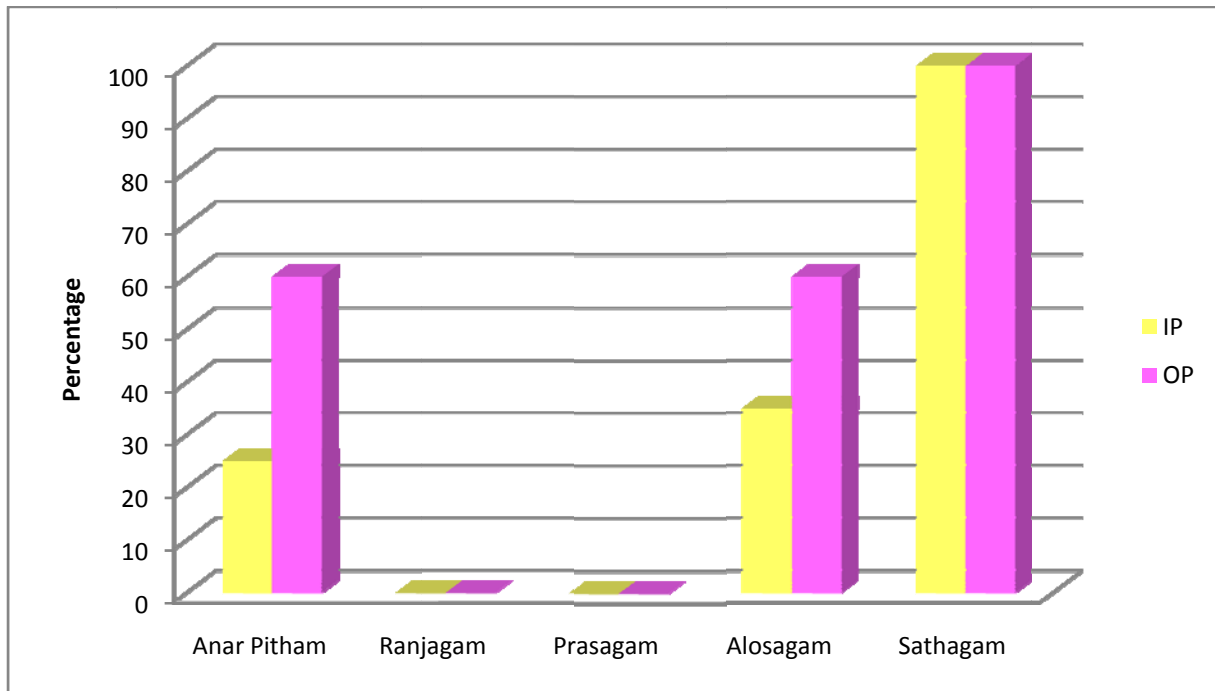


- 1 Pain in the neck
- 2 Stiffness in the neck
- 3 Radiating pain in the upper limb
- 4 Head ache
- 5 Giddiness
- 6 Tingling Sensation
- 7 Numbness
- 8 Constipation
- 9 Feeling the heaviness of the body
- 10 Burning sensation of the eyes
- 11 Weakness of the upper limbs
- 12 Mental depression

### GRAPH SHOWING VATHA REFERENCE

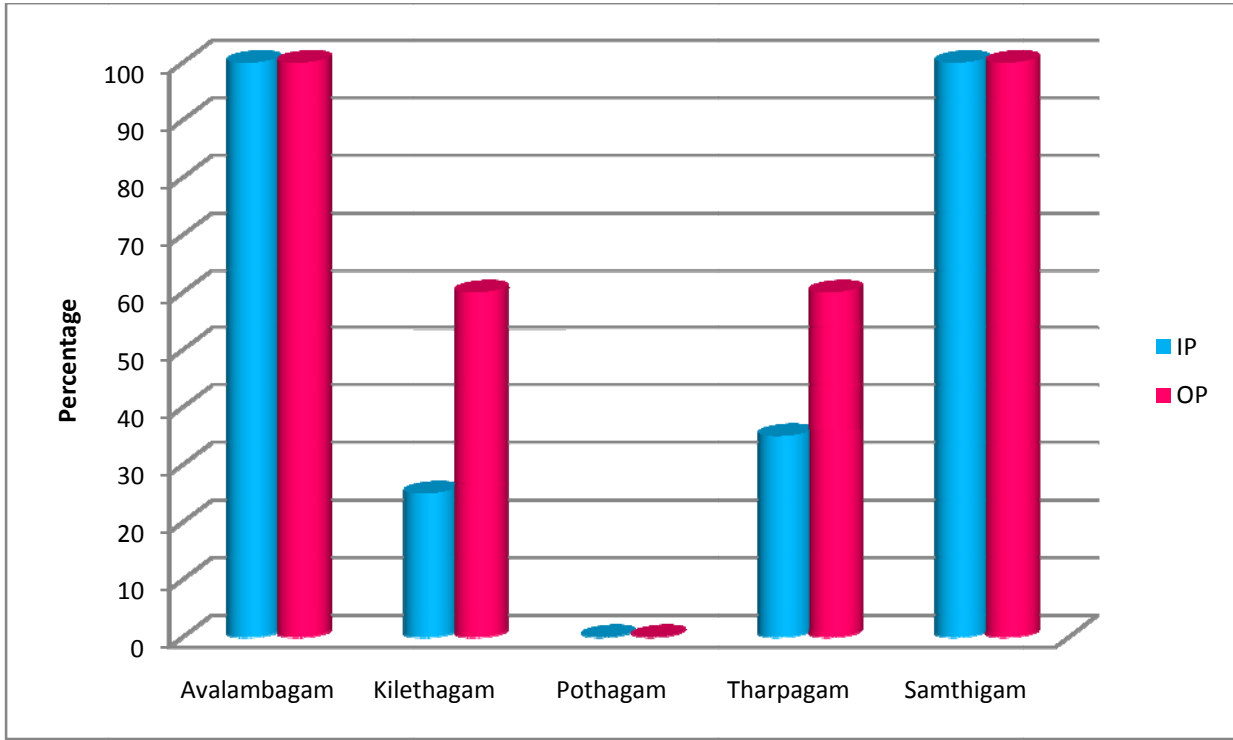


### GRAPH SHOWING PITHA REFERENCE

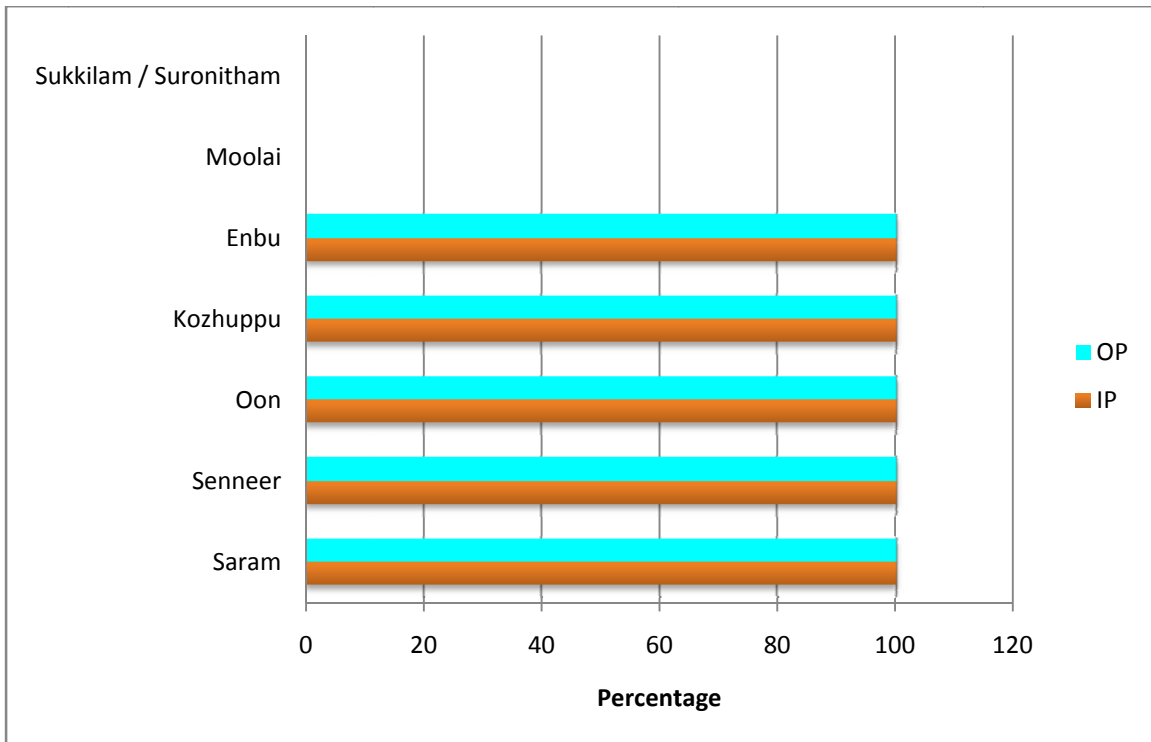




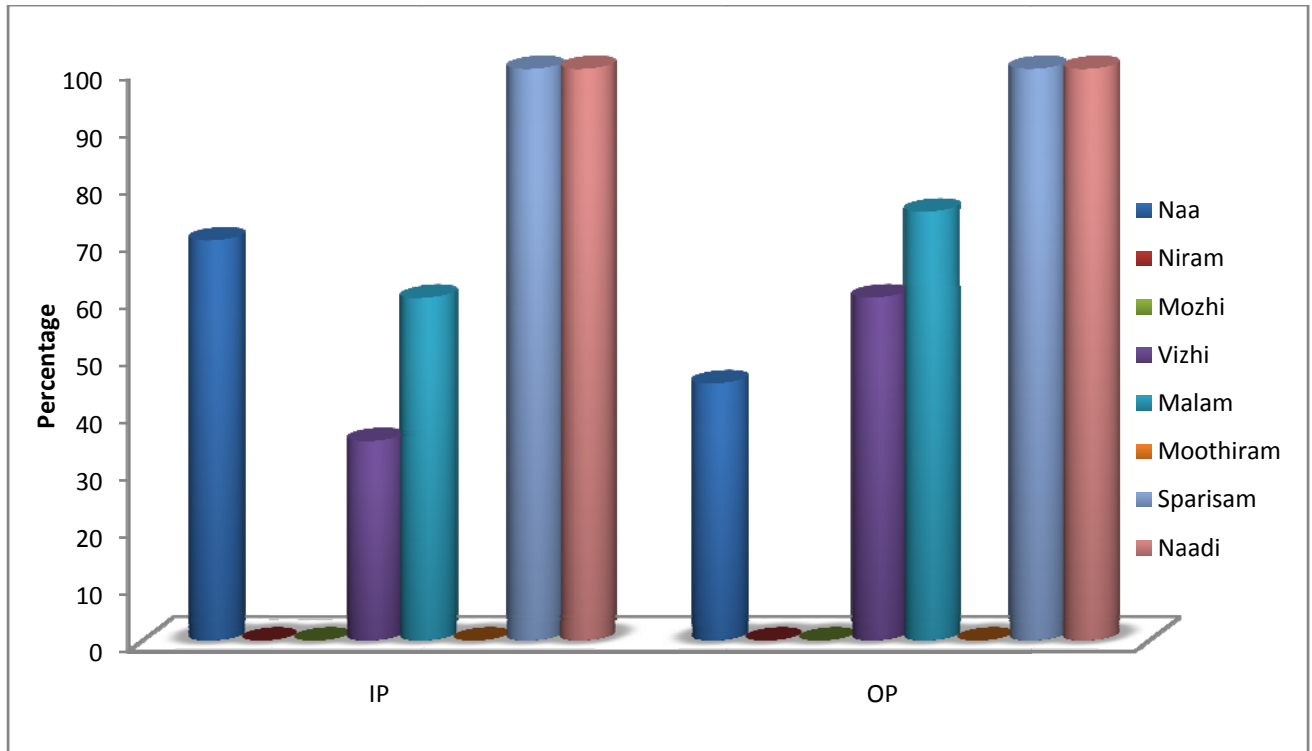
### GRAPH SHOWING KAPHA REFERENCE



### GRAPH SHOWING SEVEN UDALKATTUGAL REFERENCE



## GRAPH SHOWING ENVAGAI THERVUGAL



## GRAPH SHOWING RESULTS

