

ACKNOWLEDGEMENT

First of all, the author extremely grateful to the Lord Almighty who empowered the author with his blessings and grace to complete this dissertation work successfully.

It is a great pleasure for the author to acknowledge the deep sense of gratitude to the vice chancellor, Tamilnadu, Dr.M.G.R. Medical University, Chennai and Special commissioner, Director of Indian Medicine and Homeopathy, Chennai.

The author wishes to express grateful thanks to **Dr. M. Thinakaran, M.D(S).**, Principal, Government Siddha Medical College, Palayamkottai .

The author is thankful to **Dr. R. Devarajan, M.D (S).**, Vice Principal, Head of the Noi Naadal Department (PG), Government Siddha Medical College, Palayamkottai for rendering his valuable suggestion, guidance and encouragement in all aspects from time to time.

The author expresses her heart felt gratitude to **Dr. I. Sornamariammal M.D(S).**, Retired Joint Director of Indian Medicine and Homeopathy, Chennai, for her valuable guidance and encouragement.

The author feels pride to put her thanks to **Dr.T.Rajasekar M.D(s).**, assistant Lecturer, **Dr. T. Thangamany M.D(s).**,Lecturer,for their valuable guidance and in all aspects from time to time.

The author expresses her whole-hearted thanks to **Dr. S.K.Sasi M.D(S)**., assistant Lecturer, for her encouragement and most valuable guidance to undertake this dissertation work.

The author likes to express her profound gratitude to **Dr. A. Vasuki M.D(s)**., assistant Lecturer, for her suggestion helping me in my dissertation.

The author expresses her sincere thanks to **Dr. Paramasivam M.D (Patho), M.D (FM), H.O.D.**of Pathology Department, Tirunelveli Medical College, Tirunelveli for his guidance in the modern approach.

The author expresses her special thanks to **Dr. Mohan M.D.**, Professor, Department of modern medicine, Government Siddha Medical College, Palayamkottai for his information regarding her dissertation work.

The author places her special thanks to **Dr.P. Udhaya singh M.B.B.S.,D.PHYS.MED.**, Psychiatrist, Tirunelveli Medical College, Tirunelveli for his clinical guidance.

The author is thankful to **Dr. Padma M.B.B.S, DMRD.**, Radiologist, Government Siddha Medical College, Palayamkottai for her guidance in doing my dissertation topic.

The author is also thankful to **Dr. S. Bagirathy M.B.B.S.**, Department of clinical pathology, Government Siddha Medical College, Palayamkottai .

The author expresses her special thanks to **P. Arumugam M.A.,M.P.S.,P.G.D.C.A.**, Part time Professor in Bio-Statistics, Government Siddha Medical College, Palayamkottai for his statistical analysis doing my dissertation topic

The author would like to thank the librarian **Tmt.T.Poongodi M.A., Mhil,MLIS.**, for her co-operating in referring the books.

Finally, the author expresses her thanks to **BBNC, Palayamkottai**, for their co-operation in bringing out this Dissertation book in a successful manner.

INTRODUCTION

Siddha system is such a great system of medicine, by taking care of both physique body and psychic mind (nun udal and paru udal). In olden days, it was called as Tamil Maruthuvam, 'Tamil' means 'Amirtham', which bring bless to oneself.

Siddha system of medicine which was founded by the Siddhars is considered to be one of the ancient medical systems in the world. The word 'siddha' comes from the word 'Siddhi' which means an object to be attained or perfection or heavenly bliss. Siddhi generally refers to Astama siddhi (ie) eight great supernatural powers.

The ancient Siddhars have developed the siddha system of medicine which based on Panchaboothangal and Mukkutrangal.

The body is made up of the five basic principles (i.e.) sky, wind, fire, water and earth.

The universe is made up of the same. It is well known by the version.

**“அண்டத்திலுள்ளதே பிண்டம்
பிண்டத்திலுள்ளதே அண்டம்
அண்டமும் பிண்டமும் ஒன்றே
அறிந்து தான் பார்க்கும் போதே”**

- சட்டமுனி ஞானம்

According to siddhar philosophy, man is considered as a microcosm, universe is considered as the macrocosm. It means whatever occurs in man, occurs in universe and whatever occurs in universe and occurs in man. So any changes in universe will make as changes in man.

The physical body functions on the basis of the three humours like Vali, Azhal and Iyam. These three humours are nothing but combination of five elements. Any increase or decrease in ratio of the three humours causes disease in human body.

All living creatures need energy to lead their life. The energy is attained by what they consume. So regulating the dietary habits, one can make their help and mind moral. It is learnt by the following quotation.

“மாறுபாடு யில்லாத உண்டி மறுத்துண்ணின்
ஊறுபா டில்லை உயிர்க்கு”

- திருக்குறள்

Importance of diagnosis is stated in as,

“புவன நாயகனிருந்தும் கௌரவர் முன்
பாண்டவர் பின் போனதென்ன விவரமெனின்
நோய்க் கவிழ்த மென்பதன்றி மருந்திற்கு வினையுமுண்டோ
கவலையுறு நோயாளி முன்னாயுள் வேதியின் பின் சாட்சிபோனாய்
துவரவடிப்பது போலக் கவுரவ
நோய்களை கொல்லத் தொடங்கினானே”

-தேரன் மருத்துவ பாரதம்

In Theriyar Maruthuva Bharatham, the author defining, a physician must have clear cut knowledge about the causative factors, normal physiological conditions, pathological changes, nature of its presentation and prognosis of the disease before treating the patient otherwise it will be a erroneous. Diagnosis of disease is chiefly arrived through the examination of patient Envagai thervugal.

Treatment in Siddha system is arrived at keeping the three thodam in equilibrium and maintenance of the seven udal thathus. So proper diet medicine adjuvant regimens of life are advised for a healthy living and restore equilibrium of humours in diseased condition.

Disease affects an individual based on the immunity, dietary and personal habits, ultimate and environmental factors etc. Treatment is fruitful only if the basic pathology behind is well diagnosed.

The disease can be diagnosed based on eight entities.

“மெய்க்குறி நிறந்தொனி விழிநாவிருமலம் கைக்குறி”

- தேரன் நீர்க்குறி நெய்க்குறி

To lead a disease free healthy life, one has to follow the ‘Pini anuga vithi muraigal’ i.e. preventive measures throughout the life time.

“திண்ண மிரண்டுல சிக்கவடக்காமற்

பெண்ணிண் பாலொன்றைப் பெருக்ககாமற்-உண்ணுங்காற்

நீர்சுருக்கி மோர்பெருக்கி நெய்யுருக்கி வுண்பவர் தம்

பேருரைக்கிற் போமே பிணி”

- தேரன் நோயில்லா நெறி

The dissertation deals the basic principles of siddha medicine, the etiology and pathology of the disease and its diagnostic measures in concluding the disease as Uragan Vatham with clinical measurement.

SIDDHA PHYSIOLOGY

Physiology is the most fascinating and ancient branch of science. It is fascinating because, it unfolds the mystery of complicated functional aspects of individual organ in the body. It is ancient because, it exists ever since the origin of life. Even before knowing the language, culture and society, man knows about the hunger, thirst, pain and fear which are the basics of physiology.

The udal thathuvam (Physiology) of siddha system composed of

❖ Thathuvangal	-	96 basic elements
❖ Udal Kattukkal	-	7 physical constituent
❖ Vegangal	-	14 reflex function
❖ Suvaigal	-	6 tastes
❖ Udal Thee	-	4 body fires
❖ Udal Vanmai	-	3 immunities

96 THATHUVAM

The human body composed of 96 basic thathuvangal or constituent principles. The basic thathuvangal are responsible for the creation, protection and destruction of life, which is mediated through the Panchabootha and Mukkuttra theory.

1. The five basic elements	–	Bootham
2. The five organs of sense	–	Pori
3. The five objects of sense	–	Pulan
4. The five organs of action	–	Kanmenthiriyam
5. The five organs of perception	–	Kanmenthirya vidayam
6. The four intellectual faculties	–	Anthakaranam
7. The wisdom	–	Arivu

8. The ten naadi	–	Dasa naadi
9. The ten vital airs	–	Dasa vaayu
10. The five visceral cavities	–	Aasayam
11. The five cases of sheaths of the soul	–	Kosam
12. The six station of the soul	–	Aatharam
13. The three regions	–	Mandalam
14. The three principle of moral evil	–	Malam
15. The three humours	–	Dhodam
16. The three physical binding	–	Edanai
17. The three cosmic qualities	–	Gunam
18. The eight prominent passions	–	Raagam
19. The two deeds	–	Vinaigal
20. The five status of soul	–	Avaththai

DOSHAM 3

“மிகினுங் குறையினும் நோய் செய்யும் நூலோர்
வளி முதலா எண்ணிய மூன்று.”

-திருக்குறள்

The three humours are the fundamental principles and essential factors in the composition and constitution of the human body. The three humours Vali, Azhal, Iyam represent wind, bile and phlegm respectively.

RELATION BETWEEN BOOTHAS AND MUKKUTTRAM

Vali	–	Air
Azhal	–	Fire
Iyam	–	Water

FORMATION OF THREE HUMOURS

“வந்த கலை மூன்றில் வாயுவா மபானனுடன்
தந்த பிராணன் சமானனும் - சந்தமுறக்
கூட்டுறவில் ரேசித்தல் கூறும் வாதம் பித்தம்
நாட்டுங் கபமேயாம் நாடு.”

- கண்ணுசாமியம்

Vali – Edakalai + Abaanan
Azhal – Pinkalai + Praanan
Iyam – Suzhumunai + Samaanan”

“வாதமாய் படைத்து
பித்த வன்னியாய் காத்து
சேத்தும சீதமாய் துடைத்து”

- தேரையர் மருத்துவ பாரதம்

Vali → Creation
Azhal → Protection
Iyam → Destruction

“வழங்கிய வாதம் மாத்திரை யொன்றாகில்
தழங்கிய பித்தம் தன்னிலரை வாசி
அழங்குங் கபந் தானடங்கியே காலோடில்
பிறங்கிய சீவருக்குப் பிசுகொன்று மில்லையே”

- குணவாகட நாடி

Vali → 1 maathirai
Azhal → ½ maathirai
Iyam → ¼ maathirai

The physiological function of the body is mediated by 3 humours which are made up of five basic elements. These three functional factors maintain the integrity of the human body.

VALI

Dwelling places of Vali

- ❖ Abaanan
- ❖ Hip region
- ❖ Idakalai
- ❖ Bones
- ❖ Kaamakodi
- ❖ Joints
- ❖ Unthiyin keezh moolam
- ❖ Skin
- ❖ Hair follicles
- ❖ Stools
- ❖ *Nerves*
- ❖ *Muscles*

Nature properties of Vali

- ❖ Giving briskness
- ❖ Respiration
- ❖ Optimal functioning of the mind, thoughts and body
- ❖ Regulation of the fourteen physiological reflexes
- ❖ Uniform functioning of the seven udal thathukkal
- ❖ Strengthening the five sensory organs

Types of Vali

1. Praanan

- ❖ Lies in the chest
- ❖ Regulates the respiration and digestion
- ❖ Derangement leads to respiratory disorder.

2. Abaanan

- ❖ Constrict the anal sphincter
- ❖ Expels the faeces and urine
- ❖ Spreads the nutrient of the digested food all over the body for its utilizations
- ❖ It expels the sperm, ova and menstrual outflow.
- ❖ Its derangement leads to bowel disturbances and reproductive system disease.

3. Viyaanan

- ❖ It spreads all over the body.
- ❖ It controls voluntary and involuntary movement.
- ❖ It responsible for movement and sensory perception.
- ❖ ***It causes the flow of fluids, sweat and Opening and Closing the Eye.***
- ❖ It distributes the energy of the assimilated to various parts of the body.
- ❖ ***Its derangement leads to Neurological disturbances and locomotor problems.***

4. Udaanan

- ❖ It regulates the Speech.
- ❖ Induces the physiological reflexes such as vomiting, hiccough, cough, sneezing.
- ❖ Derangement leads to Gastro intestinal tract disturbances.

5. Samaanan

- ❖ It Controls the digestion.
- ❖ It acts as an activity factor for the other Vayus.
- ❖ Its derangement leads to Gastro intestinal, Respiratory and Neurological problem.

6. Naagan

- ❖ Intelligence quotient of an individual.
- ❖ *Open and Closes the eye lids.*
- ❖ Derangement leads to impaired memory and lack of comprehending the thinking

7. Koorman

- ❖ *It makes the closure of the eyes, lacrimation and yawning.*
- ❖ It is responsible for vision.
- ❖ It supplies energy to build up the body.

8. Kirukaran

- ❖ *It helps to salivary secretion*, nasal secretion, hunger, sneeze, cough and mind concentration.

9. Devathaththan

- ❖ It causes the laziness, angry, arguing and ocular movement.

10. Dhananjayan

- ❖ It produces swelling all over the body.
- ❖ Leaves body breaking up the cranium after three days of death.
- ❖ It is responsible for destruction of bodily elements.

AZHAL

It is the representation of the Thee Bootham.

Location

It is located in piraanavayu, bladder, moolaakkini, hunger, thirst, complexion, wisdom, strength, taste, light and softness of the body.

Types of Azhal- 5

1. Analam – It controls the appetite and help in digestion
2. Ranjagam – It gives colour to the blood.
3. Saathagam – It has the property of fulfillment and controls the body.
4. Aalosagam – It is located in the eyes and responsible for visual perception.
5. Prasagam – It gives complexion to the skin.

IYAM

It is representation of Neer and Mann Bootham

Properties of Iyam

It gives stability, lubrication, holding together of the joints, power endurance for hunger, thirst, sorrow, disturbed mind and heart

Types of Iyam

1. Avalambagam

It is present in the lungs and is responsible for the basic function of the heart and other four types of Iyam.

2. Kilethagam

It is present in the stomach. It makes the food wet and helps for digestion

3. Pothagam

It is present in tongue and is responsible for the sense of taste.

4. Tharpagam

It is located in the head and keeps the eye cool.

5. Santhigam

It is located in the joint and responsible for free movement of the joints.

SUVAIGAL 6

Taste denotes the enrichment of the food. This is very much related with the udal thathukkal (physical constituents) as well as the uyir thathukkal (humours).

The tastes are six in number. Each taste is formed by combination of two boothas.

<i>Suvaigal</i>	<i>Bootham</i>	<i>Humour</i>
1. Inippu(sweet)	Mann + Neer	Iyam
2. Pulippu (sour)	Mann + Thee	Azhal
3. Uppu (salt)	Neer + Thee	
4. Kaippu (bitter)	Vaayu + Aakayam	Vali
5. Karppu (pungent)	Vaayu + Thee	
6. Thuvarppu (astringent)	Mann + Vaayu	

UDAL THATHUKKAL 7 (Seven physical constituents)

The seven Udal Thathukkal are responsible for the entire structure of the body. These are

“இரசம் உதிரம் இறைச்சி தோல் மேதை
மருவிய வத்தி யெழும் பொடு மச்சை
பரவிய சுக்கிலம் பாழாம் உபாதி
உருபம லாலுடன் ஒன்றெனலாமே”

- அகத்தியர் ஆயுள் வேதம் 1500

1. Saaram (chyle)

Contain nutrient from digested food and nourishes all the tissues, organs and systems. It is responsible for growth and development.

2. *Senneer (blood)*

Blood is a complex fluid which contains both organic and inorganic constituents suspended in a colloidal medium called as plasma. It is responsible for knowledge.

3. *Oon (muscle)*

It forms the shape of the body.

4. *Kozhuppu (fat)*

It maintains lubrication and oiliness of all the tissues and gives energy to the body.

5. *Enbu (bone)*

It forms the frames and structure of the body.

6. *Moolai (bone marrow)*

It nourishes the bones

7. *Sukkilam and Suronitham*

It is responsible for reproduction.

VEGANGAL 14 (The fourteen reflexes)

Reflex is generally understood as a psycho neuro muscular function of the body. The natural reflex, excretions, protective and preventive mechanisms are called fourteen vegangal.

- | | | |
|---------------|---|----------|
| 1. Vatham | – | flatus |
| 2. Thummal | – | sneezing |
| 3. Siruneer | – | urine |
| 4. Malam | – | stool |
| 5. Kottavi | – | yawning |
| 6. Pasi | – | hunger |
| 7. Neervetgai | – | thirst |
| 8. Kaasam | – | erumal |

- | | | |
|---------------------------|---|----------------------|
| 9. Elaippu | – | fatigue / exhaustion |
| 10. Nithirai | – | sleep |
| 11. Vaanthi | – | vomit |
| 12. Kanneer | – | tear |
| 13. Sukkilam / Suronitham | – | genital secretion |
| 14. Suvasam | – | respiration |

All the above mentioned reflexes are closely linked between the neurological functions and muscular activity.

UDAL VANMAI 3 (Three immune status)

1. Iyarkkai vanmai – It is inherited vitality
2. Kaala vanmai – Vitality that is generally found in different age and periods.
3. Seyarkkai vanmai – Improvement of vitality obtained by good habits, physical exercise and proper diet.

UDAL THEE 4 (Four body fires)

The normal digestive fire is called sadaraakkini and it is a combination of samaanavayu, analapitham and kilethagam.

1. Samanaakkini

When the sadaraakkini normal with the proper balance of the above three constituent it is called samanaakkini. The balanced diet of an individual is properly digested in time.

2. Mandaakkini

An increased kilethagam with the deficiency of analapitham causes this condition in which food is poorly digested and the process of digestion takes longer time.

3. Dheekshaakini

An increased analapitham with the deficiency of kilethagam leads this condition, causing excessive digestive fire burning larger quantum of food in a lesser duration of time.

4. Vishamaakkini

The samana vaayu is mostly affected here causing irregular digestion and make the food poisonous.

SIDDHA PATHOLOGY

The word pathology is derived from two Greek words – ‘*pathos*’ meaning suffering and ‘*logos*’ meaning study. Pathology is scientific study of structure and function of the body in disease; it deals with causes, effects, mechanism and nature of disease. The knowledge and understanding of pathology be is essential for all would be doctors as well as general practitioners. And specialists since unless they know the cause and mechanism of disease and understood the language spoken by the pathologist in the form of laboratory reports, they would not be able to institute appropriate treatment or suggest prevention measure to the patient.

“உற்றதோர் உடலின் கூறு
உறுப்புடன் விரவ நின்று
முற்றுமே நோய்கள் எல்லாம்
முதலதனிலே தோன்றும் போது
பற்றுமே வாத பித்த
சிலேற்பனந்தனந் தன்னில் ஒன்றைப்
பற்றியே தோன்று மென்று
பகர்ந்தனர் முனிவர் தாமே”

- அகத்தியர் குருநாடி

நோய் முதலில் வளி, அழல், ஐயம் முன்றில் ஏதாவதொன்றைப் பற்றுவதால் தான் தோன்றும் என்று அகத்தியர் கூறுகிறார். இதனையே வள்ளுவர்,

“மிகினுங் குறையினும் நோய்செய்யும் நூலோர்
வளிமுதலா எண்ணிய முன்று”

- திருக்குறள்

“மதித்திடற் கருமை வாய்ந்த
மாண் பரிகாரமெல்லாம்
துதித்திட வுணர்ந்தானேனு
துகளறப் பிணியின்றன்மை
பதித்திட வுணரானாகிற்
பயனுறானாகலானே
விதித்திடு பிணித்திறத்தை
விளம்புது முதற்கண் மன்னோ”

- சிகிச்சா ரத்ன தீபம்

பரிகார முறைகள் யாவும் தெரிந்திருந்தாலும் நோய் நாடல் நோய் முதல்நாடலென்னும் பிணியின் தன்மை அறியும் கலை தெரியாதிருப்பின் சிறிதும் பயனில்லை.

“நோய்நாடி நோய்முதல்நாடி அதுதணிக்கும்
வாய்நாடி வாய்ப்பச் செயல்”

- திருக்குறள்

The knowledge and understanding of pathology is essential for all would be doctors as well as general practitioners

MUKKUTRAM

The changes of the three uyir thathus are called mukkutram. The mukkutram is the basic principle of all disease.

The changes take place in the uyir thathu caused by

1. Variation in the intake of diet.
2. Alteration in the udal kattugal.

3. Environmental changes,
 - a. Seasonal variation in humours.
 - b. Regional variation in humours.
4. Self suppression of fourteen Reflexes.

When the normal maathirai proportions of the uyir thathus are disturbed, it leads to mukkutram. This condition is called us disease.

“மிகினுங் குறையினும் நோய்செய்யும் நூலோர்
வளிமுதலா எண்ணிய முன்று”

- திருக்குறள்

The three humours changed and causes disease by self exaggeration and combining with other humours, and thus the disease are classified under 9 major groups of naadi nadai.

1. Vali naadi - self exaggeration of vali
2. Vali azhal naadi - maximum exaggeration of vali combined with exaggerations of azhal
3. Vali iya naadi - maximum exaggeration of vali combined with exaggeration of iyam
4. Azhal naadi - self exaggeration of azhal
5. Ahal vali naadi - maximum exaggeration of azhal combined with exaggeration of vali
6. Azhal iya naadi - maximum exaggeration of azhal combined with exaggeration of iyam
7. Iya naadi - self exaggeration of iyam
8. Iya vali naadi - maximum exaggeration of iyam combined with exaggeration of vali
9. Iya azhal naadi - maximum exaggeration of iyam combined with exaggeration of azhal

Table-1

Thannilai valarchi and vettrunilai valarchi of the three humours causes the symptoms of increasing and decreasing properties of the uyir thathukkal.

<i>Humours</i>	<i>Increased Feature</i>	<i>Decreased Feature</i>
Vali	Wasting, blackish discoloration, affinity on hot foods, tremors, distended abdomen, constipation, weakness, insomnia, weakness in sense organs, giddiness and brisklessness.	Body pain, feeble voice, diminished capability of the brain, decreased intellectual quotient, syncope, increased Iya condition.
Azhal	Yellowish discoloration of conjunctiva, skin, urine and faces, polyphagia, polydypsia, burning sensation all over the body, sleeping disturbances.	Loss of appetite, cold, pallor, feature of increased Iyam.
Iyam	Loss of appetite, excessive salivation, diminished activity, heaviness, pallor, cold, decreased physical constituents, dyspnoea, flatulence, cough, excessive sleep.	Giddiness dryness of the joints and prominence of bones, profuse sweating in the hair follicles, palpitation of heart.

1. Variation in the intake of diet

“உணவே மருந்து
மருந்தே உணவு”

Any material that provides the nutritive requirement of an organism to maintain growth and physical well being is called food. Food comprises six suvaigal in appropriate proportion.

So, any alteration in the normal, regular diet will produce changes in the proportion of the suvaigal resulting disease.

Table-2

Excessive intake of a particular suvai may produce hyperactivities and develops some clinical manifestation. These are given below,

<i>Suvaigal</i>	<i>Diseases</i>
Inippu (sweet)	Obesity, indigestion, diabetes, cervical adenitis, increased Iyam and its disease.
Pulippu (sour)	Body weakness, dull vision, giddiness, anemia, dropsy, fever, dryness of the tongue, herpes, scabies and blisters.
Uppu (salt)	Grey hair, aging, falling of hair and progressive weakness of the body.
Kaippu (bitter)	Disease related to vali, disorder of physical constituents.
Kaarppu (pungent)	Excessive dryness of the tongue, defect in spermatogenesis, general malaise, syncope, lassitude, tremors and back pain.
Thuvarppu(astringent)	Abdominal discomfort, heart disease, dryness of the tongue, tiredness, impotency, vascular constriction and constipation.

Table-3

Alterations in Udal Kattukkal

S.No	Udal Kattukkal	Increase Feature	Decreased Feature
1.	Saaram (Chyle)	Loss of appetite, excessive salivation, diminished activity, pallor cold, decreased physical constituents, dyspnoea, flatulence, cough, excessive sleep.	Dryness of skin, tiredness, loss of weight, lassitude, less ability in hearing.
2.	Senneer (Blood)	Boils in different parts of the body, splenomegaly, tumours, pricking pain, loss of appetite, haematuria, hypertension, reddish eye and skin, leprosy, jaundice	Affinity to sour and cold food, nervous debility, dryness and pallor.
3.	Oon (muscle)	Tubercular adenitis, venereal diseases, extra growth around neck, cheeks, abdomen, thigh and genitalia.	Lethargic sense organ, pain in the joints, muscle wasting in chin, gluteal region, penis and thigh.
4.	Kozhuppu (fat)	Identical features of increased oon, tiredness, dyspnea on exertion, extra musculature in the genital region, external genitalia, chest, abdomen and thighs.	Loin pain, splenomegaly, emaciation

5.	Enbu (bone)	Excessive ossification and dentition	Joint pain, falling of teeth, falling and splitting of hairs and nails.
6.	Moolai (bone marrow)	Heaviness of body and eye, interphalangeal joints swollen, oliguria, non-healing ulcer.	Osteoporosis, blurred vision.
7.	Sukkilam or Suronitham	Increased sexual activity, urinary calculi	Dripping of semen, vaginal fluid or blood during coitus, pricking pain in the scrotum, inflammation and contoured external genitalia.

Environmental changes

The environmental changes consist of two factors.

- (a). Seasonal changes of humours
- (b). Regional changes of humours

Table-4

(a) Seasonal changes of humours

Humour	Thannilaivalarchi	Vetrunilaivalarchi	Thannilai adaithal
Vali	Mudhuvnil kaalam	Kaar kaalam	Koodir kaalam
Azhal	Kaarkaalam	Koodir kaalam	Munpani kaalam
Iyam	Pinpani kaalam	Elavenil kaalam	Muduvenil kaalam

(b)Regional Changes of Humours:

Kurunji	–	Iya diseases occur
Mullai	–	Azhal diseases occur
Marutham	–	Diseases will not occur
Neydhal	–	Vali diseases occur
Paalai	–	Mukkuutra diseases occur

Table-5

Effects on self suppression of fourteen vegangal

Reflexes are essential for the normal physiology when there is any self suppression to those reflexes that will lead to the pathologic state.

<i>S.No</i>	<i>Vegangal</i>	<i>Diseases</i>
1.	Vatham	Heart disease, gastritis, umbilical hernia, body pain, liver disorder, constipation, oliguria, loss of appetite.
2.	Thummal	Head ache, defect of the special sensory organ and its activities, pain over the face, hip joint pain
3.	Siruneer	Anuria, urethral ulcer, pain in the joints, pain in the penis, gas formation in the abdomen.
4	Malam	Diarrohoea caused by increased abaanan, cold, knee pain, head ache, flatulence, weakness and its leads to many diseases.
5	Pasi	All organs are affected, pricking pain all over the body, schizophrenia, emaciation, apathetic face, pain in the joints.
6	Kottavi	Lethargic face, exhaustion, indigestion, urinary disorders, leucorrhoea associated with schizophrenia and abdominal disease.

7	Neer Vetkai	All organs are affected, pricking pain all over the body, schizophrenia, emaciation, apathetic face, pain in the joints.
8	Erumal	Increased cough, bad breath, heart disease
9	Elaippu	Urinary disorder, peptic ulcer, syncope, rigor, identical features of suppression of sneezing.
10	Thookkam	Heaviness of head, pain in the eyes, deafness, unclear speech
11	Vaanthi	Urticarial rashes, itching, anemia, eye diseases, disease of increased azhal, asthma, fever, cough
12	Kanneer	Heart diseases, upper respiratory disorders, eye diseases, wound in the scalp, peptic ulcer.
13	Sukkilam or Suronitham	Fever, anuria, joint diseases of the upper and lower limbs, acute chest pain, increased urinary diseases.
14.	Suvasam	Cough, abdominal discomfort, tastelessness, epigastric pain, fever, venereal diseases

PINIYARI MURAMAI

Diagnosis of the disease is an essential factor before commencing the treatment whatever may be the system of medicine.

“நோய் நாடி நோய் முதல் நாடி அது தணிக்கும்
வாய்நாடி வாய்ப்பச் செயல்.”

- திருக்குறள்

In siddha system, noi naadal noi mudal naadal indicates the approach to the process of diagnosis. It is based upon the following principles,

1. Poriyaal arithal
2. Pulanaal arithal
3. Vinaadhal

1. Poriyal Arithal

Poriyaal arithal means the art of perception of five organs viz.

1. Mei – skin
2. Vaai – mouth
3. Kan – eye
4. Mookku – nose
5. Sevi – ear

2. Pulanaal Arithal

Pulanaal arithal means art of knowing objective senses viz.

1. Sparisam – sensation
2. Rasam – taste
3. Roobam – vision
4. Kantham – smell
5. Saptham – sound

3. Vinaadhal

It is a method of history taking. History taking is an art of diagnosing a disease very interestingly.

About 50% of the diagnosis is made up on history taking. The history of entire illness can be obtained from the patient and his relatives.

Envagai Thervuvugal:

The diagnosis is also made by the eight tools of diagnosis as mentioned below.

“மெய்க்குறி நிறந்தொளி விழிநா விருமலம் கைக்குறி.”

- தேரன் நீர்க்குறி நெய்க்குறி

1. Meikuri – signs in the body
2. Niram – colour
3. Thoni – sound and speech variation
4. Vizhi – eye
5. Naa – tongue
6. Malam – faeces
7. Moothiram – urine
8. Kaikuri – signs in hand pulse

In the above verse, inspection, palpation, percussion and interrogation are mentioned first. The pulse is mentioned in the last. This order is suitable for the diagnosis.

1. Meikuri

By meikuri, the temperature of skin (heat or cold), smoothness, roughness, softness, sweat, dryness, tenderness, ulcers, hard patches, swellings, abnormal growth and nourishment can be examined by the following examination.

- | | | |
|--------------|---|---------------------------|
| Palpation | – | feeling |
| Percussion | – | tapping |
| Auscultation | – | hearing with stethoscope. |

The following should be noted,

- ❖ Condition of the skin
- ❖ Organ not mentioned in the Envagi thervugal
- ❖ Nail
- ❖ Enlargement of viscera
- ❖ Tenderness
- ❖ Touch, pain, and temperature sensation

2. Niram

Diagnosis made with the help of colour of the skin, nails, hairs, conjunctiva, teeth and mucous membrane etc.

3. Thoni

The quality of the sound is assessed in the examination of them. The following also should be examined under speech.

- ❖ Pitch
- ❖ Fluency
- ❖ Articulation
- ❖ Intelligence
- ❖ Breathlessness
- ❖ Aphasia

4. Vizhi

As, both the physiological and pathological conditions are reflected in the eyes, the examination of eyes are important in the diagnosis of disease.

- ❖ Size and shape
- ❖ Colour
- ❖ Conjunctiva and cornea
- ❖ Ocular movement

- ❖ Colour of vision
- ❖ Field of vision
- ❖ Acuity of vision
- ❖ Light reflex
- ❖ Inflammation
- ❖ Condition of eye lids and eye lashes.

5. *Naa*

In the examination of the tongue,

- ❖ Colour of the tongue
- ❖ Coating
- ❖ Dryness, increased salivation, any deviation, movement of the tongue
- ❖ Taste sensation of tongue
- ❖ Ulceration
- ❖ Macroglossia
- ❖ Microglossia
- ❖ Teeth and gum

6. *Malam*

Malam examined under the qualities of,

- ❖ Colour
- ❖ Froth
- ❖ Solid
- ❖ Semi solid or liquid
- ❖ Quantity
- ❖ Odour
- ❖ Consistency
- ❖ Abnormal substances and parasites.

7. Moothiram

The diagnostic value of urine is observed by two peculiar studies.

- ❖ Neerkuri
- ❖ Neikuri

Neerkuri

“வந்த நீர்க் கரிஎடை மணம் நுரை எஞ்சலென்
றைந்தியலுளவவை யறைகுது முறையே”

-தேரன் நீர்க்குறி நெய்க்குறி

From the above quotation, the neerkuri consists of the following characters.

- ❖ Niram - It indicates the colour of the urine.
- ❖ Manam - It indicates the smell of the urine.
- ❖ Edai - It indicates the specific gravity of the urine.
- ❖ Nurai - It indicates the frothy of the urine.
- ❖ Enjal - It indicates the quantity of the urine.

Neikuri

The patient is advised to take a balanced diet and should have a good sleep prior to the day of urine examination.

After early morning wake up, the first urine voided by the patient is collected in a glass container. The analysis should be performed within one and a half hour.

A drop of gingerly oil is dropped at the top of the urine without shaking, the spreading mode of oil noted.

“அரவென நீண்டிடின் அ.தே வாதம்
ஆழிபோற் பரவின் அ.தே பித்தம்
முத்தொத்து நிற்கின் மொழிவதுதன் கபமே”

- தேரன் நீர்க்குறி நெய்க்குறி

- ❖ Oil spreading like snake indicated Vali.
- ❖ Oil spreading like ring indicated Azhal.
- ❖ Oil remains floating as a pearl indicated Iyam.
- ❖ Mixed reaction of any two of the above indicates Thontham.

The siddhars relied on these methods for prognosis of the disease and classify the disease as curable and incurable.

NAADI

The rhythmic expansion of an artery which may be felt by the finger which represents the state of function of the heart. Naadi is nothing but, the vital energy that sustains the life in our body.

Naadi plays the important role in envagai thervu and it has been considered to be the most important for assessing the prognosis and diagnosis of the disease. Any variation that occurs in the three humour is reflected in the naadi. These three humour organize, regularize and integrate the functions of the human body. So, naadi serves as a good indicator of all ill health. Naadi can be perceived by feeling it at the appropriate site, suitable places for pulse reading

“தாது முறை கேள் தனித்த குதிச் சந்தோடு
ஓதுறு காமிய முந்தி நெடு மார்பு
காது நெடுமுக்கு கண்டம் கரம் புருவம்
போதுறு முச்சி புகழ் பத்தும் பார்த்திடே.”

- திருமூலர் நாடி

Naadi is felt as

- ❖ Vali – tip of index finger
- ❖ Azhal – tip of the middle finger
- ❖ Iyam – tip of the ring finger

In normal condition the ratio of naadi is

- ❖ Vali – 1
- ❖ Azhal – $\frac{1}{2}$
- ❖ Iyam – $\frac{1}{4}$

The gait of the naadi compared to the various animals, reptiles and birds

“வாகினிலன்னங் கோழி மயிலென நடக்கும் வாதம்
ஏகிய வாமையட்டை யிவையென நடக்கும் பித்தம்
போகிய தவளை பாம்பு போலவாம் சேத்துமந்தான்.”

- ❖ Vali – movement of swan and peacock
- ❖ Azhal – movement of tortoise and leech
- ❖ Iyam – movement of frog and serpent

Other than this the following should be noted.

- ❖ Rate of the pulse
- ❖ Rhythm
- ❖ Volume
- ❖ Character
- ❖ Whether felt in all peripheral areas and Condition of the arterial wall.

AIM AND OBJECTIVES

“வாதமலாது மேனி கெடாது”

As Vali is the main cause of all sorts of ailments the author chosen Vali disease.

“Face is the index of the mind”

From the above proverb one's feeling and thoughts can be reflected in the face. That's why the face is considered to be very important in the world of beauty. If any flaw or blemish or inability has occurred in face it leads to profound stress.

The main aim of present study of Uragan Vatham with clinical study is to evaluate the Mukkuttra verupadugal, changes of Udal kattugal in this disease.

- ❖ Collection of various literatures dealing with definition, etiology, classification, signs and symptoms of the Uragan Vatham.
- ❖ To expose the Siddhar's diagnostic methods.
- ❖ To have a better understanding, regarding the incidence of this disease with disease with reference to Age, Sex, and Paruvakaalam.
- ❖ To study under the topics of Mukkutram, Pori, Pulangal, Udal thathukkal, Envagai thervugal, Naadi, Neerkkuri, Neikuri and Manikkadai Nool. The changes brought about by this disease under normal condition.
- ❖ The pathogenesis of the disease ruled out on the basis of etiology.
- ❖ To use modern parameters in the investigation of the disease that enhances to be diagnosed and observe the prognosis of the patient.

ELUCIDATION ABOUT DISSERTATION TOPIC

In Yugi vaithiya Chinthamani Vatha roga nithanam is mentioned in Chapter 7. The ‘Uragan Vatham’ is mentioned in poem 282.

“அற்புதமாய் நோவாகிப் புருவம் காது
அங்கத்திற் பாதிதான் வலித்தெப் போதும்
தற்புகமாய் கோணியே தலையும் வாயும்
தாவவே மிகநடுங்கி குளிர்ந்து சூசம்
விற்புதமாய் விழிகளுந்தான் யிமைப்புறாது
மெலிவாகி உடம்பெல்லாம் வியர்வையாகும்
புற்புதமாய் வாய்நீரு மிகவே யூறும்
புகலுமோ ருரக வாதத்தின் பேரே”

- யூகி வைத்திய சிந்தாமணி

உரகன்	-	காற்று, வாயு	
நோவு	-	நோய்	- Disease
அங்கம்	-	உடம்பின் பாகம்	- Part of body
வலித்தல்	-	இழுத்தல்	- Pulling
தற்புகம்	-	இயல்பு நிலைமை	- Normal side
நடுங்கல்	-	பதறுதல்	- Involuntary movement

“அற்புதமாய் நோவாகிப் புருவம் காது
அங்கத்திற் பாதிதான் வலித்தெப் போதும்”

These lines describe the disease which affects the ear and the eye brows. They are partially affected: only half of the face is affected, that is pulling of face in one side.

“தற்புகமாய் கோணியே தலையும் வாயும்”

Deviation of face and mouth to normal side.

“தாவவே மிகநடுங்கி குளிர்ந்து கூசும்”

Involuntary facial movement called ‘Tics’. Some times the involuntary facial movements are present in Facial Nerve Paralysis. Heaviness and numbness over the face. But no sensory loss is demonstrable.

“விற்புதமாய் விழிகளுந்தான் இமைப்புறாது”

In ability to close the affected eye: St. Yugi mentioned the word ‘விழிகளுந்தான்’, to give more importance to the special senses (i.e.) eye. To prove this fact St. Yugi already mentioned in the above line, ‘அங்கத்திற் பாதிதான்’.

“மெலிவாகி உடம்பெல்லாம் வியர்வையாகும்”

Disuse atrophy and excessive sweating

“புற்புதமாய் வாய்நீரு மிகவே யூறும்”

Excessive Salivation

Summary

The clinical features of the Uragan Vatham are, Pulling of face, Deviation of mouth, Involuntary facial movement, Numbness over the face, Shyness, Inability to close the eye, Disuse atrophy, Increased sweating and Excessive salivation.

**DETAILED PATHOLOGICAL VIEW OF THE
DISSERTATION TOPIC
SIDDHA ASPECT**

“வாதமலாது மேனி கெடாது”

-தேரன் சேகரப்பா

தேகத்தின் ஓளி என்னும் அழகும், வன்மையும் கெடுவதற்கு முக்கியமான முதற் காரணம் வளிக் குற்றமாகும்.

வளி வாழுமிடம்

அபானன், மலம், இடகலை, தோல், நரம்பு, ஊன், கீல்கள், மயிர்க்கால்கள்.

வளி உடலில் செய்தொழில்

நரம்பு முதலியன குன்றல், நடுக்கல், உறுப்புத் தளர்ச்சி, உறுப்புகள் மரம் போல் கிடத்தல், உடல் நோதல், குத்தல், வறட்சி மற்றும் பல.

உரகன் வாதத்தில் வளி குற்றம் மிகுதியடைந்து, வளி வாழும் இடமாகிய நரம்புக் கூட்டத்தில் உள்ள முக நரம்பு முடங்குவதால் முகத்தில் உள்ள தசைகளின் தொழிலை செய்யவிடாமற் மரம் போல் கிடக்கச் செய்கிறது. தேரையர் தமது வாகடத்தில் பின்வருமாறு கூறுகிறார்,

**“தக்க வாயு கோபித்தால் சந்துளைந்து சூலைநோவா
மிக்க கொட்டாவி விட்டங் கெரியு மலங் கட்டும்
ஓக்க நரம்புதான் முடங்கு மலர்ந்து வாய்நீருறிவரும்
மிக்க குளிரும் நடுக்கமாய் மேனி குளறி வருங்கானே.”**

- தேரையர் வாகடம்

வளி குற்றம் மிகுதியடைவதால் சந்து உளைதல், சூலை, கொட்டாவி, மலக்கட்டு, நரம்பு முடங்கல், வாய்நீருதல், குளிர், நடுக்கம், உடலின் விறைப்புத்தன்மை குறைந்து போதல் போன்ற குறிகுணங்கள் தோன்றும்.

Altered thirithodam in Uragan Vatham

The following types of Vali humour actions are increased in Uragan Vatham

Praanan

Dyspnoea present

Abaanan

Constipation present

Viyaanan

Diminished facial muscle action, Inability to close the eye

Udhaanan

Mild dysarthria present

Samaanan

Increased appetite present

Naagan

Inability to close the eye present

Koorman

Inability to close the eye and tear present

Kirukaran

Increased salivation present

Devathathan

Irritability present

Azhal

The above increased Vali humour is also increases the Azhal humour. The following types of Azhal humour actions are increased.

Anarpitham

Increased appetite present

Ranjagapitham

Palloriness present

Saathaga pitham

Diminished facial muscles action.

Praasagapitham

Dryness is present.

Iyam

The Iya humour action is decreased. Following types of Iya humour action is decreased.

Avalambagam

Dyspnoea present.

Pothagam

Loss of taste.

Altered Udal Thathukkal in Uragan Vatham

Saaram

Depression and anxiety.

Senneer

Nerve paralyzsis.

Oon

Diminished facial muscle action.

Kozhuluppu

Disuse atrophy

MODERN ASPECT

“அங்கத்திற் பாதிதான் வலித்தெப் போதும்
தற்புகமாய் கோணியே தலையும் வாயும்”

Muscles of facial expressions are,

- ❖ Orbicularis oris .
- ❖ Levator labii superioris alaeque nasi
- ❖ Levator labii superioris
- ❖ Zygomaticus major
- ❖ Zygomaticus minor
- ❖ Levator anguli oris
- ❖ Depressor labii inferioris
- ❖ Depressor anguli oris
- ❖ Mentalis
- ❖ Buccinator

These facial expression muscles are sub cutaneous muscles and they are attached to the skin. They are developed from the second pharyngeal arch. Hence these muscles are supplied by the facial nerve. These muscles are arranged around the openings of the face. The main functions of these muscles will be either to open or close these openings. While doing these movements the facial expression results as a byproduct. If one side is paralyzed, then the byproduct will be disabled. So deviation occurs in normal side

“விற்புதமாய் விழிகளுந்தான் இமைப்புறாது”

Opening of the palpebral fissure

- ❖ Sphincter - Orbicularis oculi
- ❖ Dilator - Levator palpebrae superioris
Frontalis

The above muscles are supplied by Facial Nerve. If the nerve is paralyzed the above muscle actions are weakened. So the Eye lid cannot be closed.

“புற்புதமாய் வாய்நீரு மிகவே யூறும்”

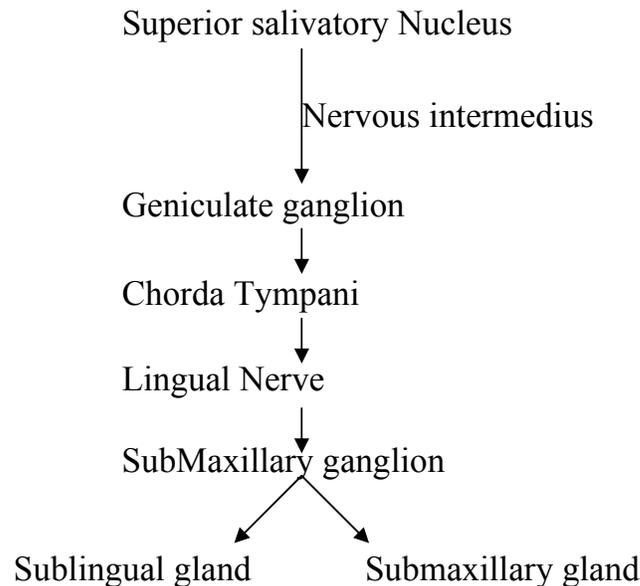
Nerve supply to Salivary Gland

Salivary glands are under the control of Autonomic Nervous system.

Parasympathetic Nerve fibers supplying the salivary glands arise from superior and inferior Salivatory Nuclei of Pons and Medulla.

Parasympathetic Nerve fibers of Facial Nerve supply to sub mandibular and sub lingual gland

Schematic representation of Nerve supply to Salivary Gland



Paralytic secretion of Saliva

When the parasympatic Nerve to salivary gland is cut, salivary secretion increase for three weeks and diminishes and then stop at about 6th week. This is because of release of more amount of Adrenaline from the supra renal gland after the denervation. The acinar cells of the salivary glands are hypersensitive to adrenaline. The paralytic secretion does not occur after cutting the sympathetic nerve fibre to salivary gland.

DIFFERENTIAL DIAGNOSIS

அற்புத வாதம்

”தீர்க்கமாய் ஸ்திரி சங்கம் பண்ணும் போதும்
திடுக்கெனவா ர்ததைகே பித்த போதும்
ஊக்கமா யுறத்துதான் பாடும் போதும்
உண்ணுமவல் கச்சாயம் பாக்குத்தானும்
ஆர்க்கமாய்த் தட்டியே கடித்த போதும்
அழகான முகந்தன்னில் வாயுகே பித்துத்
தார்க்கமாய் மிகச்சிதறி வாயுங் கோணும்
சங்கமாய் ற்புதவா தந்தானாமே”

- யூகி வைத்திய சிந்தாமணி

Deviation of mouth occur in emotional condition. The clinical feature of above poem may be emotional type of upper motor neuron type of Facial Nerve paralyzsis.

REVIEW OF LITERATURE

The same clinical features of Uragan Vatham are found in various literatures under various headings. They are,

முகவாதம்

“புருவ மதரங் கண் மூக்குப் பொருவிற் செவிகண்மிகக் குத்தி
உறைசேர் நாக்கு தடுமாறி யொக்க வலித்து திமிருண்டாய்
முருவு முறுப்புத் தனித்தனியே சுழித்து வாங்கு முகவாதம்
உறைசெய் பக்க வாதமெனிற் செய்யுங் குணங்களோதுவாம்
கண்ணிற் தலையிற் புருவத்திற் காதிற் செவிட்டிற் குத்துண்டாய்ப்
பண்ணிப் பதிக்கு முகந்தனைப் பக்கம் பற்றி திருகிவிடும்
எண்ணிச் சொல்லு முகவாத மிதுவுங் சாத்தியமாமென்று
நண்ணிச் சொன்னோ மொருபாலினாடு முகத்தில் வாதமிதே.”

- பரராச சேகரம்

- ❖ Ear pain
- ❖ Dysarthria
- ❖ Deviation of face and mouth

அர்த்தித வாதக் குணங்கள்

“மூக்கொடு கண்ணும் வாயு முகமுஞ்செம் பாகிக் கோணும்
நாக்கது குளறுஞ்சென்னி நடுங்கிடுங் காதடைக்குந்
தூக்கமும் பயமுமுண்டாந் தும்முலு மறிவு நீங்கும்
ஆக்கமு மழகுங் குன்றும் அர்த்தித வாதமாமே

- தன்வந்தரி வைத்தியம் Part I

- ❖ Deviation of face
- ❖ Dysarthria
- ❖ Ear pain

முகவளி

“முகத்தில் லோர்பால் கோட்ட மாதல்
மிடறு கோடல் தலைநடுக்கிடுதல்
பேச்செழாமை விழிகவுள் புருவம்
கழுத்து போவாய் பல்லிவை நோதல்
எனுமிவை முகவளிக் குறியென மொழிய”

- மான்முருகியம்

- ❖ Difficulty in swallowing
- ❖ Dysarthria
- ❖ Pain over the face

அர்த்த முகவாதம்

“பின்னி வரும் அர்த்த முகவாத நேர்மை
பீடிக்கும் வகையதனைச் சொல்வேன் பாராய்
உன்னதமாய் முகத்தில் நோய் கண்டு
உறுதியுள்ள முக்கணையைக் கெடுத்து போகும்
நிகழ்த்துவேன் கண்ணிமைகள் முடா ஐயா
நிச்சயமாய் வருத்தமடா இருக்குமப்பா
மகத்துவமாம் கன்னமது தளர்ந்து தொங்கி
மானிடருக்கு வாயோரங் கீழிறங்கி கொள்ளும்”

- அகத்தியர் குணவாகடம்

- ❖ Loss of naso labial fold
- ❖ Inability to close the eye
- ❖ Drooling of face
- ❖ Deviation of mouth

முகவாத சன்னி குணம்

“வட்டமா முகமுங் கோணும் வாய் பல்லுந்தானுங் கோணும்
கட்டவர் சேத்துமங்கள் காரியே யுமிழொண்ணாது
எட்டாம முட்ட நீர்களைடுத்து கொப்பளிக்கொண்ணாது
முட்டியே முயன்று சீறுமுகவாத சன்னியாமே”

- அகத்தியர் ஆயுள் வேதம் 1500

- ❖ Deviation of mouth and face
- ❖ Difficulty in swallowing

THEORETICAL VIEW OF DISSERTATION TOPIC IN MODERN ASPECT

ANATOMY OF THE FACIAL NERVE

Facial nerve is a seventh cranial nerve. It is a mixed cranial nerve.

Development

The cartilage of second pharyngeal arch or hyoid arch (Reichert's Cartilage) gives rise to the stapes, styloid process of the temporal bone, stylohyoid ligament, the lesser horn and upper part of the body of the hyoid bone. Muscles of the hyoid arch are the stapedius, stylohyoid, posterior belly of the digastric, auricular muscles and muscles of facial expression.

The facial nerve, the nerve of the second pharyngeal arch, supplies all of these muscles.

Nuclei of the facial nerve

Nuclei are situated within the dorsal part of the pons. The nuclei are

- ❖ Motor nucleus
- ❖ Sensory nucleus – nucleus of the tractus solitarius
- ❖ Para sympathetic nucleus – superior salivatory nucleus.
- ❖ Upper part of nucleus of the spinal tract of trigeminal.

Motor nucleus

Motor nucleus is found within the reticular formation of the pons. It is divided into lateral, intermediate and medial portions.

The lateral portion of the nucleus mainly supplies muscles around the mouth including buccinator. The intermediate portion mainly supplies muscles of the upper face including orbicularis oculi. The medial portion mainly supplies auricular muscles, platysma and occipitofrontalis.

Nucleus of the tractus solitarius

This is the sensory nucleus of the facial nerve, situated in the upper part of the tractus solitarius. To this nucleus, the sensory part of the facial nerve or the nervus intermedius brings sensation from the anterior 2/3 of tongue and palate.

Superior salivatory nucleus

It is the parasympathetic nucleus to supply submandibular and sublingual salivary glands.

Upper part of the nucleus of the spinal tract of trigeminal

This nucleus receives auricular sensation via the auricular branch of vagus nerve. The geniculate ganglion of the facial nerve contains cell bodies of these fibres.

Connections

Cortico nuclear fibres of same side and opposite side. The facial muscles of lower half of face receive contralateral nerve supply but the frontalis and muscles around the eye are supplied by bilateral cortical innervation. Therefore these muscles are not paralysed during upper motor neuron lesion of the facial nerve.

Course within the pons

The motor and sensory roots winds round the abducent nerve nucleus to form the facial colliculus. They pass forward and leave the pons. They emerge between the lower border of pons and upper border of the olive of the medulla.

Course

After emerging from the pons, two roots of facial nerve pass laterally and enter the internal auditory meatus. This part of the nerve is accompanied by the stato acoustic nerve. Laterally, the two roots unite to form the geniculate ganglion and from the trunk of the facial nerve. Now the nerve is passing through ***facial canal or canal of Fallopei.***

On reaching medial wall of middle ear it runs posteriorly. It is situated superior to the promontory of the middle ear. It reaches the medial wall of mastoid antrum and passes behind the posterior wall of the middle ear cavity, it runs vertically downwards to the stylomastoid foramen.

Extra cranial course

After emerging through the stylo mastoic foramen it runs forward and it crosses styloid process of the temporal bone. It enters the posterior medial surface the parotid gland. Within the gland it crosses the retro mandibular and external carotid artery.

Termination

It terminates by dividing into temporo facial and cervico facial branches.

The temporo facial branch passes upwards and divides into

- ❖ Temporal nerve
- ❖ Zygomatic nerve

The cervico branch passes downwards and divides into

- ❖ Buccal nerves
- ❖ Marginal mandibular nerve
- ❖ Cervical nerve

From the anterior border of the parotid gland five terminal branches of facial nerve are emerging.

Branches of facial nerve

1. Branches in the facial nerve canal

- a. Nerve to stapedius to supply the stapedius muscle of the middle ear.
- b. Chorda tympani nerve. It commences about 0.5cm. above the stylomastoid foramen.

2. Branches immediately below the stylomastoid foramen.

- a. Posterior auricular nerve to supply posterior muscles of the pinna and occipitalis in the scalp.
- b. Nerve to posterior belly of the digastric. This nerve supplies
 - ❖ Posterior belly of the digastric
 - ❖ Stylohyoid muscle

3. Branches in the face

a. Temporal branch

This nerve pierces upper surface of the parotid gland passes upwards and crossing the zygomatic arch. It supplies muscles of the auricle, namely auricularis anterior, auricularis superior, upper half of orbicularis oculi, frontalis, and corrugator supercilli muscles.

b. Zygomatic branch

This nerve runs along the zygomatic arch and supplies lower half of orbicularis oculi.

c. Buccal branch

This nerve divides into superficial and deep branches. The superficial branch supplies procerus muscle. The deep branch divides into superior and inferior divisions. The superior divisions supplies zygomaticus major, zygomaticus minor, levator labii superioris, levator labii superioris alaeque nasi and levator angularis. The inferior division of deep buccal nerve supplies buccinator and orbicularis oris muscle.

d. Marginal mandibular

This nerve passes downwards and enters the neck below the angle of the mandible. It then passes along the lower border of the mandible. It supplies depressor anguli , orbicularis oris, risorius, depressor labii inferioris, mentalis.

Marginal mandibular nerve near the angle of mandible is related to a lymph gland. This lymph gland may be infected and form an abscess. During draining this abscess the incision may endanger this nerve; incisions along the lower border of the mandible may injure this nerve.

e. Cervical branch

It passes vertically downwards behind the angle of mandible to the neck. It supplies the platysma muscle.

Communications of the facial nerve

1. Within the internal acoustic meatus it communicates with the vestibulocochlear nerve.
2. At geniculate ganglion
 - a. It communicates with the external petrosal nerve. (middle meningeal plexus)
 - b. It communicates with the lesser superficial petrosal nerve. (Otic ganglion)
 - c. It communicates with greater superficial petrosal nerve. (Pterygo palatine ganglion).
3. At facial nerve canal, it communicates with vagus (auricular branch)
4. Just below the stylomastoid foramen it communicates with the glossopharyngeal, vagus, auriculo temporal and great auricular nerves.
5. Behind the pinna, it communicates with the lesser occipital nerve.
6. In the face, it communicates with branches of the trigeminal nerve.
7. In the neck, it communicates with the transverse cutaneous nerve of the neck.

There are three supra nuclear pathways to control facial movements. They are voluntary, emotional and extra pyramidal motor.

Muscles of the facial expression

These are sub cutaneous muscles and they are attached to the skin. They are developed from the second pharyngeal arch. Hence these muscles are supplied by the facial nerve. These muscles are arranged around the openings of the face. The main functions of these muscles will be either to open or close these openings. While doing these movements the facial expression results as a byproduct.

Muscles of the nose

- ❖ Nasalis
- ❖ Depressor septi nasi

Muscles of the mouth

- ❖ Orbicularis oris
- ❖ Levator labii superioris alaeque nasi
- ❖ Levator labii superioris
- ❖ Zygomaticus major
- ❖ Zygomaticus minor
- ❖ Levator anguli oris
- ❖ Depressor labii inferioris
- ❖ Depressor anguli oris
- ❖ Mentalis
- ❖ Buccinator

Muscles of the eye lid

- ❖ Orbicularis oculi
- ❖ Corrugator supercilli
- ❖ Levator palpebrae

Orbicularis oris

- ❖ This is the sphincter of the mouth.
- ❖ This muscle encircles the oral fissure. It is partly formed by other muscles inserted in to the lips and partly formed by proper lip muscles.
- ❖ It is made in to many layers.

Nerve supply

- ❖ Buccal nerve
- ❖ Marginal mandibular branch of the facial nerve.

Actions

- ❖ It compresses the lips against the teeth.
- ❖ It helps in mastication and speech.
- ❖ It produces the lips.
- ❖ The superficial layer helps in opening of the lips.

Buccinator muscle (trumpet muscle)

This is the muscle of the cheek.

Origin

- ❖ Lateral surface of the maxilla and mandible at the level of the third molar tooth.
- ❖ Pterygomandibular raphe

Insertion

- ❖ All the fibres converge at the angle of the mouth.
- ❖ Upper fibres go to the upper lip.
- ❖ Lower fibres go to the lower lip.
- ❖ Middle fibres decussate near the angle of the mouth.
The lower part of the middle fibres reaches the upper lip.
The upper part of the middle fibres reaches the lower lip.
- ❖ All the fibres fuse with the fibres of the orbicularis oris.

Nerve supply:

Buccal Nerve of the facial nerve.

Action

- ❖ It compresses the cheek against the teeth. This action is acquired during the process of chewing, when the food accumulates within the vestibule of the mouth.
- ❖ It helps in sucking by compressing the cheek. Its action is required to blow the cheek. Hence it is called as the trumpet muscle.

The levator labii superioris alaeque nasi

Origin

Frontal process of the maxilla.

Insertion

- ❖ It divides into nasal and labial parts. The nasal part is medially situated and inserted to the skin and cartilage of the ala of the nose.
- ❖ The labial part is laterally situated and it is inserted into the orbicularis oris.

Nerve supply

Buccal branch of the facial nerve.

Actions

The medial part dilates the nose by lifting the ala of the nose. The lateral part elevates the upper lip.

The levator labii superioris

Origin

- ❖ Infra orbital margin of the maxilla, above the infra orbital foramen.
- ❖ Zygomatic bone.

Insertion

Orbicularis oris

Nerve supply

Buccal branch of the facial nerve.

Actions

It elevates and everts the upper lip. Its action is required for the formation of the nasolabial furrow.

Zygomaticus minor

Origin

Outer surface of the zygomatic bone behind the zygomatico maxillary suture.

Insertion

Orbicularis oris

Nerve supply

Buccal branch of the facial nerve.

Actions

It pulls the upper lip upwards. Its action is required for the formation of the naso labial furrow.

Zygomaticus major(Smiling muscle)

Origin

Zygomatic bone in front of the zygomatico temporal suture.

Insertion

Orbicularis oris.

Nerve supply

Buccal branch of facial nerve.

Action

Elevation of the angle of the mouth and forms the naso labial furrow.

The Depressor anguli oris

Origin

Oblique line of the mandible.

Insertion

Blends with the orbicularis oris near the angle of the mouth.

Nerve supply

Marginal mandibular branch of the facial nerve.

Action

Draws the angle of the mouth downwards and laterally.

The Depressor labii inferioris

Origin

Oblique line of mandible near symphysis menti.

Insertion

- ❖ Orbicularis oris
- ❖ Skin of the lower lip

Nerve supply

Marginal mandibular nerve

Action

Depressor of the lower lip.

The mentalis

Origin

Incisive of the lower lip

Nerve supply

Marginal mandibular nerve.

Action

It draws the lower lip down wards.

The Risorius

Origin

Fascia covering the parotid gland.

Insertion

Angle of the mouth

Nerve supply

Buccal branch of facial nerve.

Action

Its action expresses grining. It retracts the angle of the mouth.

Orbicularis oculi - muscles around the orbit

It is found within the eyelid, forehead, temporal region and upper part of the cheek. It encircles the orbital margin.

Parts of orbicularis oculi

- ❖ Orbital part
- ❖ Palpebral part
- ❖ Lacrimal part

Orbital part

Origin

- ❖ Medial palpebral ligament
- ❖ Frontal process of the maxilla
- ❖ Nasal process of the frontal bone.

Insertion

It encircles around the orbital margin. The upper and lower fibres are continuous with each other at the lateral orbital margin. Some fibres are inserted on the skin over the eyebrow. Upper fibres meet and fuse with the frontal belly of occipito frontalis muscle.

Palpebral part

Origin

- ❖ Medial palpebral ligament
- ❖ Medial border of the orbit above and below the medial palpebral ligament.

Insertion

Lateral palpebral raphe

Lacrimal part

Origin

- ❖ Lacrimal fascia
- ❖ Lacrimal crest and lateral surface of the lacrimal bone.

Insertion

It divides into upper and lower portions. They enter the eyelids. They are attached to the tarsalplate and lacrimal canaliculi. Most fibres of this muscle extend laterally and decussate at lateral palpebral raphe.

Nerve supply

Temporal and zygomatic branch of the facial nerve.

Actions

1. Orbital part

- ❖ It locks the eyelids. Thus it acts as a strong sphincter of the orbit.
- ❖ It opposes the action of the frontalis muscle.

2. Palpebral part

Shuts the eyelids tightly during blinking and sleeping.

3. Lacrimal part

Pulls the eyelids medially. Dilates the lacrimal sac.

The corrugator supercilli (Muscle of frowning)

Origin

Medial part of super ciliary arch.

Insertion

Skin and fascia above the supra orbital margin.

Nerve supply

Temporal branch of facial nerve.

Action

Draws the eyebrow medially. It forms vertical furrows on the eyebrow. This causes the expression of frowning.

PHYSIOLOGY

The Facial Nerve has four component with distinct function. These are,

1. Branchial motor (Special visceral efferent)

Branchial motor supplies the muscles of Facial expression, Posterior belly of Digastric, Stylo hyoid and Stapedius.

2. Visceral motor (General visceral efferent)

Visceral motor supplies the Parasympathetic innervations of the Lacrimal, Sub mandibular and Sub lingual glands, as well as mucous membrane of Naso pharynx, Hard palate and soft palate.

3. Special sensory (Special afferent)

Taste sensation from the anterior 2/3 of tongue, hard palate and soft palate.

4. General sensory (General somatic efferent)

General sensation from the skin of the concha of auricle and from a small area behind the ear.

Branchial motor fibres constitute the largest portion of the Facial Nerve. The remaining three components are bound in a distinct facial sheath from the branchial motor fibres .Collectively these three are referred to as the nervous intermedius.

PATHOLOGY

The symptoms explained in the poem are, Inability to closing the eye, Deviation of mouth and face in to normal side, numbness over the face, excessive salivation, increased sweating.

Bell's Palsy is caused by an inflammation within a small bony tube called the fallopian canal. The canal is an extremely narrow area. An inflammation within it is likely to exert pressure on the nerve, compressing it. Likewise, if the nerve itself becomes inflamed within this small canal, it can encounter pressure, with the same result of compression.

The main Pathology behind these symptoms are paralysis of Facial Nerve.

Bell's palsy is a one type of Idiopathic acute Facial Nerve paralysis. This is accurately described as a multiple cranial nerve ganglionitis that involves the Facial Nerve.

Pathogenesis

Pathogenesis of the facial paralysis is unknown. The few autopsied cases of this disease have shown only on descript changes in the facial nerve and not inflammatory changes, as is commonly presumed.

FACIAL PARALYSIS

Facial Paralysis is due to paralysis of the VII Cranial Nerve.

Classification of facial palsy

It may be broadly classified into two types. They are:

- ❖ Upper motor neuron type or supra nuclear type
- ❖ Lower motor neuron type

1. UPPER MOTOR NEURON TYPE OR SUPRA NUCLEAR TYPE

In this type, the cortico spinal tract supplying the facial neuron muscles are affected and the lesion is always above the level of pons.

It is again classified into two types. They are:

- ❖ Voluntary
- ❖ Emotional

Table -6

Difference Between Voluntary And Emotional Palsy

<i>Feature</i>	<i>Voluntary</i>	<i>Emotional</i>
Level of lesion	Cortex or sub cortical pyramidal tract	Frontal lobes anterior to precentral gyrus or thalamus or basal ganglia
Facial involvement	More marked on	No change in
a. Voluntary	voluntary contraction	voluntary contraction
b. Involuntary	Preservation of function during crying and smiling etc.	Paresis becomes apparent during these emotional conditions.

LOWER MOTOR NEURON TYPE

The lower motor neuron is the common pathway. Hence a lesion at this site produces weakness of entire half of the face on the ipsilateral side.

Table -7.

The exact site and level of lesions are tabulated as follows.

<i>Site</i>	<i>Causes</i>	<i>Clinical Features</i>
Pons (Nuclear)	Infarction Demyelination Haemorrhage Tumour.	LMN type of ipsilateral face weakness, often VI nerve also affected and contralateral hemiparesis.
Cerebello pontine angle	Acoustic neuroma meningioma	LMN type of ipsilateral face weakness, deafness and tinnitus ophthalmic division of V nerve affected.
Facial canal	Bell's palsy mastoiditis HZV (Ramsay Hunt syndrome)	LMN type of ipsilateral face weakness loss of taste, if lesion is proximal to chorda tympani salivation and lacrimation seen, if lesion is proximal to nerve to stapedius hyperacusis.
Parotid gland	Tumour sarcoidosis	Selective weakness of parts of face due to branch involvement.
Neuro Muscular junction	Myasthenia gravis	Associated ptosis and external ophthalmoplegia, dysphagia, dysarthria and limb weakness.
Muscles	Muscular dystrophy myositis	Limb weakness also weak, tenderness of muscles involved.

Since the Uragan Vatham may correlate with *Bell's palsy*, it is discussed here in detail.

BELL'S PALSY

Definition

Bell's palsy is a form of facial paralysis resulting from damage to the VII cranial nerve.

The condition is named for Charles Bell, a Scottish surgeon in Edinburgh who studied the nerve and its innervations of the facial muscle in 1821.

Since the function of the facial nerve is so complex, many symptoms may occur when the fibres of the facial nerve are disrupted.

Bell's palsy temporarily prevents the nerve from transmitting signals to the muscles causing weakness or paralysis.

Age incidence

It may occur at any age group, but it is slightly more common in the age group from 20-50 years.

Incidence rate

It is about 23 per 1,00,000 annually, or about one in 60 or 70 persons in a life time.

Sexual preponderance

This disorder affects men and women more or less equally and occurs at all ages and at all times of the year.

This incidence is not disproportionately high in pregnant women, contrary to popular belief, but is probably higher in diabetics than in normal population.

Aetiology

The specific cause of Bell's palsy is unknown. A number of things can damage the facial nerve. Several factors predispose this disease. The predisposing factors are,

- ❖ Diabetic mellitus.
- ❖ Hyper tension.
- ❖ Respiratory infection.
- ❖ Chronic otitis media.
- ❖ Parotitis.
- ❖ Exposure to cold.
- ❖ Stress.
- ❖ Dental treatment.
- ❖ Poor nutrition.
- ❖ Leprosy.
- ❖ Brain stem injuries.
- ❖ Trauma to facial nerve.
- ❖ Surgical wounds.
- ❖ Temporal bone fracture.
- ❖ Tumours.

Clinical features

Onset

The onset of Bell's palsy is fairly abrupt, maximum measures being attained by 48 hours as a general rule.

There is frequently pain at the onset in the ear, in the mastoid region, or around the angle of the jaw.

Symptoms

- ❖ Bell's palsy is usually unilateral; rarely bilateral. There is paralysis of the muscles of facial expression. The upper and lower facial muscles are equally affected.
- ❖ A person may not be able to close one eye, inability to blink, or he/ she may have difficulty in shutting their eye completely. Diminished blinking and the absence of tearing together can reduce or eliminate the flow of tears across the eye ball, resulting in drying, erosion, and ulcer formation.
- ❖ When the patient attempts to close the eye, the globe rolls upwards and slightly inwards called Bell's phenomenon.
- ❖ Eversion of the lower lid (ectropion) so the punctum falls away from conjunctiva permitting tears to spill over the cheek. So tears absorption is impaired.
- ❖ The eyebrow droops, and the wrinkles of the brow are smoothed out. So frowning and raising the eyebrow are impossible.
- ❖ The patient complains of a heaviness or numbness in the face, but no sensory loss are demonstrable.
- ❖ The palpebral fissure becomes narrowed and the naso labial fold deepens with the passage of time, the face and even the tip of the nose become pulled to the normal side.
- ❖ The patient cannot retract the angle of mouth, or purse the lips as in whistling.
- ❖ Owing to paralysis of the buccinator, Food accumulates between the cheek and the teeth.

- ❖ Dripping of saliva over angle of the mouth.
- ❖ The forehead does not wrinkle when a person tries to lift their eyebrow.
- ❖ Distortion of the mouth may cause the tongue to deviate to the normal side when protruded, thus giving a false impression of hypoglossal lesion.
- ❖ There may be mild dysarthria.
- ❖ When the inflammatory process extends upwards to involve the nerve above the point at which the chorda tympani leaves it, there is loss of taste on the anterior two thirds of the tongue.
- ❖ When the stapedius is also involved, the patient complaining of hyperacusis

Signs

- ❖ Asymmetry of the face.
- ❖ Widening of palpebral fissure.
- ❖ Bell's phenomenon.
- ❖ Obliteration of nasolabial fold.
- ❖ Deviation of angle of mouth.

Examination of motor function

- ❖ The motor function of the Facial Nerve is tested by asking the patient
 - ❖ To shut the eyes and then try to open
 - ❖ To raise the eyebrows
 - ❖ To frown
 - ❖ To whistle

- ❖ To smile or show his teeth
- ❖ To inflate his mouth with air and blow out the cheeks. Tap the finger in turn on each inflated cheeks.
- ❖ To open his mouth against resistance and see if platysma muscle contracts or not.(Babinski's platysma sign)
- ❖ To show the teeth, the angle of mouth is drawn in to the healthy side.

Examination of Sensory function

The sensory function of the Facial Nerve is tested by,

Taste

Examine the anterior two-third portion of each half of the tongue separately. Use strong solution of sugar and common Salt and Weak solution of Citric acid to test for 'Sweet', 'Sour', and 'bitter' taste respectively.

Examination of Secretory function

Lacrimation:

Increased lacrimation is usually apparent and decreased lacrimation may be determined from the history.

Schirmer's Test

Keep a piece of special blotting paper under the lower eye lid and remove it after five minutes. Normally at least 10 mm of blotting paper will be dampened by the evoked tear secretion.

Nasolacrimal Reflex

Reflex secretion of tears usually produced by stimulation of nasal mucosa by irritating substances such as dilute solutions of ammonia or formaldehyde.

- ❖ Afferent – Trigeminal Nerve
- ❖ Efferent – Greater superficial nerve (a branch of Facial Nerve)

Salivation

Increased or decreased salivation is also appearing from the history.

Examination of the Reflexes

Corneal reflex

- ❖ Afferent – Trigeminal nerve
- ❖ Efferent – Facial nerve

Stapedial reflex

- ❖ Afferent – Vestibulo cochlear nerve
- ❖ Efferent – Facial nerve

Diagnosis

It is purely a clinical diagnosis but it should be differentiated from facial palsy due to other causes.

Pathogenesis

Pathogenesis of the facial paralysis is unknown. The few autopsied cases of this disease have shown only on descript changes in the facial nerve and not inflammatory changes, as is commonly presumed.

Differential diagnosis

1. Tumors

Which invade the temporal bone (carotid body, cholesteoma, and dermoid), may produce a facial palsy, but the onset is insidious and the course is progressive.

2. Fracture of the Temporal bone

It occurs with damage to middle or internal ear.

3. Ram say hunt syndrome

It is presumably due to Herpes Zooster of the geniculate ganglion, consists of a severe facial palsy, associated with vesicular eruptions, external auditory canal, and other parts of the cranial intugement; often the eighth cranial nerve is also affected.

4. Pontine lesion

Infarcts and tumors are the common pontine lesions which may interrupt the facial nerve fibres.

5. Melkersson- Rosenthal syndrome

It consists of a triad of recurrent facial paralysis, permanent facial especially labial edema, less constantly, placation of the tongue.

6. Mobius syndrome

It is congenital facial diplegia. It is development of bilateral facial paralysis usually associated with oculomotor nerve or other disorders.

7. Mimic paralysis:

It is due to frontal or thalamic lesion, which abolish the contralateral emotional movements of the face leaving the voluntary movements unimpaired.

8. Facial hemiatrophy of Rhomberg

It occurs mainly in females and is characterized by a disappearance of fat in the dermal and subcutaneous tissues on one side of the face. It usually begins in adolescence or early adult years and is slowly progressive. In its advance form, the face is gaunt and the skin is thin, wrinkled, and rather brown. The facial hair may turn white, and fall out and the sebaceous glands become atrophic.

9. Supra nuclear type

All of these form of nuclear or peripheral palsy must be distinguished from the supra nuclear type. The frontalis and orbicularis oculi muscles are less involved than that of lower face. There may be dissociation of emotional and voluntary facial movements, and often some degree of paralysis of the arm and leg or aphasia of dominant hemisphere lesions is conjoined.

Complications

Hemifacial spasm

There is frequent contraction of varying speed of the facial muscles, limited to one side. Similar spasm associated with synkinetic facial movement, may develop after incomplete recovery of Bell's palsy.

Facial synkinesis

Attempts to move one group of facial muscles results in contraction of all of them. Facial spasm may develop and persist indefinitely, being initiated by every facial movement.

Prognosis

In Bell's palsy, approximately 85% of cases, there is local conduction block within the facial canal without axonal degeneration. The conduction block is presumably the consequence of segmental demyelination, and this recover fully within a few weeks.

In about 15 percent of cases will have axonal degeneration, resulting in total paralysis. The recovery has to take place by axonal degeneration. Evidence of reinnervation does not appear in under 3 months and the ultimate recovery is incomplete.

Clinically, the presence of incomplete paralysis in the first week is the most favorable prognostic sign. Factors associated with a poorer prognosis than average include hyper acousia, diminished lacrimation, an age greater than 60 yrs, diabetes mellitus and hypertension.

Investigations

No specific confirmatory investigation. But it should be made to rule out, alternate diagnosis.

1. Nerve conduction study

It is a measure of the velocity of conduction of impulse in a nerve. The velocity of the conduction of the impulse between any two points of the nerve can be calculated.

The normal nerve conduction velocity of motor is 70 meters/second (40-60 m/s)

Motor Nerve conduction:

- ❖ Electrical stimulation of a motor nerve normally produces contraction of the muscles supplied by that nerve.
- ❖ The stimulus is applied in the skin over the nerve.
- ❖ The motor unit response is measured by a concentric needle electrode inserted into the muscle. (Motor action potential MAP) – MAP is amplified and displayed on an oscilloscope.
- ❖ If the test is repeated at two points a measured distance apart along the nerve and values obtained are subtracted from one another. Conduction velocity between those two points can be determined.

Sensory Nerve conduction:

- ❖ If a sensory nerve is stimulated distally, the sensory nerve action potential (SNAP) can be recorded at a proximal site.
- ❖ Here again, by measuring the distance between the stimulating and recording electrodes and the time lapse between stimulus and response, the sensory nerve conduction velocity can be calculated.

2. Electro diagnostic study

It can be performed, but it should not give any diagnosis and it should give the prognostic index. Electro myography may be of value in distinguishing temporary conduction defect from a pathologic interruption in the continuity of nerve fibres.

Axons remain excitable distal to the lesion for 3 or 4 days after interruption. It is therefore not possible to be certain from electro diagnostic tests, whether axonal degeneration has taken place until after this time.

At that stage, electrical stimulation of the facial nerve at the stylomastoid foramen with brief pulses will still elicit a muscle contraction if the paralysis is due to conduction block, where-as none will be obtained if axonal degeneration has taken place.

EVALUATION OF THE DISSERTATION TOPIC

Materials and method

The clinical study on Uragan Vatham was carried out at the post graduate Noi Naadal Department of Government Siddha Medical College Hospital, Palayamkottai.

Case Selection and Supervision

15 cases of similar of “Uragan Vatham” were taken from the PG OP, Department of GSMC, Palayamkottai. From which 10 typical cases of “Uragan Vatham” were selected and were followed by the author whose work was under the close supervision of the professor and lecture of the PG Noi Naadal Department.

Evaluation of Clinical Parameters

The cases were subjected to careful scrutiny, which involved history taking and examination of clinical features.

- ❖ Detailed history of present and past illness.
- ❖ Personal and family history.
- ❖ Socio economic status.
- ❖ Occupational history.
- ❖ Dietary habits.
- ❖ Seasonal variation.
- ❖ Raasi, Natchathiram.
- ❖ Manikkadai nool.

Were noted. All the clinical features were carefully examined.

The clinical signs and symptoms of Uragan Vatham were taken from Yugi Vaithya chinthamani – 800.

Signs and symptoms of Uragan Vatham

- ❖ Pulling of face to normal side
- ❖ Deviation of mouth
- ❖ Numbness over the face
- ❖ Involuntary facial movement
- ❖ Inability to close the eye
- ❖ Excessive salivation
- ❖ Disuse atrophy
- ❖ Increased sweating

Study on Siddha clinical diagnosis

Modes of investigation of cases are

- ❖ Poriyaalarithal
- ❖ Pulanaalarithal
- ❖ Vinaathal
- ❖ Mukkuttra Nilaigal
- ❖ Udal Kattu Nilaigal
- ❖ Envagai Theruvugal

The clinical investigation

For further detailed study about this disease, the following laboratory investigations were done in these cases.

Haematological

- ❖ Total count of w.b.c.
- ❖ Differential count of w.b.c.
- ❖ Haemoglobin
- ❖ Erythrocyte sedimentation rate

Bio-chemical

- ❖ Blood sugar

Urine Analysis

- ❖ Albumin
- ❖ Sugar
- ❖ Deposit

Motion

- ❖ Ova
- ❖ Cyst

Other test

Nerve conduction study

OBSERVATION AND RESULTS

Results are observed with respect to the following aspects.

- ❖ Age and Sex reference
- ❖ Thinai
- ❖ Paruva kaalam
- ❖ Mukkutrani
- ❖ Udal thathukkal
- ❖ Envagai thervugal
- ❖ Manikkadai nool
- ❖ Clinical feature
- ❖ Laboratory findings

Table -8

Age and Sex reference

<i>Age</i>	<i>Sex</i>		<i>No of cases</i>
	<i>Male</i>	<i>Female</i>	
20-30 years	1	1	2
31-40 years	2	2	4
41-60 years	2	2	4

Table - 9

Thinai

<i>Sl No</i>	<i>Thinai</i>	<i>No of cases</i>
1	Kurinji	-
2	Mullai	-
3	Marutham	10
4	Neithal	-
5	Paalai	-

Table - 10

Paruvakaalangal

<i>Sl. No</i>	<i>Paruvakaalam</i>	<i>No. of cases affected</i>
1.	Kaarkaalam (Aavani-Puratasi)	-
2	Koothirkaalam (Iyppasi-Karthigai)	-
3	Munpanikaalam (Margazhi-Thai)	2
4	Pinpanikaalam (Masi-Panguni)	4
5.	Ilavenilkaalam (Chithirai-Vaigasi)	4
6	Muthu-venilkaalam (Aani-Aadi)	-

Table - 11

Derangement of Vali

<i>Sl.No</i>	<i>Types</i>	<i>No of cases affected</i>	<i>Changes</i>
1	Piraanan	3	Dyspnoea
2	Abaanan	4	Constipation
3	Viyaanan	10	Inability to close the eye
4	Udaanan	10	Mild dysarthria
5	Samaanan	10	Increased appetite
6	Naagan	10	Inability to close the eye
7	Koorman	10	Inability to close the eye
8	Kirukaran	10	Increased salivation
9	Thevathathan	10	Irritability
10	Thananjayan	-	-

Table - 12

Derangement of Azhal

<i>Sl.No</i>	<i>Types</i>	<i>No of cases affected</i>	<i>Changes</i>
1	Analapitham	10	Increased appetite
2	Ranjagapitham	4	Palloriness
3	Sathagam	10	Diminished facial expression
4	Aalosagam	-	-
5	Praasagam	4	Dryness

Table - 13

Derangement of Iyam

<i>Sl.No</i>	<i>Types</i>	<i>No of cases affected</i>	<i>Changes</i>
1	Avalambagam	10	Dyspnoea
2	Kilethagam	-	-
3	Pothagam	10	Loss of taste
4	Tharpagam	-	-
5	Santhigam	-	-

Table - 14

Udal Thathukkal

The observation in Udal Thathukkal has been tabulated as follows.

Sl.No	Types	No. of cases affected	Changes
1	Saaram	10	Depression, anxiety
2	Senneer	10	Nerve weakness
3	Oon	10	Diminished facial expression
4	Kozhuppu	3	Disuse atrophy
5	Enbu	-	-
6	Moolai	-	-
7	Sukkilam/suronitham	-	-

Table - 15

Envagai Thervugal

Op.No	Sparism	Naa	Niram	Mozhi	Vizhi	Malam	Moothiram	Naadi
15513	A	A	NA	A	A	NA	N	VA
22823	A	A	NA	A	A	NA	N	VA
29449	A	A	NA	A	A	A	N	VA
32537	A	A	NA	A	A	A	N	VA
32994	A	A	NA	A	A	NA	N	VA
33004	A	A	NA	A	A	NA	N	VA
33014	A	A	NA	A	A	NA	N	VA
33499	A	A	NA	A	A	A	N	VA
33504	A	A	NA	A	A	NA	N	VA
33508	A	A	NA	A	A	A	N	VA

N- Normal

A- Affected

NA- Not Affected

VA- Vali Azhal

Table - 16

Manikkadai Nool

Sl. No	Viral kadai Alavu	No.of cases
1	9	4
2	9 ¼	6

From the Vral Kadai Alavu majority of patient were having 9 ¼ , as Viral kadai Alavu, the symptom mentioned under the Uragan Vatham is eye irritation.

Table - 17

Clinical Feature

Sl.No	Clinical Feature	No. of cases
1	Pulling of face	10
2	Deviation of mouth	10
3	Numbness over the face	10
4	Inability to close the eye	10
5	Disuse atrophy	3
6	Increased sweating	3
7	Excessive salivation	10
8	Involuntary facial movement	3
9	Shyness	10

Table - 18

ALLIED PARAMETERS

Laboratory investigation of selected 10 cases

OP.No	Blood				ESR		Hb Gms%	Bio Chemical	Urine			Motion	
	TC Cells/ cumm	DC			$\frac{1}{2}$ hr mm	1hr mm	Bl.sugar	Alb	Sug	Dep	Ova	Cyst	
		P	L	E									
15513	9800	65	33	02	03	07	10	86	-	-	-	-	-
22823	7600	59	39	02	11	38	12.45	116	-	-	-	-	-
29449	9600	58	42	-	06	14	12.6	116	-	-	-	-	-
32537	9100	66	32	02	04	09	12.6	98	-	-	-	-	-
32994	9500	67	30	02	04	07	9.5	112	-	-	-	-	-
33004	9750	63	34	03	03	07	9.8	110	-	-	-	-	-
33014	9350	60	38	02	07	15	10	104	-	-	-	-	-
33499	9500	65	32	03	08	15	9	108	-	-	-	-	-
33504	9500	55	40	04	03	08	12.5	112	-	-	-	-	-
33508	9700	59	35	04	04	10	12	140	-	-	-	-	-

Statistical analysis of Uragan Vatham

The statistics mean 8.D median and percentages are used to analyses the study subjects and interpretation are made with the use of students‘t’ test, Relative Risk(RR), Attributable Risk (AR),and Odds Ratio (OR).

Observation and results

Age and Sex

The study subjects were analysed based on their Age and Sex. The comparison of Sex with their Age distribution is furnished in the below mentioned table.

Table - 19

Age and sex wise distribution of study subjects.

<i>Age group</i>	<i>Sex</i>		
	<i>Male</i>	<i>Female</i>	<i>Total</i>
25-29	1	1	2
30-34	-	1	1
35-39	2	1	3
40-44	-	-	-
45-49	1	2	3
50-54	1	-	1
Total	5	5	10
Mean	40.2	38.4	39.3
8.D	11.2	8.3	9.4
Medium	38	35	37
Range	29	20	29
‘t’	0.287		
	p>0.05		

The mean age of the male subjects is 40.2±11.2 years and the same of female is 38.4±8.3 years. There is a difference between the mean ages of the sexes, but the observed difference of mean age is not statistically significant (t=0.287 and p>0.05)

The observed difference may be attributed to the sampling fluctuations. The mean ages of the total study subjects is 39.3±9.4 and the median age is 37 years. The incidence of the disease is 25 to 54 years.

Paruvakaalam

The incidence of the disease is classified according to the season.

Table - 20

The Sex wise seasonal incidence of Uragan Vatham.

<i>Paruvakaalam</i>	<i>Sex</i>			<i>RR</i>	<i>AR</i>	<i>OR</i>
	<i>Male</i>	<i>Female</i>	<i>Total</i>			
Panikaalam	3	3	6	1	0	1
Venil kaalam	2	2	4			
Total	5	5	10			

The above table shows that there is no significant ratio is observed among the Sex and Paruvakaalam. The incidence of the disease is same in both Paruvakaalam since RR and OR = unity

Etiological factor

All the 10 subjects are exposure to chill weather. Chill weather is crucial factor in the incidence of the disease. But some cases are alone with other diseases like hypertension and diabetes mellitus. The below mentioned analysis and interpretation are clearly shows the etiology of exposure to chill weather with the diseases.

Table - 21

Distribution of exposure to chill weather with hypertension

	<i>Hypertension</i>			<i>RR</i>	<i>AR</i>	<i>OR</i>
	<i>Yes</i>	<i>No</i>	<i>Total</i>			
Exposure to chill weather	3	7	10			
Exposure to chill weather	0	10	10	7.0	85.7%	10.5

From above table it is shows that exposure to chill weather with hypertension risk is 7 times greater than the without hypertension exposure to chill weather. The attributable risk without hypertension exposure to chill weather is 85.7%.The odd of chill weather with hypertension risk is 10.5 times greater.

Table - 22

Distribution of exposure to chill weather with diabetic

	<i>Diabetic</i>			<i>RR</i>	<i>AR</i>	<i>OR</i>
	<i>Yes</i>	<i>No</i>	<i>Total</i>			
Exposure to chill weather	1	9	10			
Exposure to chill weather	0	10	10	3.0	66.7%	3.5

The diabetic with exposure to chill weather is a risk of incidence of the disease. The ratio is 3 times greater than the without diabetic exposure to chill weather. The chill weather is on attributable ratio in the absence of diabetic and the risk is 66.7%. The odd of exposure to chill weather with diabetic is 3.5 times greater than the without diabetic exposure to chill weather. Totally chill weather is a crucial etiological factor of the incidence of the Uragan Vatham.

Table - 23

Classification of mukutra Nilaigal

<i>Sl. No</i>	<i>Component</i>	<i>N</i>	<i>Types</i>	<i>Affected</i>	
				<i>Number</i>	<i>%</i>
1	Vali	10	Praanan	3	30
		10	Abanan	4	40
		10	Viyanan	10	100
		10	Udanan	10	100
		10	Samaanan	10	100
		10	Naagan	10	100
		10	Koorman	10	100
		10	Kirukaran	10	100
		10	Thevathathan	10	100
2	Azhal	10	Anarpitham	10	100
		10	Ranjagapitham	4	40
		10	Sathagam	10	100
		10	Prasagam	3	30
3	Iyam	10	Avalambagam	10	100
		10	Pothagam	10	100

The above table shows the indication of cent percent of mukutra nilaigal namely Praanan, Abaanan, viyanan, Udanan, Samaanan, Naagan, Koorman, Kirukaran, Thevathathan, Anarpitham, Sathagam, Avalambagam, Pothagam. Abanan and Ranjagapitham are 40%.

Table - 24

Classification of affected udal thathukkal

<i>Sl.No</i>	<i>Types</i>	<i>N</i>	<i>Affected cases</i>	
			<i>Number</i>	<i>%</i>
1	Saaram	10	10	100
2	Senneer	10	10	100
3	Oon	10	10	100
4	Kozhuppu	10	3	30

The udal thathukkal saram, senner and oon are cent percent affected, kozhuppu 30% is affected.

Table - 25

Classification of Uragan Vatham under Envagai Thervugal.

<i>Sl.No</i>	<i>Envagai Thervu</i>	<i>n</i>	<i>Affected</i>	
			<i>Number</i>	<i>%</i>
1	Sparism	10	10	100
2	Naa	10	10	100
3	Niram	10	10	100
4	Mozhi	10	10	100
5	Vizhi	10	10	100
6	Malam	10	4	40
7	Moothiram	10	0	0
8	Naadi-ValiAzhal	10	10	100

Cent percent affected cases observed in all Envagai thervugal except Niram,Malam and Moothiram.

The affected level Malam is 40%. The remaining Niram and Moothiram cent percent not affected.

Table – 26

Viralkadai alavu

Viralkadai alavu	9	9 1/4	Total	Mean	Medium	8.D	Normal range
No.of cases	4	6	10	9.25	9.25	0.23	9 to9 1/2

The viralkadai alavu of Uragan vatham cases are term of mean is 9.25 ± 0.25 and is term median is 9.25. The normal ranges will be 9-9 1/2.

Table - 27

Classification of neikuri.

Sl. no	Character of Neikuri	n	Cases	
			Number	%
1	Mellana paraval	10	10	100

Mellana paraval occur in 100% of the cases.

Table - 28

Classification of Uragan Vatham cases based on the symptoms.

<i>Sl.No</i>	<i>Clinical features</i>	<i>n</i>	<i>Cases</i>	
			<i>Number</i>	<i>%</i>
1	Pulling of face	10	10	100
2	Deviation of mouth	10	10	100
3	Numbness over the face	10	10	100
4	Involuntary facial movement	10	10	100
5	Shyness	10	10	100
6	Inability to close the eye	10	10	100
7	Disuse atrophy	10	3	30
8	Increased sweating	10	3	30
9	Excessive salivation	10	9	90

The cent percent clinical symptoms are observed in pulling of face, deviation of mouth, numbness over the face, Inability to close the eye. Only 30% of symptoms observed in both of increased sweating, disuse atrophy, shyness and involuntary movements and 90% in excessive salivation.

DISCUSSION

In Yugi Vaithiya sinthamani, 'Uragan Vatham' is described under Vali disease. The Name 'Uragan Vatham' itself implies, it is a Vali disease principally affecting the Facial Nerve.

The primary aim of this dissertation is to help arriving at a correct diagnosis of Uragan Vatham through Envagai thervugal, Mukkutra nilaigal, changes in Udal kattugal, along with Modern parameters. Apart from these major criteria, Age, Sex distribution, Socio economic status, Thinai and Paruvakaalam were also taken in arriving at the diagnosis.

The etiology and pathogenesis of the disease is unknown. The signs and symptoms are inability to close the eye, deviation of mouth, increased salivation, numbness over the face, involuntary facial movement and shyness. The disease only diagnosed by the above clinical feature.

Humoural changes, seasonal and environmental changes are important pathogenic factors which cause changes in the seven physical constituents and bring about the diseases. These changes in physical constituents are diagnosed through the Envagai thervugal.

Ten patients were selected for this study and they were properly enrolled in the Out Patient of PG Noi Naadal department and thoroughly examined.

1. Age distribution

The incidence of the disease Uragan Vatham is between the ages of 25 to 60 years in the studied cases.

2. Sex distribution

Both sexes are equally affected.

3. Socio- economic status

Socio economic status has no marked relevance to this disease.

4. Thinai

The entire patient belongs to Marutha nilam. In Marutha nilam, normally the severity of the disease is under control. Change of the life style is play a major role in pathogenesis of the disease.

5. Paruvakaalangal

Uragan vatham occur in all season, but it is mostly occur in Munpani kaalam and Pinpani kaalam. Because the main predisposing factor of the Uragan Vatham is exposure to chill weather.

6. Humoral Variation (Mukkuutra verupadukal)

Vali, Azhal and Iyam are three vital forces which form the functional units of the human body. The following changes are noted in this disease.

Table - 29

Derangement of Vali

Sl. No	Types	Changes	Character
1.	Praanan	Affected	Dyspnoea
2	Abanan	Affected	Constipation
3	Viyanan	Affected	Inability to close the eye, diminished facial muscle action and excessive sweating
4	Udhanan	Affected	Mild dysarthria
5	Samaanan	Affected	Increased appitete
6	Naagan	Affected	Inability to close the eye
7	Koorman	Affected	Inability to close the eye
8	Kirukaran	Affected	Excessive salivation
9	Thevathaththan	Affected	Irritability

Table - 30

Derangement of Azhal

<i>Sl. No</i>	<i>Types</i>	<i>Changes</i>	<i>Character</i>
1	Anarpitham	Affected	Increased appetite
2	Ranjaga pitham	Affected	Palloriness
3	Sathaga pitham	Affected	Diminished facial expression in affected side.
4	Praasagam	Affected	Dryness

Table - 31

Derangement of Iyam

<i>Sl.No</i>	<i>Types</i>	<i>Changes</i>	<i>Character</i>
1	Avalambagam	Affected	Dyspnoea
2	Pothagam	Affected	Loss of taste in affected side.

Among the variation of the Mukutra nilaigal, the Vali and Azhal kutram are increased but Iya kutram is decreased.

Table - 32

Udal Thathukkal

The observation in udal Thathukkal has been tabulated as follows.

<i>Sl.No</i>	<i>Types</i>	<i>Changes</i>	<i>Character</i>
1	Saaram	Affected	Depression and anxiety
2	Senneer	Affected	Nerve weakness
3	Oon	Affected	Diminished facial muscle action.
4	Kozhuppu	Affected	Disuse atrophy

Envagai Thervugal:

Among the Envagai Thervugal Naa, Mozhi, Vizhi, Meikuri, Malam and Naadi were affected and reflects the characteristic picture of Uragan Vatham.

Table – 33

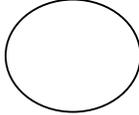
<i>Sl.No</i>	<i>Types</i>	<i>Changes</i>	<i>Character</i>
1	Meikuri	Affected	Thatam, numbness over the face
2	Niram	Not affected	-
3	Vizhi	Affected	Inability to close eye, eye irritation
4	Mozhi	Affected	Thalnthali
5	Naa	Affected	Loss of taste in affected side tongue
6	Malam	Affected	Constipation
7	Moothiram		
	Niram	Not Affected	-
	Manam	Not Affected	-
	Edai	Not Affected	-
	Nurai	Not Affected	-
	Enjal	Not Affected	-
8	Kaikuri	Affected	ValiAzhai

Neerkuri:

The patient had straw coloured urine. No abnormality could be observed in Neerkuri.

Table – 34

Neikuri:

<i>Test</i>	<i>Character of Neikuri</i>	<i>Figure</i>
Neikuri	Oil slowly spreads in urine	

Interpretation of Allied parameters

In this disease, due to the absence of systemic involvement, the routine examination shows no specific changes. ***Nerve Conduction*** study help to prognosis of this disease.

Thus, allied parameters are not having important role to diagnose the disease.

HIGHLIGHTS OF DISSERTATION TOPIC

Uragan Vatham comes under vali disease seen in Yugi Vaithiya sinthamani.

Naturally Vali is living in the Nerves and it is maintain the normal physiological functions of the body i.e. both motor and sensory activities of the body. This concept is quoted in Maruthuva Baratham as “வாதமாய் படைத்து.....”

“தக்க வாயு கோபித்தால் சந்துளைந்து சூலைநோவா
மிக்க கொட்டாவி விட்டங் கெரியு மலங் கட்டும்
ஓக்க நரம்புதான் முடங்கு மலர்ந்து வாய்நீருறிவரும்
மிக்க குளிரும் நடுக்கமாய் மேனி குளறி வருங்காணே.”

- தேரையர் வாகடம்

If Vali thathu increased, causes the nerve paralysis, increased salivation and tone are decreased part.

Uragan Vatham patient is having Weakness of Facial muscle due to Paralysis of seventh cranial nerve. Facial Nerve is mixed cranial nerve, but mainly motor nerve; supply the Muscles of Facial Expression. If the nerve is paralyses all the action of the facial muscles are weakened.

CONCLUSION

The identification of disease and its pathogenesis are a prerequisite to best medical practice. A detailed history taking, clinical examination as per Siddha guidelines is necessary to arrive at a precise diagnosis.

The Uragan Vatham was carried out in this dissertation, giving importance to the changes in the physical constituents, seasonal and humeral changes.

In modern aspects the signs and symptoms of the Uragan Vatham may correlate with Bell's palsy.

The disease diagnosed only by the clinical examination. Nerve conduction study of Facial nerve helps to prognosis of this disease.

80% of people with Uragan Vatham begin to recover several weeks after these symptoms begin, and they recover completely within several months. Few patients never recover completely and some of their symptoms continue permanently.

Thokkanam is advised to patient for quick improvement.

During recovery, the biggest concern is protecting the exposed eye from dryness and injury.

**P.G. - NOI NAADAL DEPARTMENT,
GOVT. SIDDHA MEDICAL COLLEGE,
PALAYAMKOTTAI.**

**A Study To Diagnose URAGANVATHAM Through Siddha
Diagnostic Methodology
SELECTION PROFORMA**

1.O.P.No _____ 2. I.P. NO _____ 3. Bed No: _____ 4. S. No: _____ 5.Date: _____

6. Name: _____ 7. Age (Years): 8. Sex: M F

9. Occupation: _____ 10. Income: _____ /month

11. Address: -----

12. Complaints and duration:

13. History of present illness:

14. Past history:

15. Family History:

Habits		1.Yes	2.No	
16. Betelnut chewer :		<input type="checkbox"/>	<input type="checkbox"/>	_____
17. Tea :		<input type="checkbox"/>	<input type="checkbox"/>	_____
18. Coffee :		<input type="checkbox"/>	<input type="checkbox"/>	_____
19. Smoking :		<input type="checkbox"/>	<input type="checkbox"/>	_____
20. Alcohol :		<input type="checkbox"/>	<input type="checkbox"/>	_____
21. Food habits :	V <input type="checkbox"/> NV <input type="checkbox"/> M <input type="checkbox"/>			_____

GENERAL ETIOLOGY FOR URAGAN VADHAM

	1.Yes	2.No	
22. Herpes simplex virus infection	<input type="checkbox"/>	<input type="checkbox"/>	_____
23. Respiratory infection	<input type="checkbox"/>	<input type="checkbox"/>	_____
24. Acute and chronic otitis media	<input type="checkbox"/>	<input type="checkbox"/>	_____
25. Parotitis	<input type="checkbox"/>	<input type="checkbox"/>	_____
26. Venerian disease	<input type="checkbox"/>	<input type="checkbox"/>	_____
27. Diabetes mellitus	<input type="checkbox"/>	<input type="checkbox"/>	_____
28. High blood pressure	<input type="checkbox"/>	<input type="checkbox"/>	_____
29. Thyroid malformation	<input type="checkbox"/>	<input type="checkbox"/>	_____
30. High winds directly into the face	<input type="checkbox"/>	<input type="checkbox"/>	_____
31. Poor nutrition	<input type="checkbox"/>	<input type="checkbox"/>	_____
32. Dental treatment	<input type="checkbox"/>	<input type="checkbox"/>	_____
33. Trauma to the facial nerve	<input type="checkbox"/>	<input type="checkbox"/>	_____

GENERAL EXAMINATION

34. Weight(kg) :	<input type="text"/> <input type="text"/> <input type="text"/>
35. Temperature(°F) :	<input type="text"/> <input type="text"/> <input type="text"/>
36. Pulse rate/minute :	<input type="text"/> <input type="text"/> <input type="text"/>
37. Heart rate/minute :	<input type="text"/> <input type="text"/> <input type="text"/>
38. Respiratory rate/minute :	<input type="text"/> <input type="text"/> <input type="text"/>
39. Blood pressure(mmHg) :	<input type="text"/>

		1.Yes	2.No	
40. Pallor	:	<input type="checkbox"/>	<input type="checkbox"/>	_____
41. Jaundice	:	<input type="checkbox"/>	<input type="checkbox"/>	_____
42. Cyanosis	:	<input type="checkbox"/>	<input type="checkbox"/>	_____
43. Lymphadenopathy	:	<input type="checkbox"/>	<input type="checkbox"/>	_____
44. Pedal edema	:	<input type="checkbox"/>	<input type="checkbox"/>	_____
45. Clubbing	:	<input type="checkbox"/>	<input type="checkbox"/>	_____
46. Jugular venous pulsation	:	<input type="checkbox"/>	<input type="checkbox"/>	_____

VITAL ORGANS EXAMINATION

		1.Normal	2.Affected	
47. Heart		<input type="checkbox"/>	<input type="checkbox"/>	_____
48. Lungs		<input type="checkbox"/>	<input type="checkbox"/>	_____
49. Brain		<input type="checkbox"/>	<input type="checkbox"/>	_____
50. Liver		<input type="checkbox"/>	<input type="checkbox"/>	_____
51. Kidney		<input type="checkbox"/>	<input type="checkbox"/>	_____
52. Spleen		<input type="checkbox"/>	<input type="checkbox"/>	_____
53. Stomach		<input type="checkbox"/>	<input type="checkbox"/>	_____

SIDDHA SYSTEM OF EXAMINATION

ENNVAGAI THERVUKAL

NAA

54. Maa Padinthuruthal

1. Present 2. Absent

55. Niram

1. Karuppu 2. Manjal 3. Velluppu

56. Suvai

1. Pulippu 2. Kaippu 3. Inippu

57. Vedippu

1. Present

2. Absent

58. Vai neer ooral

1. Normal

2. Increased

3. Reduced

59. **NIRAM**

1. Karuppu

2. Manjal

3. Velluppu

60. **MOZHI**

1. Sama oli

2. Urattha oli

3. Thazhlntha oli

VIZHI

61. Niram

1. Karuppu

2. Manjal

3. Sivappu

4. Velluppu

62. Kanneer

1. Present

2. Absent

63. Erichchal

1. Present

2. Absent

64. Peelai seruthal

1. Present

2. Absent

MEI KURI

65. Veppam

1. Mitham

2. Migu

3. Thatpam

66. Viyarvai

1. Normal

2. Increased

3. Reduced

67. Thodu vali

1. Present

2. Absent

MALAM

68. Niram

1. Karuppu

2. Manjal

3. Sivappu

4. Velluppu

69. Sikkal

1. Present 2. Absent

70. Sirutthal

1. Present 2. Absent

71. Kalichchal

1. Present 2. Absent

72. Seetham

1. Present 2. Absent

73. Vemmai

1. Present 2. Absent

MOOTHIRAM

NEER KURI

74. Niram

1. Venmai 2. Manjal 3. Crystal clear

75. Manam

1. Present 2. Absent

76. Nurai

1. Nill 2. Increased 3. Reduced

77. Edai(Ganam)

1. Normal 2. Increased 3. Reduced

78. Enjal(Alavu)

1. Normal 2. Increased 3. Reduced

79.NEI KURI

1. Aravam 2. Mothiram

3. Muthu 4. Aravil Mothiram

5. Aravil Muthu 6 Mothirathil Aravam

7. Mothirathil Muthu 8. Muthil Aravam

9. Muthil Mothiram 10. Asaathiyam

11. Mellena paraval

NAADI(KAI KURI)

Naadi Nithanam

80.Kaalam

- | | | | |
|-------------------|--------------------------|---------------------|--------------------------|
| 1. Kaarkaalam | <input type="checkbox"/> | 2. Koothirkaalam | <input type="checkbox"/> |
| 3. Munpanikaalam | <input type="checkbox"/> | 4. Pinpanikaalam | <input type="checkbox"/> |
| 5. Ilavenirkaalam | <input type="checkbox"/> | 6. Muthuvenirkaalam | <input type="checkbox"/> |

81.Desam

- | | | | |
|----------|--------------------------|-----------|--------------------------|
| 1. Kulir | <input type="checkbox"/> | 2. Veppam | <input type="checkbox"/> |
|----------|--------------------------|-----------|--------------------------|

82.Vayathu

- | | | | | | |
|------------|--------------------------|------------|--------------------------|--------------|--------------------------|
| 1. 1-33yrs | <input type="checkbox"/> | 2.34-66yrs | <input type="checkbox"/> | 3. 67-100yrs | <input type="checkbox"/> |
|------------|--------------------------|------------|--------------------------|--------------|--------------------------|

83.Udal Vanmai

- | | | | | | |
|------------|--------------------------|-----------|--------------------------|-----------|--------------------------|
| 1. Iyyalbu | <input type="checkbox"/> | 2. Valivu | <input type="checkbox"/> | 3. Melivu | <input type="checkbox"/> |
|------------|--------------------------|-----------|--------------------------|-----------|--------------------------|

84.Vanmai

- | | | | |
|-----------|--------------------------|-----------|--------------------------|
| 1. Vanmai | <input type="checkbox"/> | 2. Menmai | <input type="checkbox"/> |
|-----------|--------------------------|-----------|--------------------------|

85.Panbu

- | | | | | | |
|----------------|--------------------------|--------------|--------------------------|---------------|--------------------------|
| 1. Thannadai | <input type="checkbox"/> | 2. Puranadai | <input type="checkbox"/> | 3. Illaitthal | <input type="checkbox"/> |
| 4. Kathithal | <input type="checkbox"/> | 5. Kuthithal | <input type="checkbox"/> | 6. Thullal | <input type="checkbox"/> |
| 7. Azhutthal | <input type="checkbox"/> | 8. Padutthal | <input type="checkbox"/> | 9. Kalatthal | <input type="checkbox"/> |
| 10. Munnookku | <input type="checkbox"/> | 11. Pinnokku | <input type="checkbox"/> | 12. Suzhalal | <input type="checkbox"/> |
| 13. Pakkanokku | <input type="checkbox"/> | | | | |

86.Naadi nadai

- | | | | | | |
|---------------|--------------------------|--------------|--------------------------|---------------|--------------------------|
| 1. Vali | <input type="checkbox"/> | 2. Azhal | <input type="checkbox"/> | 3. Iyam | <input type="checkbox"/> |
| 4. Vali Azhal | <input type="checkbox"/> | 5. Vali Iyam | <input type="checkbox"/> | 6. Azhal Vali | <input type="checkbox"/> |
| 7. Azhal Iyam | <input type="checkbox"/> | 8. Iya Vali | <input type="checkbox"/> | 9. Iya Azhal | <input type="checkbox"/> |

87.MANIKADAI NOOL (Viral Kadai Alavu)

IYMPORIGAL / IYMPULANGAL

	1.Normal	2.Affected	
88.Mei	<input type="checkbox"/>	<input type="checkbox"/>	_____
89.Vaai	<input type="checkbox"/>	<input type="checkbox"/>	_____
90.Kan	<input type="checkbox"/>	<input type="checkbox"/>	_____
91.Mookku	<input type="checkbox"/>	<input type="checkbox"/>	_____
92.Sevi	<input type="checkbox"/>	<input type="checkbox"/>	_____

KANMENTHIRIYANGAL / KANMAVIDAYANGAL

	1.Normal	2.Affected	
93.Kai	<input type="checkbox"/>	<input type="checkbox"/>	_____
94.Kaal	<input type="checkbox"/>	<input type="checkbox"/>	_____
95.Vaai	<input type="checkbox"/>	<input type="checkbox"/>	_____
96.Eruvai	<input type="checkbox"/>	<input type="checkbox"/>	_____
97.Karuvaai	<input type="checkbox"/>	<input type="checkbox"/>	_____

98. YAAKAI

1. Vali	<input type="checkbox"/>	2. Azhal	<input type="checkbox"/>	3. Iyam	<input type="checkbox"/>
4. Vali Azhal	<input type="checkbox"/>	5. Vali Iyam	<input type="checkbox"/>	6. Azhal Vali	<input type="checkbox"/>
7. Azhal Iyam	<input type="checkbox"/>	8. Iya Vali	<input type="checkbox"/>	9. Iya Azhal	<input type="checkbox"/>

99. GUNAM

1. Sathuva Gunam	<input type="checkbox"/>	2. Raso Gunam	<input type="checkbox"/>	3. Thamo Gunam	<input type="checkbox"/>
------------------	--------------------------	---------------	--------------------------	----------------	--------------------------

UYIR THATHUKKAL**I. VALI**

	1. Normal	2. Affected	
100.Uyirkkaal (Praanan)	<input type="checkbox"/>	<input type="checkbox"/>	_____
101.Keelnokkukkaal (Abaanan)	<input type="checkbox"/>	<input type="checkbox"/>	_____
102.Melnokkukkaal (Udhaanan)	<input type="checkbox"/>	<input type="checkbox"/>	_____
103.Paravukaal (Viyaanan)	<input type="checkbox"/>	<input type="checkbox"/>	_____
104.Nadukkaal (Samaanan)	<input type="checkbox"/>	<input type="checkbox"/>	_____

105.Vanthikkaal (Naagan)	<input type="checkbox"/>	<input type="checkbox"/>	_____
106.Vizhikkaal (Koorman)	<input type="checkbox"/>	<input type="checkbox"/>	_____
107.Thummikkaal (Kirukaran)	<input type="checkbox"/>	<input type="checkbox"/>	_____
108.Kottavikkaal (Devathathan)	<input type="checkbox"/>	<input type="checkbox"/>	_____
109.Veengukkal(Dhananjeyan)	<input type="checkbox"/>	<input type="checkbox"/>	_____

II. AZHAL

	1. Normal	2. Affected	
110.Aakkanal (Anala pitham)	<input type="checkbox"/>	<input type="checkbox"/>	_____
111. Ollolithhee (Prasaka pitham)	<input type="checkbox"/>	<input type="checkbox"/>	_____
112. Vannayeri (Ranjaka pitham)	<input type="checkbox"/>	<input type="checkbox"/>	_____
113. Nokkazhal (Aalosaka pitham)	<input type="checkbox"/>	<input type="checkbox"/>	_____
114. Aatralangi (Saathaka pitham)	<input type="checkbox"/>	<input type="checkbox"/>	_____

III. KABAM

	1. Normal	2. Affected	
115.Ali Iyam (Avalambagam)	<input type="checkbox"/>	<input type="checkbox"/>	_____
116.Neerppi Iyam (Kilethagam)	<input type="checkbox"/>	<input type="checkbox"/>	_____
117.Suvaikaan Iyam (Pothagam)	<input type="checkbox"/>	<input type="checkbox"/>	_____
118.Niraiyu Iyam (Tharpagam)	<input type="checkbox"/>	<input type="checkbox"/>	_____
119.Ontr Iyam (Santhigam)	<input type="checkbox"/>	<input type="checkbox"/>	_____

UDAL THATHUKKAL

	1. Normal	2. Affected	
120.Saaram	<input type="checkbox"/>	<input type="checkbox"/>	_____
121.Senneer	<input type="checkbox"/>	<input type="checkbox"/>	_____
122.Oon	<input type="checkbox"/>	<input type="checkbox"/>	_____
123.Kozhuppu	<input type="checkbox"/>	<input type="checkbox"/>	_____
124.Enbu	<input type="checkbox"/>	<input type="checkbox"/>	_____
125.Moolai	<input type="checkbox"/>	<input type="checkbox"/>	_____
126.Suronitham/Sukkilam	<input type="checkbox"/>	<input type="checkbox"/>	_____

MUKKUTRA MIGU GUNAM

I. Vali Migu Gunam

1. Present

2. Absent

- | | | |
|----------------------------------|--------------------------|--------------------------|
| 127.Emaciation | <input type="checkbox"/> | <input type="checkbox"/> |
| 128.Blackish colouration of body | <input type="checkbox"/> | <input type="checkbox"/> |
| 129.Desire to take hot food | <input type="checkbox"/> | <input type="checkbox"/> |
| 130.Tremors | <input type="checkbox"/> | <input type="checkbox"/> |
| 131.Abdominal distension | <input type="checkbox"/> | <input type="checkbox"/> |
| 132.Insomnia | <input type="checkbox"/> | <input type="checkbox"/> |
| 133.Constipation | <input type="checkbox"/> | <input type="checkbox"/> |
| 134.Weakness | <input type="checkbox"/> | <input type="checkbox"/> |
| 135.Weakness of sense organs | <input type="checkbox"/> | <input type="checkbox"/> |
| 136.Giddiness | <input type="checkbox"/> | <input type="checkbox"/> |
| 137.Sluggishness | <input type="checkbox"/> | <input type="checkbox"/> |

II. Azhal Migu Gunam

1. Present

2. Absent

- | | | |
|--|--------------------------|--------------------------|
| 138.Yellowish discolouration of the skin | <input type="checkbox"/> | <input type="checkbox"/> |
| 139.Yellowish discolouration of the eye | <input type="checkbox"/> | <input type="checkbox"/> |
| 140.Yellowish discolouration of urine | <input type="checkbox"/> | <input type="checkbox"/> |
| 141.Yellowish discolouration of faeces | <input type="checkbox"/> | <input type="checkbox"/> |
| 142.Increased appetite | <input type="checkbox"/> | <input type="checkbox"/> |
| 143.Burning sensation in the body | <input type="checkbox"/> | <input type="checkbox"/> |
| 144.Insomnia | <input type="checkbox"/> | <input type="checkbox"/> |

III. Iyam Migu Gunam

1. Present

2. Absent

- | | | |
|---------------------------|--------------------------|--------------------------|
| 145.Excessive salivation | <input type="checkbox"/> | <input type="checkbox"/> |
| 146.Reduced appetite | <input type="checkbox"/> | <input type="checkbox"/> |
| 147.Heaviness of the body | <input type="checkbox"/> | <input type="checkbox"/> |

148. Whiteness of the body
149. Chillness of the body
150. Cough
151. Increased sleep
152. Eraippu (Dyspnoea)
153. Sluggishness

154. NOI UTRA KAALAM

1. Kaarkaalam 2. Koothirkaalam
3. Munpanikaalam 4. Pinpanikaalam
5. Ilavenirkaalam 6. Muthuvenirkaalam

155. NOI UTRA NILAM

1. Kurinji 2. Mullai 3. Marutham
4. Neithal 5. Palai

156. Date of Birth

157. Time of Birth

158. Place of Birth

159. NATCHATHIRAM

1. Aswini 2. Barani 3. Karthikai
4. Rohini 5. Mirugaseeridam 6. Thiruvathirai
7. Punarpoosam 8. Poosam 9. Aayilyam
10. Makam 11. Pooram 12. Utthiram
13. Astham 14. Chithirai 15. Swathi
16. Visakam 17. Anusam 18. Kettai
19. Moolam 20. Pooradam 21. Utthiradam
22. Thiruvonam 23. Avittam 24. Sadayam
25. Poorattathi 26. Utthirattathi 27. Revathi
00. Not known

160. RAASI

- | | | | | | |
|--------------|--------------------------|--------------|--------------------------|------------|--------------------------|
| 1.Mesham | <input type="checkbox"/> | 2.Rishabam | <input type="checkbox"/> | 3.Midhunam | <input type="checkbox"/> |
| 4.Kadakam | <input type="checkbox"/> | 5.Simmam | <input type="checkbox"/> | 6.Kanni | <input type="checkbox"/> |
| 7.Thulam | <input type="checkbox"/> | 8.Viruchigam | <input type="checkbox"/> | 9.Dhanusu | <input type="checkbox"/> |
| 10.Magaram | <input type="checkbox"/> | 11.Kumbam | <input type="checkbox"/> | 12.Meenam | <input type="checkbox"/> |
| 00.Not known | <input type="checkbox"/> | | | | |

Examination:

1. Normal

2. Affected

- | | | | |
|---|--------------------------|--------------------------|-------|
| 161. Frowning of eye brows | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| 162. Whistling | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| 163. Close the eyes tightly | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| 164. Blow out the cheek | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| 165. Hearing test | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| 166. Corneal reflex | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| 167. Corneal conjunctiva reflex | <input type="checkbox"/> | <input type="checkbox"/> | _____ |
| 168. Taste sensation of anterior
2/3 of tongue | <input type="checkbox"/> | <input type="checkbox"/> | _____ |

INVESTIGATION

BLOOD

- | | | |
|-----------------------------|---|---|
| 169. TC (Cells/cu.mm) | : | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> |
| 170. DC (%) | : | 1.P <input type="text"/> <input type="text"/> 2.L <input type="text"/> <input type="text"/> 3.E <input type="text"/> <input type="text"/>
4.B <input type="text"/> <input type="text"/> 5.M <input type="text"/> |
| 171. Hb (gms%) | : | <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/> |
| 172. E.S.R. (mm/hr) | : | 1.1/2hr <input type="text"/> <input type="text"/> 2.1hr <input type="text"/> <input type="text"/> |
| 173. Blood Sugar (R) (mgs%) | : | <input type="text"/> <input type="text"/> <input type="text"/> |

URINE

174.	Albumin	: 0.Nil <input type="checkbox"/>	1.Trace <input type="checkbox"/>	2.+ <input type="checkbox"/>
		3.++ <input type="checkbox"/>	4.+++ <input type="checkbox"/>	
175.	Sugar	: 0.Nil <input type="checkbox"/>	1.Trace <input type="checkbox"/>	2.+ <input type="checkbox"/>
		3.++ <input type="checkbox"/>	4.+++ <input type="checkbox"/>	

Deposits

1. Yes

2. No

176.	Pus cells	<input type="checkbox"/>	<input type="checkbox"/>	_____
177.	Epithelial cells	<input type="checkbox"/>	<input type="checkbox"/>	_____
178.	RBCs	<input type="checkbox"/>	<input type="checkbox"/>	_____
179.	Crystal and cast	<input type="checkbox"/>	<input type="checkbox"/>	_____
180.	Urine culture	<input type="checkbox"/>	<input type="checkbox"/>	_____

MOTION TEST

1. Yes

2. No

181.	Ova	<input type="checkbox"/>	<input type="checkbox"/>	_____
182.	Cyst	<input type="checkbox"/>	<input type="checkbox"/>	_____
183.	Occult blood	<input type="checkbox"/>	<input type="checkbox"/>	_____

184. X – ray -skull

(If necessary)

.....

185. Nerve conduction study

.....

.....

CLINICAL FEATURE OF URAGAN VATHAM:

	1. Yes	2. NO	
186. Pulling of face	<input type="checkbox"/>	<input type="checkbox"/>	_____
187. Deviation of mouth	<input type="checkbox"/>	<input type="checkbox"/>	_____
188. Numbness	<input type="checkbox"/>	<input type="checkbox"/>	_____
189. Heaviness over the face	<input type="checkbox"/>	<input type="checkbox"/>	_____
190. Disuse atrophy	<input type="checkbox"/>	<input type="checkbox"/>	_____
191. Shyness	<input type="checkbox"/>	<input type="checkbox"/>	_____
192. Inability to close the eye	<input type="checkbox"/>	<input type="checkbox"/>	_____
193. Excessive sweating	<input type="checkbox"/>	<input type="checkbox"/>	_____
194. Excessive salivation	<input type="checkbox"/>	<input type="checkbox"/>	_____
195. Involuntary facial movement	<input type="checkbox"/>	<input type="checkbox"/>	_____

BIBLIOGRAPHY

- ❖ Yugi Vaithiya Chinthamani – 800
- ❖ Noi Naadal Part I and II
- ❖ Siddha Maruthuvaagan Surukkam
- ❖ Agathiar Guru Naadi
- ❖ Therayar Vagadam
- ❖ Pararasa Sekaram
- ❖ Agathiyar Gunavagadam
- ❖ Thanvanthiri Kaappiyam
- ❖ Maanmurugium
- ❖ Kannusamiyam
- ❖ Thirukural
- ❖ Sathaga Naadi.
- ❖ T.V.Sambasivam Pillai – Tamil- English Dictionary
- ❖ Mathurai Pothu Tamil Agarathi
- ❖ Human Anatomy – Gray
- ❖ Human Anatomy- B.D.Chaurasia
- ❖ Human physiology – Prema Sembuliyam.
- ❖ Bickerstaff's Neurological examination in clinical practice
- ❖ Hutchison's Clinical Methods
- ❖ Brains Neurology- Brains
- ❖ Manual of Practical Medicine -Alagappa
- ❖ Harrison Medicine