A STUDY ON

DIAGNOSTIC METHODOLOGY IN

VATHA PANDU

IN THE CONTEXT OF ENVAGAI

THERVUGAL

Dissertation submitted to

THE TAMILNADU Dr. M.G.R MEDICAL UNIVERSITY

Chennai-32

For the partial fulfillment of the requirements to the Degree of

DOCTOR OF MEDICINE (SIDDHA)

(BRANCH V – NOI NAADAL)

DEPARTMENT OF NOI NAADAL

GOVERNMENT SIDDHA MEDICAL COLLEGE

PALAYAMKOTTAI – 627 002.

APRIL - 2013

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

69, Anna Salai, Guindy, Chennai-600 032

This Certificate is awarded to Dr. S. KANIMOZHI

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

"Research Methodology & Biostatistics"

for AYUSH Post-Graduates & Researchers

organized by the Department of Siddha,

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

from 8th August 2011 to 12th August 2011.

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CONDUCTED BY

POST GRADUATE DEPARTMENT OF NOI NAADAL
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PALAYAMKOTTAI

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ACKNOWLEDGEMENT

First of all I owe my gratitude to all the **Siddhars** for all their manifold mercies.

I owe my gratitude to **Prof.Dr.Chandra Mohan Das M.D.(s)**, Principal, Government Siddha Medical College, Palayamkottai, for giving me the opportunity to complete my dissertation project by providing all the necessary facilities.

I also wish to convey my deep gratitude to **Prof.Dr.S.Soundarrajan M.D.(S)**, Vice Principal, Government Siddha Medical College, Palayamkottai, for patronizing the work by providing all the necessary facilities.

I would like to express my profound sense of gratitude **Prof.Dr.A.Subramanian.M.D.(S)**, Head of the department, PG Noi Naadal, Government Siddha Medical College, Palayamkottai for his valuable guidance and suggestions in carrying out this dissertation work.

I am extremely grateful to **Dr. A.Vasuki Devi M.D. (S)**, lecturer Department of PG Noi Naadal, Government Siddha Medical College, Palayamkottai for her valuable guidance and encouragement to my work.

I am extremely grateful to **Dr.S.K.Sasi, M.D. (S)**, lecturer, Department of PG Noi Naadal,Government Siddha Medical College, Palayamkottai for her valuable guidance and constant support for my work.

I express my special thanks to **Prof. Dr. V. Neelakandan, M.D.,** HOD of Modern Medicine, Government Siddha Medical College, Palayamkottai, for his valuable guidance to this work.

My thanks and appreciations also go to my dear son S.Karthipan and friends **Dr.P.Chandra MD(s),** for their timely help, and support they provided.

And my great thanks to **Broad-Band Net Cafe** for their sincere and kind cooperation to complete this work successfully.

INTRODUCTION

Siddha Medicine is a Nobile system of medicine which abolished any diseased condition that prevents the "Jeevam" from attaining "Sivanilai" Those who have attained "Siddhi" are known as "Siddhars". Siddha medicine is a boon to human gifted by siddhars.

In Siddha system of medicine, a close relation is maintained between man and prabanjam (the Universe). Whatever the changes occur in the prabncha, influences the human body also.

Our Unique system of Tamil Medicine is based upon two main theories viz, the , panchaboothic theory and the Tridosha theory (Three humeral theory). In panchabootha theory the five elements-prithuvi (Earth), Appu (Water), Theyu (fire), Vaayu (wind), Aakayam (Ether) are the fundamental units of all.

According to the Tridosha theory or the Three humeral theory the biological functions of the body depends upon Vatham, Pitham and Kapham, Yet there is a relation between the Tridoshas and the panchaboothas.

Vaatham = Vaayu + Aakayam

Pitham = Theyu

Kapham = Prithvi + Appu

Any alteration among the tridoshas results in disease. This deviation from the normal is treated on the basis of 'Arusuvai' (Taste)

which are inturn formed by the panchaboothas. Eventhough treatment is based upon 'Arusuvai' the diagnosis is based upon 'Ennvagai thervu' which includes Naa, Niram, Mozhi, Vizhi, Malam, Moothiram, Naadi and Sparism.

The siddha practices deal, not merely with the body of man but also with the inner soul. The art of medicine is based on truth and as such it is a divine are not to be adulterated siddha system was successfully practiced by siddhars who were associated with religion and philosophy. This siddhars who were the spiritual scientists. They were men, who possessed high intellectual, cultural and spiritual faculties. They have altained the eight supernatural powers. They were the greatest men holding tremendous powers in themselves by way of yoga practice and rejuvenation.

Diseases are obstacles for enjoying the fruits of life. To prevent, to protect from the disease and also to care the disease, the ancient siddhars have developed the siddha systems of medicine which based on panchabootha and mukkutra theories.

THE RELATION OF FIVE ELEMENTS IN NATURE

CORRESPONDS TO HUMAN BODY :

Traditional systems of medicine all over the world believed that the five elements are the basis for the world and the human being as well. "Tholkappiyam", the earliest. The Tamil grammar says that the universe

is a composition of five elements viz, Earth, Water, Air, Fire and Ether. The siddha system terms the above five elements as pancha pootham and it considers that the body of every living organism is a composition of panchapoothams. So the physical and chemical properties of every cell in the human body is structurally and chemically formed and determent by the definite proportions of the five elements.

"Tholkappiyam" says,

"நீர் நிலம் தீ, வளி விசும்போடைந்தும்
கலந்த மயக்க உலகமாதலின்"

- **தொல்காப்பியம் - 1589.**

"Sathaga Naadi nool" says,

"பாரப்பா பூதமைந்து மண் நீர் தேயு
பரிவாயு ஆகாய மைந்தினாலே
சேரப்பா சடமாச்சி" . . . சதக நாடி

"Thirumanthiram" also has a verse, stressing the fact that these five elements form the basis of the world.

"மண்ணினில் ஞன்று மலர் நீரு மங்காகும்
பொன்னினில் அங்கி புகழ்வளி யாகாயம்".

- திருமந்திரம் 2112.

These five elements are in substle state (sukuma nilai) they manifest into a gross state (Sthula nilai) and become visible. So all matters of universe is made up of these five elements the matters get the

property of which every element is predominant in it. A change in the proportion of the panchapootham will result in various type of diseases.

The world around us is the macrocosm (அண்டம்) and the human being is considered as the microcosm (பிண்டம்) because what exists in the world exists in man. The five elements are the basis of the formation of macrocosm and microcosm.

The biological function of the body is governed b;;y these three distinct factors.

It is said as,

"பூணப்பா வாத பித்த சேத்துமத்தாற்
பூண்டெடுத்த தேகவளம் புகலுவேனே".

When these factors are disturbed, it eventually leads to disease status. It will be of interest to note that factors like heredity, climatic variations, contact with persons with contagious disease, unhygienic habits, suppression of urges etc. were referred to as playing a role in the causation of diseases.

"Thiruvalluvar" also said that excessive or deficient of these three factors will cause diseases.

"மிகினும் குறையினும் நோய்செய்யும் நூலோர்
வளிமுதலாய் எண்ணிய மூன்று".

- **திருக்குறள்**

Broadly speaking, nervous actions which constitute stimulations, respiration, thinking, sensory function, co-ordination of the seven physical constituents and reflex action are the function of **Vatham.** Body temperature, digestion of food, during of the blood and skin, vision, sweat etc. are the function of **Pitham. Kapaha** gives strength, builds the body, gives strength for joints, and luster to skin, moistens the food and hence aids for digestion, cools the eye etc.

These functions are normally carried out in every cell of the body by thiridhosa and health is maintained. Where their equilibrium is altered, the body becomes diseased.

LIFE SPAN :

As per siddhars view the life span fixed to the human being is hundred years. This hundred years are divided into three phases. The first phase in human life is attributed to Kabha, the middle pitha and the last phase to vatha.

"Sathaganadi" states that,

"தானுவனுமமைந்தபடி வயது நூறு
சகலருக்கு மிளமையிலே சிலேத்துமமாகும்
ஆனநடு வயது பித்தமப்பால் வாதம்
ஆறஞ்சு மூவாண்டு மாதம் நான்கு
ஈனமற மூவருமே முன்று பங்காய்
இப்படியே நடந்து கொள்வாரிறையோன் முன்னால்
ஏனமுறயமைத்த வண்ணம் ஆண்டுமாதம்
இயைவான நாள்கள் தப்பி மரிப்பதாமே".

The importance of diagnosis is stated in **'Sigicha Rathina Theepam'** as,

"மதித்திடற் கருமை வாய்ந்த
மாண்பரி காரமெல்லாந்
துதித்திட வுணர்ந்தானேனுந்
துகளறப் பிணியின்றன்மை
பதித்திடவுண ரானாகிற்
பயனுறானா காலானே
விதித்திடு பிணித் திறத்தை
விளம்புது முதற்கண் மன்னோ".

A proper diagnosis forms the basis for proper treatment, where as ignorance of disease (or) diagnosis leads to inefficient treatment. There can be no treatment, with out adequate knowledge of the disease and proper diagonosis. The success of the physician is doubtful who though possessing a good knowledge of drugs (or) treatment administers them without diagnosing the disease earlier.

In India, because of poverty, illiteracy, socio-economic patterns, malnutrition, untreated illness, hook-worm infestation are the common cause of affliction of the disease **"Pandu noi"**, among the vast species of population.

A large number of patients especially women and children are seen with pale look and shining appearance, which are some land marks of under nourishment. Siddha system defines this condition as **'Pandu noi'** (OR) **'Veluppu noi'.**

Iron deficiency is a common problem in women, children and elderly people.

In women, it is mainly due to menstrual problem and malnutrition.

In elders, it is mainly due t malnutrition.

So, in India, the malnutrition and blood loss are the most common cause for iron deficiency Anaemia.

AIM AND OBJECTIVES

1. AIM

To diagnose the disease VATHA PANDU through Ennavagai thervugal (the eight fold eramination)

2. OBJECTIVE

Primary

To document inference of the Ennavagai theruval in the disease **VATHA PANDU.**

Secondary

- To review and collect the Literature evidence about **vatha Pandu**
- To Evaluvate the Etiology of **Vatha Pandu**
- To study in detail about etiopathogensis of vatha pandu.
- To study the significance of manikkadai nool in the vatha pandu. To do concerned Laboratory investigation

ELUCIDATION ABOUT VAATHA PANDU

"கொள்ளவே வாதபாண்டு ரோகங் கேளாய்

குடல்பிரட்டி யடிவயிறு தான்வ லிக்கும்

தள்ளவெ தாகமோடு பசியு மில்லை

தழலான சரசரப் பாகத் தானும்

நள்ளவே நரம்பெல்லாங் கறுப்பு மாகும்

நடுக்கலோடு கண்சிவப்பு மலபந் தந்தான்

விள்ளவே தலைவலிக்கு மேனி வீங்கும்

வெளுப்பாகும் வாதத்தின் பாண்டு பாமே"

- **யூகி வைத்திய சிந்தாமணி**
- **பாடல் எண் 522. பக்கம் . 168**

பொருள்:

கொள்ளவே - *உட்கொள்ளல்

வாதபாண்டு - ***தாகம், பசி, நீர், மலம் நிறங்கெட்டு கருகிவயிறுபொருமி,**புறங்கால் வீங்கி, கைகால் ஓய்ந்து காணும் ஓர் விதப்பாண்டு

ரோகங் - *நோய்

குடல்பிரட்டி - ***வயிற்றை புரட்டல்** (Griping sensation of the bowel)

**வாந்தி செய்யும்படி வயிற்றை புரட்டுதல், குடலை குழப்புதல்

அடிவயிறு - ***வயிற்றின் கீழ்பாகம்** (Low abdominal)

தள்ளவே - ***விலக்குதல்** வெளித்தள்ளல் (Excluding)

**தள்ளுதல், நீக்கல்.

தாகமோடு	-	****நீர்வேட்கை, **தாகங்கொள்ளல்** (Craving for water) தாகங்கொள்ளுதல்
பசியுமில்லை	-	***பசியீனம்** (Loss of appetite)
தழலான	-	***நெருப்பு,** வெப்பம் (fire, heat) ****தீ,** வெப்பம், சுடர்
சரசரப்	-	*சரசரத்தல், **முறமுறப்பாகயிருத்தல்** (Being rough) **சரசரத்தல், முறமுறுப்பு, சுரசுர
நரம்பெல்லங்		
கறுப்புமாகும்	-	***நாடி,** (Artery) Vein,> தசைநார் (Musucel fivre) Carying black blood **நாடி, நாணி, நார்.
நடுக்கலொடு	-	*நடுக்கம் காணல் (Shivering from cold) **நடுங்குதல், **கிறுகிறுத்தல்**
கண்சிவப்பு	-	*Red eye, கண்ணழற்சி (Inflamation eyes) ****கண் செந்நிறமடைதல்,** கண் கனலுதல்
மலபந்தந்தான்	-	*மலக்கட்டு Binding of bowels ****மலக்கட்டு,** மும்மலத்தாற்கட்டுண்கை
விள்ளவே	-	***பிளத்தல்,** உடைதல் **சொல்லுதல், வெளிப்படுத்துதல், தெளிவாதல்
தலைவலி	-	*தலைவலி (திரிதோஷ கோளறினால் ஏற்படும்)
மேனி	-	*உடம்பு (body) ****அங்கம்,** உடல் அழகு

வீங்கும் - *பருத்தல் become enlarged பூரித்தல்

**பருத்தல் , பூரித்தல், மெலிதல், மிகுதல்

வெளுப்பாகும் - ***உடல் வெளுத்தல்** (Pallor) வெண்மை

**வெளுத்தல், வெண்மை

*Tamil – English Dictionary TV.Sambasivam Pillai

****மதுரை தமிழ் பேரகராதி**

Clinical Symptoms

- Flatulence
- Low abdominal pian
- Loss of thirst
- Loss of appetite
- Burning sensatin of skin
- Hyperpigmentation vessels
- Shivering
- Redness eye
- Costipation
- Headache
- Pallor
- Swelling of body

REVIEW OF LITERATURE

VATHA PANDU

1. SYNONYMS OF PANDU NOI : VELUPPUNOI, VENMAI NOI, VENPANDAM :

As per the Siddha tradition the term Pandu is derived from the character of "Pandu" the father of "Pancha Pandavar" in "MAHABARATHAM". It is said that this man, when born was very pale and looks whitish discolouration and hence this condition was named after him as PANDU.

II. EAYAL (DEFINITION) :

Pandu noi is a term, that represents the disease of Raktha thathu, characterized by the change of colour of skin, nails conjunctiva and tongue.

The Saint "**Yugi vaithiya sinthamani"** define Pandu in his verses as

"கொள்ளவே வாதபாண்டு ரோகங் கேளாய்
குடல்பிரட்டி யடிவயிற தான்வ லிக்கும்
தள்ளவே தாகமோடு பசியு மில்லை
தழலான சரசரப் பாகத் தானும்
நள்ளவே நரம்பெல்லாங் கறுப்பு மாகும்
நடுக்கலோடு கண்சிவப்பு மலபந் தந்தான்
விள்ளவே தலைவலிக்கு மேனி வீங்கம்
வெளுப்பாகும் வாதத்தின் பாண்டு வாமே"

- யூகி வைத்திய சிந்தாமணி பாடல் எண்: 522பக்கம்: 168

- Flatulence
- Low Abdominal pain
- Loss of thirst & appetite
- Burning sensation of skin
- Hyeprpigmentation vessels
- Shivering
- Redness eye
- Constipation
- Headache
- Pallor
- Swelling of body

According to Noi Naadal – Part II

தீக்குற்றம் மிகுந்து குருதியின் நிறத்தையும் எடையையும் கெடுத்து உடலுக்கு வேண்டிய ஊட்டத்தையும் கொடாமல் உடலை வெளுக்கச் செய்யும் நோய்.

According to Sarabendrar Vaidhya Karpirni – Baalaroga Schihitchai

வயிற்றிலே ஒரே கனமான வீக்கம், கண்கள், நகம், முதலியன வெளுத்தல், கண்களில் வீக்கம், பசியின்மை முதலியன காணப்படும்.

In addition to pallor, swelling of the abdomen is seen

"தேகத்தில் இரத்தம் வற்றித்
தீங்கான விந்த நோய் காணுமப்பா"

- அகஸ்தியர் குணவாகடம்

தேகத்தின் இரத்தத்திலுள்ள சிவந்த அணுக்கள் குறைந்து தேகம் வெளுத்து விடு வதற்கு பாண்டு நோய் என்று பெயர் பாண்டு என்பது வெண்மை

- அகஸ்தியர் வைத்தியப் பிள்ளைத் தமிழ்

"The Amirtha Sangaragam" explains that,

"வெளுத்திடு விதனங் காட்டு மெய் கண் தசை தான்வெளுக்கும்
மிகச் சல மலத்தைக் காட்டு மேனி வெளுக்குந் தானே"

- அமிர்த சாரகம்

The Saint **"Agasthiar"** define pandu in his verses as

"கழிவாகுந்த தேகமப்பா காணத்தச வத்தாய்
வற்றிவிடு மன்னவாசல் கேட்கில்
பழிகாரர் முகத்தினில் முழியார்போலேபாண்டமெல்லாம்
வெளுக்கடித்தது ரத்தம்"

- அகத்தியர் தைத்திய காவியம்.

III. NOI VARUM VAZHI (AETIOLOGY) :

In this disease due to intrinsic and extrinsic cause Uyirthathu (Vatham, Pitham, Kapham) and Udal thathu (Saram, Seneer, Oonn, Kozhuppu, Enpu, Moolai and Sukkilam) get deranged.

Especially, in Uyir thathu, initially Pitham gets altered and then other two thathus are changed.

In Udal thathu, the derangements Occurs in order. Initially Saram, then Seneer and so on.

1) According to **'Yugimuni',** the causes of Pandu are as follows :

"அறிந்துமே உற்பத்தி சொல்லக் கேளாய்
அதிசார மலமிளகி யென்றே ரந்தான்
பிறிந்துமே புளியுப்பு பெருத்தலாலும்
பெத்தமா மக்கினியி விருத்தலாலும்
மீறியே மதுக்களைத் தான் புசித்தாலும்
பறிந்துமே பகல் நித்திரையே செய்தலாலும்
பாண்டு வந்து பாரிலுள்ளோர் படும் பாடாமே".

According to Thanvantri vaidhyam,

திருந்திடும் பாண்டு ரோகஞ் சேர்ந்திடுங் குணத்தைக் கேளாய்
இருந்திடும் வாத பித்தச் சிலேற்பன மிவைதான் மாறும்
பரிந்துதா னொன்றோடொன்று பொருந்துவாதலு மண்ணோடருந்து

ஆகிய மூலந்தன்னி லணைந்தவுட் டணத்தினாலுந்
தோகையர் மேகத்தாலும் துயர்மிகு சோகத்தாலுந்
தேகபோஷ ணையுள்ளார்க்குத் தரித்திரஞ் சேர்தலாலும்
வேமாந் திரிதோஷங்கள் மிளிசியே பாண்டு வாமே.

- தன்வந்திரி வைத்தியம்

Imbalance between the three humuors like the vaatha, Pitha and Kapha, eating mud (PICA), excessive heat accumulation in the abana, sorrow, are some of the causes of Paandu.

கொள்ளடா அபக்குவ போசனத் தாலும்
குடி கெடுத்த பெரும்பாடு கிராணியாலும்
கள்ளடா கருப்பத்தின் கிரந்தியாலும்
கனமான ரத்தத்தின் போக்கினாலும்

அள்ளடா அதியாம கவனத் தாலும்

அளவற்றிவி சாரந்தானடையும் போதும்

தெள்ளவே தேகத்தில் ரத்தம் கெட்டு

தெளிவான பாண்டது முண்டாம் பாரே.

- அகத்தியர் குணவாகடம்.

Agasthiar Gunavaagadam tells about the dietic factors such as injudicious diet, wrong food habits, mennorrhagia in females, chronic diarrhea, blood loss due to various aetiology, stress and strain are causes of Panndu.

‘‘வயல் தனிலே பூநாக மண்னைத் தானே

வருந்தியது புத்தபோல வத்தையாகும்

பயல்மொழி யீர்தேகத்தல் கிருமிதானே”

- குரு நாடி

Guru Naadi tells that heavy infestation by worms leads to chronic blood loss from the intestine and causes Paandu.

"குயல்வாய் குஷ்டம் சயங்குன்ம நீரிழிவு சுரங்கிராணி

நீரடைப்பு பாண்டு மூல வாய்வு

கயல்வாயு வருங்கண்ணில் குந்தாய் கடினந் தச வாய்வு

காணவாக முன் செய்த உயிர்களும் வினை தானே”

- அகஸ்தியர் வைத்தியர்

According to **Agasthiar Vaidhyam,** Paandu Noi occurs due to Kanman.

According to Therayar vaagadam

"கருதிய மீனின் முள்ளும், கலந்துமி நெய்யில் வாலும்
மருவிய எலும்பங் கல்லும் மங்கையர் மருந்திண்டும்
பருகிய பழஞ்சோற்றாலும் பழமல நிறைகையாலும் மருவிய
மயிர்களாலும் வந்திடும் நோயிதாமே"

According to theraiyan Vaagadam tells fish, ghee, husk, bone pieces, stone, toxins, constipation are caused by Paandu Noi.

சரபேந்திரர் வைத்ய முறைகள்: (பாண்டு ரோக சிகிச்சை)

பரதந்திர காரணங்களினால் பாண்டு உண்டாகும்விதம்:

1. ஆகாரத்தில் ப்ரீதியின்மையினால் ஆகாரம் சரீரத்திற்கு தேவையுள்ளபடி சாப்பிடமுடிவதில்லை. ஆகவே ரஸ தாது குறைவதுடன் இரத்தம், மாம்ஸம் முதல் சுக்கில தாது வரை சரீர தாதுக்கள் பலவீனப்பட்டு, பாண்டு ரோகத்தையுண்டாக்கிறது.
2. ஜீரணக்கோளாறு, இலகு ஆகாரத்தை அதிகமாக சாப்பிட்டாலோ அல்லது ஸ்வபாவமான குரு குணமுள்ள ஆகாரத்தை (கோதுமை, தவிடு) சாப்பிட்டாலோ அவை சரியானபடி சீரணிக்கப்படாமல் "ஆமரஸம்" உண்டாகி ரத்தம் முதலான தாதுக்களின் வளர்ச்சி தடைப்பட்டு பாண்டு ரோதத்திற்கு காரணமாகின்றது.
3. கடுமையான வியாதியிலிருந்து விடுப்பட்மட ரோகி, தன் அக்னி பலத்தை அறியாமல் ஆகாரத்தை உட்கொண்டாலோ அல்லது

மனகிலேசத்துடன் இருக்கையில் உட்கொண்டாலோ ஆகாரம் சீரணமாகாமல் ரத்தம் சரியாக விருத்தி ஆவதில்லை.

4. ரத்தம் குறைவுபடுதல் சஸ்திர ப்ரயோகத்தின் போது இரத்தம் அதிகமாக வடிதல், அடிபட்டு அதன்மூலம் இரத்தம் வெளியாதல், இரத்த பித்தம், ரத்த அதிசாரம், ரத்த குன்மம், ரத்தபிரதரம் போன்ற ரோகங்களினால் இரத்தம் அதிகமாக வெளியாகி நஷ்டமடைதல் முதலான காரணங்களும் பாண்டு ரோகத்தை உண்டுபண்ணும். பெண்களுக்கு கர்ப்பஸ்ராவம், கர்ப்பப்பாதம் முதலியவைகளுடன் பிரஸவகாலங்களில் ஏற்படும் அமிதரக்தஸ்ராவமும் பாண்டுவுக்கு காரணங்களாகும்.
5. ரத்தம் தூஷித்துவிடுதல், ஈயம், ரசம், தாம்பிரம் முதலான உலோகங்களை சுத்தி செய்யாமல் செந்தூரம், பற்பம் முதலியனவைகளைச் செய்து உபயோகித்தால் அவை இரத்தத்தை முறித்து பாண்டு நோயை உண்டாக்குகிறது. விகார குணமுள்ள பாக்கு முதலான திரவியங்களை அதிகமாக உபயோகித்தால் இரத்தம் மாறுபட்டு பாண்டுரோகத்தை உண்டாக்குகிறது. இதனை விஷப்பாண்டு என்றும் கூறுவர்.

12) Pandu noi as “Kanma noi”:

Apart from all other etiological factors, Pandu noi is also considered to be among the “Kanma noi”.

In “Agasthiar Vaidyam” it is stated as,

“குயல்வாய் குஷ்டம் சயங் குன்மம் நீரிழிவு சுரக்கிராணி
நீரடைப்பு பாண்டு முலவாய்வு
காயல்வாயு வருங்கண்ணில் குந்தாய் கடினந் தசவாய்வு காணவாக முன்செய்த உயிர்களும் வினைதானே”

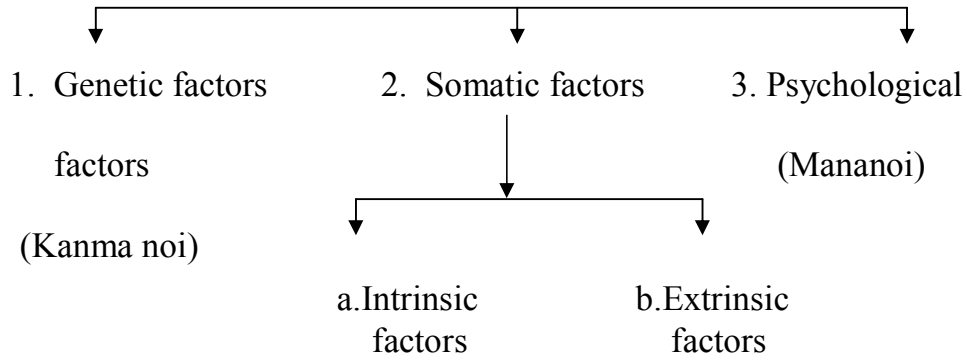
(ii) It is also conhfirmed through “ Agasthiar Paripoornam-400”

“சொல்லாத கடிவிஷங்கள் குன்மம் பாண்டு
துயர் தீராக் கன்மவினை செய்த பாவம்
எல்லோரும் நகைக்க உடும்பெடுத்த பாவி
இன்னமுண்டு விபரமாய் உலகிற் கேளே”

(iii) It is also stated in “Guru Nadi – 235” as

“சொல்லாத விஷக்கடிகள் விஷகுன்மம் பாண்டு
தீராத கன்மவினை செய்தபாவம்” -198

According to above authors Pandu noi caused by,



1. Genetic Factors (Kanma noi):

"பேறுயிளமை யின்பம் பிணி முப்பு சாக்காடு ஆறுங் கருவலமைப்பு"

The disease originated from the soul.

2(a). Intrinsic factors:

- Chronic diarrhoea
- Chronic Diseases
- Menorrhogea and Metrrohagia
- Dysentery
- Neoplastic growth of uterus
- Worms infestation like hook worm
- Renal diseases
- Spleenic disorder
- Loss of blood due to haemorrhoides, purpura and hemetemisis
- Over bleeding during delivery

2(b). Extrinsic factors:

- Excessive intake of salt and sour food
- Increased chewing of betal nut
- Alcoholism
- Daytime sleep
- Mud eating – pica
- Excessive indulgence of sexual activity
- Poverty
- Improper cooked food
- Living in kurunchi nilam
- Haemetotoxins such as mercury, lead, copper etc.

3. Psychological factors (Mananoi):

- Stealing of cotton and temple properties
- Robbery
- Slaughter of cow
- Putting cow in starvation
- Aberration
- Spoils the family by saying tale-teil
- Worries
- Insulting the parents
- Reproach others
- Telling lies
- Egoism

A diseased state of the body is often the result of the diseased state of the mind. Psychological states may produce physiological changes in the physical body. Morbid imaginations may create hunger and thirst, produce abnormal secretions results in disease.

The imbalance causing the disease may originate in the consciousness in the form of some negative awareness and it may then mannifest in the mind. Where the seed of the disease may lie in the deeper subconscious in theform of anger, fear or attachments. These emotions will manifest through the mind into the body. Repressed fear will create derangement of Vatha, anger, excess Pitha and envy, greed and attachment aggravated Kapha. These imbalances of the threee thosas affects natural body resistance and thus the body becomes susceptible to disease.

Impairment of the bodily humors, Vatha, Pitha, and Kapha creates toxins (Amam) that are circulated through out the body. During this circulation, toxins accumulate in the weak areas of the body and the disease will manifest there.

The toxins created by emotional factors, repressed anger completely changes the flora of the galibladder, bile duct and smail intestine and aggravates pitha causing inflamed patches on the mucous membranes of the stomach and small intestine.

Fear and anxiety alters the flora of the largeintestine.

Causes of Pitha pandu states that.

1. **"Thanvanthri (II-nd part)"** says that,

   "ஏய்ந்த வுட்டினக்காலத்தில் எழும்பிடும் பித்தந்தன்னில்
   வாய்ந்திடும் உப்புப்புளிப்பு மரிசந்தா னெனும்பதார்த்தம்
   சேர்ந்துபித் தந்தான் கெட்டுசிலேற்பனம் பொருந்தித் தேக்கிற்
   பாய்ந்து வண்ணந்தனை கெடுக்கும்பயித்திய பாண்டுவாமே"

When the Pitha increased in hot seasons due to increase intake of salt, sour and pepper. Increased Pitha will deranged Kapha and destroys the compiexion of the skin and results the Pitha Pandu.

2. **"Valmihiar – Vaithyam",**

   "குத்திடும் வாதநாடி கூடிடும் பித்தத்தோடே
   தத்தியே நடக்குமாகில் சரீரமே மெத்துவத்தி
   மெத்தவே வாய்நீருறி மேனியும் வெளுத்துக்காணும்
   பித்தபாண்டு ரோகமென்று பேசினார் சூதாய்த்தானே" (26)

   "சூதணிவாத நாடி சுத்தியே பித்தத்தோடே
   ருதணியோணான் போல நிமிர்ந்தமைந்தோடுமாகில்
   லூழிறாய் வாடுங்கண்ணு முதிரமும் வத்திப்போகும்
   வாதழி பாண்டுபோரகம் வால்மீகர் பரிவாய்ச்சொன்னார்" (27)

Combination of Vatham and Pitham causes the excessive salivation, palior of the skin.

In Noi Villakam:

தாதுபலவீனத்தால் உடல்மெலிந்து வனப்பு-வன்மை-நிறம்-ஒளி குன்றும், குரதி கேட்டினால் சரும்வெடிப்பு-சுரசுரப்புடன் மயிரும் உதிரும். மண்-சாம்பல்-பாக்கை விரும்பி உணவை வெறுக்கும். உணவும் செரியாது. கண்ரப்பை வீங்கும். மலநீர் மஞ்சளாகும். பெருமூச்சு, காதிரைச்சல், மயக்கம், மார்புத்துடிப்பு,நாடி மெலிவு, பசியின்மை, இடுப்பு கடுப்பு காணும். இரத்தப் பசையின்றி முகம் வாய், கண், நாவு, ஈறு வெளுத்து வீங்கும்.

States that lassitude loss of weight. Weakness. Decreased complexion of the skin, fissured skin, loss of hair, geophagia, hatedness of food, indigestion of food, thickingof eye lids, high coloured urine, dysponea, tinites, giddiness, tiredness, palpitation, lumbar pain, pallor of face, tongue, gums, eyes and lips.

In **Anubava Vaidya deva ragasiyam** States

Anorexia, dryness of the skin, high coloured urine, excessive sweating, indigestion, loss of weight and tiredness are the premonitory symptoms of Pandu noi.

SCIENCE AND SYMPTOMS OF PANDU NOI:

1. As per **Gurusamy Mudaliar** in **Siddha Maruthuvam**

Inability to walk, headache, paipitation, blurring of vision, giddiness, syncope, dyspnoea, anorexia, vomiting, skin become pale, shrink, shining, nail beds becomes swollen and pallor, fissure tongue, glossitis, hoarseness of voice.

In female scanty menstration, sometimes menorrhogea, may occur.

In children symptoms may asssociated with worm infestation and elderly with hypertension.

If it occurs in pitha theghi anorexia, indigestion, burning sensation, pyrexia, pallor, glossitis, dysphagia, vomiting with bile, bitter taste diarrhoea occur. If the symptoms persist for a long period results in jaundice.

2. According to **Agathiar Gunavahadam:**

"உண்டாக்கும் வேளை தன்னில் தேக நேர்மை
உறுதியாய்ச் சொல்லுகிறேன் நன்றாய் பாரு
குண்டான முகம் கண்கள் உதடு நாக்கு
குறிப்பான வாய் வேகும் தேக முற்றும்
வெண்டாக வேயுலர்ந்து வெண்மையாகி
விரல் நகங்கள் முழுவதிலும் ரத்தம் வற்றி
கண்டான கால்கள் தான் தணிந்து நிற்கும்
கருவான நாடியது மெதுவாய்ப் போமே" (23)

"போமே தான் தீபனங்கள் மட்டுப்பட்டு
போலிவான கண்விழிகள் பெருத்துத் தோன்றும்
ஆமேதான் அசக்தியு மாயாசங் கண்டு
அவர் நடையும் தளர்ந்து பெருமூச்சுக் கண்டு
மூமேதான் மூர்ச்சையுடன் மார் துடித்து
முடிவான கணுக்காலில் வீக்க முண்டாய்
தூமேதா னிருதயத்தின் வதனஞ் தன்னிற்
துருத்தி நிகர் சத்தமது கேட்கும் பாரே". (24)

Stomatitis, pallor of the face, eyes, lips, tongue, and nails, pallor and dryness of the skin, loss of appetite, lassitude, tiredness, bradycardia, dyspnoea on exertion, protrusion of eye balls, palpitation, ankle odema, added heart sounds in the precardium.

3. In **Vaidya Vilakam Ennum Amirthasangaraham:**

"அகட்டினில் வாயுண்டா மருந்திய வுண்டிநாளும்
மிகச் செரியாமை நிற்கு மீளவும் புரளுமென்க
வெளுத்திடு விதனங் காட்டு மெய் கண் கை தான்வெளுக்கும்
மிகச் சல மலத்தைக் கட்டு மேனி வேறாகுந்தானே"

NOI ENN (Classification of Paandu Noi)

1. "Yugimuni" Classify the pondu noi into five types.

"கூறவே பாண்டு விடப் பெயரைக்கேளாய்
குறிப்பாக வைந்துவித மாகும் பாரு
வாரவே வாதமாம் பாண்டிலோடு
மார்கமாம் பித்தத்தின் பாண்டு தாணும்

தேறவே சிலேட்டுமமாம் பாண்டு தாணும்

திரிதோடப் பாண்டொடுவிட பாண்டாகும்."

2. "Thanvanthri" classified into seven types.

"பயித்திய பாண்டு வாத பாண்டுவே சிலேத்தும பாண்டு

வியத்திரி தோஷப்பாண்டு வெறும் பித்த சிலேத்தும பாண்டு

பயித்திய வாத பாண்டு பகர் சன்னிவாத பாண்டு

நயப்புறும் பாண்டு வேழின் குணத்தை நான் நவிலுற்றேன்".

3. According to **"Agathiyar"** classified into five types

"பாரடா பாண்டு வகை சொல்லக் கேளாய்

பரிவான பாண்டதுதா னஞ்சே யாகும்

வாரடா வாத பித்தம் சீத பாண்டு

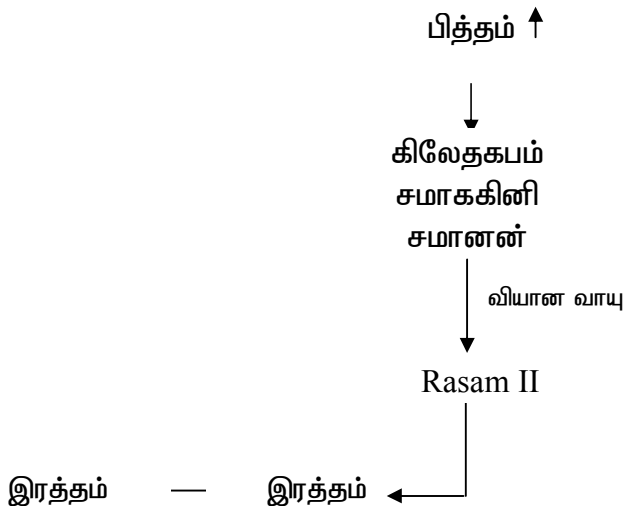
வகையான விடபாண்டு மிருத்திகா பாண்டு (21)

- அகத்தியர் குணவாகடம்

Natural urges

(வாந்தியை அடக்குவதால் பாண்டு நோய் வரும்)

"சத்தியால் பித்தந்தாழம் என்பதற்கிணங்க முக்குற்றங்கள் கேடடைந்த காலத்தில் அவற்றை பரிகரித்தில் பித்தத்தைக் குறைக்க வாந்தி செய்விக்க வேண்டும்.



CLASSIFICATION OF PANDUNOI IN VARIOUS TAMIL TETS :

1. YUGI CHITHAMANI-800

1. Vatha pandu

2. Pitha Pandu

3. Kapha Pandu

4. Mukkutra Pandu

5. Visha Pandu

2. AGATHIAR GUNAVAHADAM

1. Vatha pandu

2. Pitha Pandu

3. Kapha Pandu

4. Vida Pandu

5. Miruthiga Pandu

3. JEEVA RAKSHAMIRTHAM

1. Vatha pandu

2. Pitha Pandu

3. Kapha Pandu

4. Thiridhosa Pandu

5. Mirthikapuktha Pandu

4. ROHANIRNAYA SARAM

1. Vatha pandu

2. Pitha Pandu

3. Kapha Pandu

4. Mukkutra Pandu

5. Visha Pandu

5. CHIKITCHA RATHNA DEEPAM

1. VATHA PANDU

2. Pitha Pandu

3. Kapha Pandu

4. Thridhosa Pandu

5. Visha Pandu

6. VAIDYASARA SANKIRABAM

1. VATHA PANDU

2. Pitha Pandu

3. Moola Pandu

4. Moola Pitha Pandu

5. Visha Pandu

7. MATHAVANITHANAM

1. VATHA PANDU

2. Pitha Pandu

3. Kapha Pandu

4. Sanni Pandu

5. Man Pandu

8. ASHTANGAHRIDAYS

1. VATHA PANDU

2. Pitha Pandu

3. Kapha Pandu

4. Sannipatha Pandu

5. Mannun Pandu

9. THANVANTHRI VAIDYAM

1. Vatha pandu

2. Pitha Pandu

3. Kapha Pandu

4. Mukkutra Pandu

5. Pitha kapha pandu

6. Pitha vatha Pandu

7. Sanni patha pandu

10. T.V. SAMBASIVAMPILLAI

1. Vatha pandu

2. Pitha Pandu

3. Kapha Pandu

4. Mukkutra Pandu

5. Oothu Pandu

6. Neer pandu

7. Eri Pandu

8. Visha Pandu

11. PARARASA SEKARAM	12. ANUBAVA VAIDYA DEVARAHSIYAM
1**. Vatha pandu**	**1. Vatha pandu**
2. Pitha Pandu	2. Pitha Pandu
3. Kapha Pandu	3. Kapha Pandu
4. Sanni Pandu	4. Mukkutra Pandu
5. Mirthika Pandu	5. Mirthikapuktha Pandu
	6. Visha Pandu

NOI KURIKUNANGAL (CLINICAL FEATURES)

1) MURKURIKAL (PREMONITORY SYMPTOMS)

Pandu patients exhibit the following symptoms from their initial stage of development itself. The patient experienced insidious onset of fatigue, lassitude, difficulty in breathing diminished vision, palpitation, which develops with pallor of the skin.

(i) In **"Therayar Neerkuri"**

"இயற்கைநீர் கருங்கினும் இதுவும் சலப்பொருள்
செயற்கையா யருந்தினும் சிறுத்த நீரிதுவும்
பாண்டுநோய்ச் சம்பவத்தைத் தருமதில்".

Sudden oliguria, sometimes oliguria occurs even after excessive intake of fluid.

(ii) As per **Manmuruhiam Ennum Tamil Maruthuva Nool :**

"அடிக்கடி உமிழ்தல் ஆக்கை தளர்தல்
நீரும் கசடும் மஞ்சள் நிறம்படல்
நெஞ்சக் கரிப்பு நெடுந்தோல் வெடித்தல்
கண்ணிமை தடித்தல் உண்டத ருமை
மண்தின் றிடுதல் வியர்த்தல் பிறவும்
வெளிற்று நோயின் முன்னதாகும்".

- மான்முருகியம்

Excessive salivation, lassitude, yellowish colouration of faeces, high coloured, urine, heart burn, skin fissure, thickening of eyelids, geophagia, excessive sweating.

(iv) **In Noi Villakam :**

தாதுபலவீனத்தால் உடல் மெலிந்து வனப்பு-வன்மை-நிறம்-ஒளி குன்றும், குருதி கேட்டினால் சரும்வெடிப்பு - சுரசுரப்புடன் மயிரும் உதிரும். மண்-சாம்பல்-பாக்கை விரும்பி உணவை வெறுக்கும். உணவும் செரியாது. கண்ரப்பை வீங்கும். மலநீர் மஞ்சளாகும். பெருமுச்சு, காதிரைச்சல், மயக்கம், மார்ப்புத்துடிப்பு, நாடி, மெலிவு, பசியின்மை, இடுப்புக் கடுப்பு காணும். இரத்தப் பசையின்றி முகம் வாய், கண், நாவு, ஈறு வெளத்து வீங்கும்.

States that lassitude loss of weight, weakness, decreased complexion of the skin, fissured skin, loss of hair, geophagia, hatedness of food, indigestion of food, thicking of eve lids, high coloured urine,

dysponea, tinites, giddiness, tiredness, palpitation, lumbar pain, pallor of face, tongue, gums, eyes and lips.

v) In **Anubava Vaidya deva ragasiyam** States

Anorexia, dryness of the skin, high coloured urine, excessive sweating, indigestion, loss of weight and tiredness are the premonitory symptoms of Pandu noi.

2) SIGNS AND SYMPTOMS OF PANDU NOI :

SYMPTOMS OF CLASSIFICATIONS :

1. According to **Yugi vaidya Chinthamani :**

(1) VATHA PANDU :

"கொள்ளவே வாதப் பாண்டு ரோகம் கேளாய்
குடல்புரட்டி அடிவயிறுதான் வலிக்கும்
தள்ளவே தாகமொடு பசியுமில்லை
தழலான சரசரப்பாகத் தானும்
நள்ளவே நரம்பெல்லாம் கறுப்புமாகும்
நடுக்கலொடு கண் சிவப்பு மலபந்தந்தான்
விள்ளவே தலைவலிக்கும் மேனி வீங்கும்
வெளுப்பாகும் வாதத்தின் பாண்டுதானே".

- Pain in the lower abdomen
- Thirst, loss of appetite
- Dryness of the skin
- Veins become more visible due to pallor of the skin
- Rigor, redness of the eye

- Constipation, headache
- Pallor of the skin and anasarca.

(2) Pitha Pandu :

"வாமென்ற மேனியெல்லாம் மஞ்சளித்து
மகாவெளுப்பு உண்டாகி மந்தக் கண்ணாற்
தாமென்ற தாகமொடு மூர்க்கையாகுந்
தனிவாயில் மிளகு போற் றானுரைக்கும்
நேமென்ற நெஞ்சமுடி தானுமுண்டாய்
நெருக்கியே மூச்சு முட்டதுவே யாகுங்
கோமென்ற கிறுகிறுத்து வாய் கைப்பாகும்
கிளர் பித்தப் பாண்டு வெனக் கூறலாமே".

- Yellowishness and pailor of the skin
- Diminished vision
- Severe thirst
- Fainting
- Pungent taste like pepper
- Chest pain
- Dyspnoea and giddiness
- Bitter taste

(3) Kapha Pandu :

"கீறியதோர் நரம்புத்தோல் மிக வெளுப்பு
கிளர்நாவு உப்புறைக்கு மயிர் கூச்சாகும்
வாறியதேர் வாந்தியாங் குரலுங் கம்மும்
மகத்தான தும்மலுடன் கோழையாகும்
ஊறியதோ ரிருமலோடு மயக்க முண்டா
மிடுப்பசதி யிந்திரிய நட்டமாகுஞ்
சீறியதோர் சோபமொடு தாக மாகுஞ்
சிலேட்டுமத்தின் பாண்டென்னச் செப்பலாமே".

- Pallor of the skin
- Salty taste
- Horripilation
- Vomiting
- Husky voice
- AnwwInfg
- Cough with expectoration
- Fainting
- Lassitude
- Emission of semen
- Anasarca

(4) Mukkutra Pandu :

"செப்பவே அருசியொடு சோபதாகம்
செயலான சுவாசமொடு இளைப்புமாகும்
வெப்பவே மேநிசிறுநீர் தான் வீழும்
மிடுக்கான பெலஈனமார் பிடித்தல்
துய்யவே சூட்டோடு தியக்கமாகுந்
தும்ம லாயுடம் பெங்கு முதீக் காணு
திப்பவே தேகமெங்குமசதியாகு
திரிதோஷப் பாண்டென்னச் செப்பு நூலே".

- Anorexia
- Anasarca
- Dyspnoea
- Emaciation, Hot urine
- Lassitude, Chest pain
- Warmness of the skin
- Sneezing, Weakness

Vishu Pandu:

"நூலாக நகத்தோடே யுடல் வெளுக்கும்
நோய் நரம்பு சூடாகுந் தாகமாகும்
ஆவான அருசியொடு சத்தி விக்கல்
அதட்டியே இருமலுடதி சுவாசம்
வாலாகவயிற்றிரைச்சலதிசார தோசூம்
மகரமு முண்டாதல் மார்கனத்தில்
வேராக மேனி பெங்குமிக வேஊதல்

விஷபாண்டு அசாத்யமென்ற விளம்பலாமே

- Pallor of the skin
- Warmness of the blood vessels
- Excessive thirst
- Anorexia, vomiting, hig-cough
- Cough, dyspnoea
- Flatulence, diarrhea
- Pyrexia, anasarca
- Heaviness of the chest
- Very bad prognosis.

(i) As per Gurusamy Mudaliar in Siddha Maruthuvam

Inability to walk, headache, palpitation, blurring of vision, giddiness, syncope, dyspnoea, anorexia, vomiting, skin becomes pale, shrink, shining, nail beds becomes swollen and pallor, fissure tongue, glossitis, hoarseness of voice.

In female scanty menstruation, sometimes menorrhogea, may occur.

In children symptoms may associated with worm infestation and elderly with hypertension.

பிரக்ருதி

பிரக்ருதி என்று சொல்லுக்கு ஸ்வபாவம் மூல காரணம் இயற்கை மாற்ற முடியாதது என்றெல்லாம் பொதுவான அர்த்தங்கள் உண்டு. வேத முதலிய சாஸ்திரங்களிலும் ஆயர்வேதத்திலும் இதைப் பற்றிய குறிப்புகளைக் காணலாம். இதை பொதுவாக மனிதனின் உடல் மனத்தன்மை அல்லது பொதுவாக மனிதனின் அல்லது உடல் மனக்கூறு என்று எடுத்துக் கொள்ளலாம். ஆயுர்வேதம் பலவித பிரக்ருதிகளைப் பற்றி விரிவாக எடுத்துக் கூறுகிறது. முக்கியமாக உடம்பின் ஆரோக்கியத்தைக் காக்கவும் நோய்களை போக்கவும் ப்ரக்ருதியை பற்றி அறிய உதவுகிறது.

வாதபிரக்ருதி

வாதத்தின் லகு தன்மையால் வாத பிரக்ருதி உடையவர்கள் மெலிந்த உருவம் கொண்டவராயிருப்பார். இவர்களின் பேச்சில் வறட்சியும் தளர்ச்சியும் காணப்படும் கண்கள் சிறியதாக இருக்கும். ஆழந்த உறக்கம் இவர்களுக்கு கிடைப்பதில்லை உறங்கும்போது வாய் மற்றும் கண் சற்றே திறந்திருக்கும். உறக்கத்தில் பற்களைக் கடிக்கும் தன்மைக் கொண்டவராயிருப்பார். தோலின் தன்மை தன்மைக் வறட்சியுடனும் கால் வெடிப்பு அதிகமானதாகவும் குரல் கீச்சென்றும் அழுகுரலுடனும் இருக்கும்.

பித்த பிரக்ருதி:

பித்த பிரக்ருதிக்காரர்கள் சாதாரண் உடல்வாகு கொண்டவர்கள், பசி, தாகம் தீவிரமாக இருக்கும் உடலில் மயிர் அடர்த்தியில்லாமல்

மிருதுவாய் சிறிது செம்பட்டை நிறத்துடன் இருக்கும் விரைவில் நுரைந்து விடும். பித்த பிரக்ருதிக் காரர்கள் தைரியராலிகளாகவும், அறிஞர்களாகவுமே, தேர்வடைந்தவர்களாகவும் காணப்படுவர். இவர்களிடம் அதிக அளவில் வெளிப்படும். தோலில் அதிக வியர்வையினால் ஏற்படும் ஒரு துர்நாற்றம் இருக்கும்.

கப பிரக்ருதி:

இவர்களின் அங்கங்கள் பளப்பளப்பாகவும் மிருதுவாகம் இருக்கும் சுக்ல தாது நிறைந்து காணப்படுவதால். சந்தான விருத்தி உண்டு. சரீர கனந்து பருமனாக இருக்கும் கபத்தின் மந்த குணத்தால் ஆகாரம். விகாரம் பேச்சு. செய்கை எல்லாவற்றிலும் மந்தகதியே காணப்படும். இவர்களின் தலைமூடி அடர்த்தியாகவும் நகங்கள் திடமாகவும் கண்கள் பெரியதாகவும் இருக்கும் பெண்களின் மாதவிடாய் சீரானதாக இருக்கும். எந்த காலநிலையும் இவர்களுக்கு ஒத்துப்போகும் இவர்களில் நாடித் துடிப்பு மெதுவாகக் காணப்படும்.

ETIOPATHOGENESIS OF VATHA PANDU

1. Diarrhoea - Vatham Increased (Abannan)
2. Excessive use of salt + Sour - Pitham Increased ↑
3. Indigestion - Kapham ↑ Vatham ↑
4. Use of Betal nut chewer - Pitham ↑
5. Excessive consumption of alcohol- Pitham ↑
6. Day sleep – பித்தம் ↑
7. Immoral activities - பித்தம் ↑
8. Disobedient rules - பித்தம் ↑
9. வாந்தியை அடக்குவதால் - பித்தம் ↑

Relation between Agni:

The dietary habits, external causes directly affect the pitham it leads to Tecshnagi. Increased pitham inhabits the digestive enzymes. When the digestive power is abnormally increased such person digests large qualities of food because of increased qualities of tissue enzymes large metabolic late such as individual is prone to disorder like hyper acidity.

It causes indirectly affects the kapham, it leads to mathaagni. It digestion for long time. So it increases the pitham other hand, it also affects the vatham. It produces delayed digestion also it increases the pitham.

Relation Udal thathukkal:

These dietary habits directly affects the pitham. These subdivision are anar pitham and kilethgam cue also affected so rasam is not formed in quality it also deficient in Ratham pandu Noi.

Relation between ennvagai thervu:

There eight told diagnosics are very important. Ist of all Naa is formed in Apper Bhootham. Singuvai is other name for Naa. Rasam is Naavin kooru. It helps the speech, digestion and to know the taste.

Naa is mirror image of body. It is indicated in various diseases.

Naa

Vedippu - Vatham ↑

Coated - Vatham ↑

Pigmentation- Kapham ↑

Niram - helps to vatham, pitham + kapham yakkhai

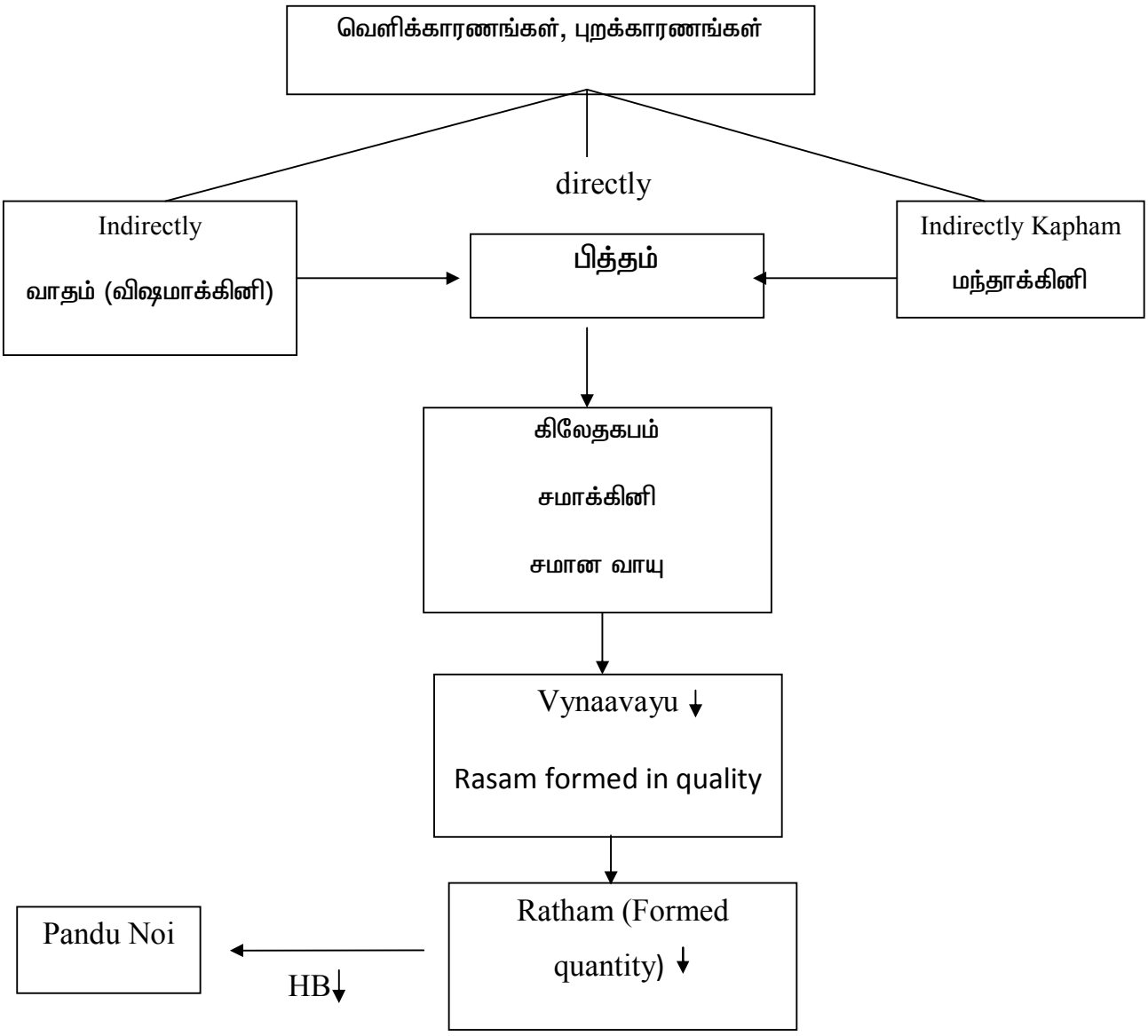
Taste :

Naatip - Sweet

Anterior - Sour

Lateral - bitter, sour

Bald tongue - indigestion


வெளிக்காரணங்கள், புறக்காரணங்கள்
directly
Indirectly
வாதம் (விஷமாக்கினி)
பித்தம்
Indirectly Kapham
மந்தாக்கினி
கிலேதகபம்
சமாக்கினி
சமான வாயு
Vynaavayu ↓
Rasam formed in quality
Ratham (Formed quantity) ↓
Pandu Noi
HB↓

ALTERED CHARACTERS OF UYIR THATHUKKAL

Vatham

1	பிராணன்	Dysponea
2	அபாணன்	Constipation or diarrhoea
3	உதானன்	Extreme tiredness
4	வியானன்	Ciculatory disturbances
5	சமானன்	Indigestion and Impaired absorption
6	நாகன்	Poor concentration
7	கூர்மன்	Extreme tiredness
8	கிருகரன்	Impaired Oral secretion
9	தனஞ்செயன்	-

Pitham

1	அனற்பித்தம்	Indigestion, loss of appetite
2	இரஞ்சகம்	Pallor, of skin and mucous membrane
3	சாதகம்	In activated function of body
4	ஆலோசகம்	Blurred vision
5	பிராசகம்	Skin pigment

Kabam

1	அவலம்பகம்	Anaemia, dysponea
2	கிலேதகம்	Delayed digestion
3	போதகம்	Indigestion
4	தற்பகம்	Blurred vision
5	சந்திகம்	arthritis

UDAL THATHUKKAL

1	சாரம்	Loss of appetite, inadequaate nourishment
2	செந்நீர்	Pallor of body and mucous membrane
3	ஊணன்	Tumour of swelling, heaviness of the body
4	கொழுப்பு	Dysponea
5	என்பு	-
6	மூளை	Feeling of heaviness of body
7	சுக்கிலம் / சுரோணிதம்	-

Ennvagai Thervu

1	நா	Coated, black coloured spots
2	ஸ்பரிசம்	Reddish tongue, bald tongue Hypo pigmentation
3	மலம்	Diarrhoea, Constipation

MODERN ASPECTS

Nutritional anaemia is one of the most common problem in the developing countries. This is due to poor hygienic status of people in these countries, As we all know iron is an important element, that our body needs compulsorily. Iron is present in most of the cells of the human body as a carrier of oxygen, in the from of haemoglobin and also as cytochromes etc. Hence any form of deficiency of iron results in anaemia.

Blood

Definition

Blood is a complex fluid, which circulates, rapidly in the vascular system. It is red, opaque and slightly alkaline (pH 7.4). It consists of a pale, yellow liquid called plasma. in which the formed elements are suspended.

Blood is unique among tissues because it is a fluid. It plays the most important role in the transport of agents to and from the organs and tissues of the body. The circulatory system provides the mechanism for the blood to perform this function.

Composition of Blood

Blood is a complex fluid consisting of two parts. They are the plasma, which constitutes about 55 per cent and formed elements which form about 45 percent of the volume. The plasma is a clear yellowish

fluid. The formed elements consist the free cells viz. the red blood cells (Erythrocytes or RBC) the white blood cells (Leucocytes or WBC) and the platelets or thrombocytes.

FUNCTIONS OF BLOOD

1. **Transport of food:** It absorbs and carries the products of digestion from the digestive tract to the tissue cells of the various parts of the body for utilization.
2. **Transport of waste products:** The waste products of tissue metabolism such as urea, uric acid, creatinine and many other substances pass into the blood which transports them to the kidneys and other organs of excretion.
3. **Gaseous transport:** Blood conveys oxygen from the lungs to the tissues for the oxidation of food and production of energy. The carbondioxide formed in the tissues as a result of this process is carried to the lungs, where it is exhaled.
4. **Hormone transport:** The hormones produced in the various endocrine glands all over the body are transported directly by the blood to the different target tissue often situated far away from the site of production.

5. **Regulation of body temperature:** The human being is a homeothermic animal and the body temperature has to be kept constant within a narrow limit. Blood transfers heat from the warmer to the cooler parts of the body.
6. **Defence mechanism:** Blood has a. dual function in the defence mechanism. The white blood cells and especially the polymorpho nuclear ho' nuclear leucocytes have a phagocytic action and surround and attack the disease germs entering the human body. In fact, pus is the debris of dead white cells killed in such encounters. The plasma proteins and specifically the gamma globulins produce antibodies against the antigens present in foreign bodies and germs. Blood also transports antibodies, antitoxins and lysins which are protective substances against the bacteria and other injurious substances entering the body.
7. **Maintenance of water balance:** Blood maintains the water content of the tissues and helps in the regulation of fluid in the different compartments of the body.
8. **Acid-Base Balance:** The acid-base balance of the body is one of the physiological constants which have to be kept constant within narrow limits. The normal PH of the body is maintained with the help of blood.

9. **Osmotic pressure regulation:** The Plasma proteins play the major role in regulating the osmotic pressure of the tissue fluids.
10. **Iron Balance:** Haemoglobin is the main part of iron in the body and iron balance is kept by the blood.

PROPERTIES OF THE BLOOD AT VARIOUS AGE LEVELS

THE RED BLOOD CELLS OR ERYTHROCYTES

MORPHOLOGY

The erythrocytes of most of the higher animals, including man, are circular, non-nucleated, biconcave discs. They are around 7.8 ~t. Its thickness at the periphery is 2.2[t and 1 vi in the centre. Because of this the outer edge appears as a rim around a central depression, and when seen edge-wise it has the approximate apperance of a dumb bell.

The mammalian erythrocyte is well adapted to its respiratory function. The small size, the lack of a nucleus and the discoid biconcave shape allow transport of a relatively large amount of haemoglobin disposed near surface of a relatively large amount of haemoglobin disposed near surface of the cell, thus facilitating gaseous exchange.

PRODUCTION OF ERYTHROCYTES

Areas of the body that produce Erythrocyte cells

1. In the early few weeks of embryonic life - yolk sac
2. During the middle trimester of gestation - Liver, spleen and Lymph nodes
3. Later part of gestation and After birth - Red bone marrow
   a) Up to the age 5 - Red marrow of all the bones
1. After the age of 5 - Red marrow of Proximal and adult life of long bones and flat bones such as ribs, vertebrae, Pelvis, sternum and the ileac bone

Sometimes under conditions of exchanged stimuli, reticulo-endothelial system also take up the embryonic function, and yellow marrow shall be transformed into the red marrow. Even in these bones, the marrow becomes less productive as age increases.

Genesis of Red Blood Corpuscles

In the bone marrow there are cells called Pluripotential Haemopoietic Stem cells (PHSC) from which all the cells in the circulating blood are derived. The large portion of reproduced stem cells differentiate to form the other cells. The early offspring still cannot be recognized as the different types of blood cells, even though they have already become committed to a particular line of cells and are called committed stem, cells.

The different committed stem cells, will produce colonies of specific types of blood cells. There. a committed stem cell that produces Colony-Forming Unit-Blast (CFU-B) and then Erythrocytes are produced from these are called Colony- Forming Unit- Erythrocytes (CFU-E).

Growth and reproduction of the different stem cells are controlled by multiple proteins called Growth inducers. The another set of proteins are called differentiation inducers whose function is differentiation of the cells.

Substances necessary for the formation of Erythrocytes Corpuscles

a) Proteins

Haemoglobin synthesis depends on adequate supply of the properAmino-acids for the synthesis of globin and clinical and experimental evidence vows that aneamia can be caused or aggravated by protein deficiency.

FUNCTIONS

1. Erythrocytes contain an iron containing Red pigment called heamoglobin, which is associated with transport of oxygen from the lungs to tissues.

2. Carbonic anhydrase, the Enzyme present in the Blood catalyses the reaction between carbondioxide and water, thereby transporting them from the tissue to the lungs in the form of the bicarbonate ion [$HC0_3$].
3. The respiratory Pigment heamoglobin in the erythrocytes is an excellent acid- base buffer, so that the red blood are responsible for most of the buffering power of whole blood.
4. Erythrocyte cells takes part in main metabolic activities.
    1. Conversion of glucose to lactic acid.
    2. Glutathione metabolism

Destruction of Erythrocytes

Average life span of erythrocytes is 120 days. Matured erythrocytes have ATP and NADPH, which maintains its pliability of the cell membrane and transport of iron. The erythrocytes after its life span becomes fragile carried out by phagocytic of haemolysis are the bone known as "grave yard of RBC'S". The and ruptures and the fragment are reticuloendothelial cells. The main sites liver, spleen, which is marrow,

RBC is split up & the haemoglobin is released from it & again splits up into haem (Iron portion) & globin (Protein potion) further divided into bile pigments.

Normal values of Erythrocytes

Infants	-	4 - 4.5 million / cu mm
2 - 6 years	-	4.5 million /cu mm
6 -14 years	-	4.5 - 4.8 million/ cu mm

Ref : propedeutics of Children's Diseases - Prof. Y. Dombrovskaya

ANAEMIA

A) Definition

Anaemia is defined as a quantitative or qualitative deficiency of circulating Red cells. Haemoglobin level 11 gm/dL in Children between six months and six years old or below 12 gm/dL in Older Children indicates Anaemia.

Ref : "Text Book of Paediatrics", by S.T. Achar and Suraj Gupta.

WHO Grades Anaemia according to Haemoglobin level as follows. Hb between 10 g and cutoff point for age - Mild

Hb between 7 to 10 g - Moderate

Hb under 7 g - Severe.

Ref : The Short Text Book of Paediatrics by Suraf Gupta.

B) Aetiology of Anaemia

Newborn

1. Haemolytic disease (Rh or ABO incompatibility)
2. Result of blood loss (antenatal, natal or post natal)

Young Infants (3 months to 18 months)

1. Physiological Anaemia (Normal variation of Hb and RBC and not a true anaemia)
2. Iron deficiency anaemia especially in prematures (with or without protein deficiency)
3. Megaloblastic Anaemia of infancy.
4. Infections, dysentries and diarrhoea.

Older Babies and Children

S.No	Common Causes	Less Common Causes
1.	Malnutrition and iron deficiency	Leukaemia, Neuroblastoma
2.	Infections	Inherited defects of RBC Haemoglobinopathies or Congential Spherocytosis.
3.	Ankylostorniasis	Bleeding disorders a) Haemophilias b) Thrombopenic states purpuras and petechial bleeding.
4.	Nephritis Nephrosis	Rare causes - aplastic anaemia pernicious anaemia.
5.	Tuberculosis (miliary tuberculosis, Rheumatic fever.	

C) Etio - Pathogenesis

1. Anaemia due to defects in Haemoglobin Synthesis

When there is deficiency of Iron, PEM Vitamin B 12, Vitamin C, Folic acid, pyridoxine, Thyroxine, Proteins and Copper there is decreased Haemoglobin synthesis.

2. Anaemia due to immaturation of Red Blood Cells

In Megaloblastic Anaemia, large nucleated immature red blood cells are seen in the red marrow or the bones also. This immaturation is due to non-availability of Vitamin B_{IZ}. Folic acid

3. Anaemia due to Red Blood Cells defects

The life span of matured Red Blood cells is about 120 days. Some times, they may die within their usual life time. This leads to anaemia.

D. Clinical Features of Anaemia

Symptoms and signs of Anaemia.

Symptoms	Signs
Lassitude, Fatigue, Breathlessness on exertion, Palpitations, Tinnitus Throbbing in head and ears Dizziness, Headache, Hair loss, Insomnia, Angina, Dimness of vision, Paraesthesia in fingers & toes.	Pallor of skin, tongue mucous membranes, palms of hands conjunctiva. Systolic flow murmurs Oedema, Cardia dilatation Tachycardia

E) Pathological Red Blood Cells in Anaemia.

In Anaemia many kinds of abnormal red cells, including nucleated forms, are seen in the circulation. These abnormal cells are

I. ANISOCYTOSIS (RBC with inequality of size)

a) MACROCYTOSIS

The Size of the cell is 9 to 12 microns. This occurs in pernicious Anaemia, sometimes in Leukaemia, Myeloma, Malignancy, Hodgkin's disease, Myxoedema, plumbism, acute anaemia due to severe haemorrhages and erythrob lastosis foetalis.

b) MICROCYTOSIS

The size of cell is less than 6 microns occurs in Iron deficiency Anaemia, Chlorosis, Chronic bleeding, Polycythaemia and Anaemias secondary to infections.

c) NORMOCYTOSIS

The red cells are in normal size, found mainly in post-haemorrhagec anaemias.

II. POIKILOCYTOSIS (RBC with inequality of shape)

In all Anaemias, some of the red cells are pyriform or other irregular shapes.

a) OVALOCYTOSIS.

The oval shape red cells occurs in some human families. Such a condition does not cause ill-health, but a minority may manifest haemolytic phenomena.

b) SPHEROCYTOSIS

Spherocytosis may be seen in congenital haemolytic Anaemia and in certain other acute haemolytic anaemias. The red cells are very fragile.

c) SICKLE CELLS

In arterial blood, the red cells are normal in shape, but in venous blood some cells assume the shape of sickle.

III. POLY CHROMATOPHILIA [Irregularity in Staining]

This indicates an increase in immature red cells in circulation and occurs in the following forms

a) NORMOl3LASTS

Nucleated red cells, indicate over-activity of the bone marrow. Commonly seen in severe Anaemia.

b) PATCHY STAINING OF THE CELLS

Indicates immaturity occurs in pernicious anaemia and most of the blood dyscrasias.

c) PUNCTATE BASOPHILIA [Stippling]

There is stippling of some of the red cells occurs in Lead poisoning and severe anaemias, Leukaemias and Chronic malaria.

d) RETICULOCYTOSIS

Occurs in acute bleeding and in pernicious anaemia when the patient is treated with B12 or liver extract there by indicating activity of bone marrow.

Ref : Davidson's Principles and practice of Medicine.

CLASSIFICATION OF ANAEMIA

Based on Erythrocyte Morphology	
1.Microcytic Hypochromic Anaemia	Iron deficiency, Thalassemia, Haemoglobino pathies and Haemolytic anaemia
2.Normocytic Normochromic Anaemia	Aplastic anaemia
3. Macrocytic Normochromic Anaemia	Folate and vitamin B_{12} deficiency, Hypothyroidism
4. Macrocytic Hypochromic Anaemia	Combined deficiency of Iron and folate or vitamin B_{12}

MICROCYTIC ANAEMIA

The size of red cells are smaller than normal and colour index less than one.

The mean corpuscular volume is less than 78 cubic microns.

Causes for Microcytic Anaemia

1. In adequate intake of'defective absorption of iron, idiopathic hypochromic anaemia, starvation, dietary deficiency, anaemia of milk fed children etc.
2. Excessive need of iron during growth, pregnancy
3. Chronic Haemorrhages.
4. Inadequate utilization of Haernatinics - myxoedema, chronic sepsis, chronic renal diseases.

MACROCYTIC ANAEMIA

The red cells are bigger than normal and the colour index is above one. The mean corpuscular volume is more than 94 cubic microns.

Causes of Macrocytic Anaemia

1. Deficiency of the Extrinsic factors, nutritional anaemias. Pellagra.
2. Absence of Intrinsic factors. Addison's anaemia hypertrophic or atrophic gastritis total gastrectomy.
3. Failure of the liver to store the Anti-anaemic substances from the intestine - steatorrhoeas.
4. Failure of the liver to store the Anti-anaemic substance, cirrhosis of liver, hepatoma.
5. Failure of the bone marrow to utilise the Anti-anaemic substance. The treated megaloblastic anaemia Hypoblastic anaemia.
6.

NORMOCYTIC ANAEMIA

The size of the red cells are more or less than the normal size. The colour index is less than normal range and the mean corpuscular volume is 78 to 94 cubic microns.

Causes of Normocytic Anaemia

- Acute Haemorrhage
- Haemolytic anaemias
- Blood destruction by metals, bacteria, protozoa, hemolysis
- Blood dyscrasias as Leukaemia, Hodgkin's disease, drug poisoning.
- PEM, Iron, Folic acid, Vitamin B12, Vitamin C, Pyridoxine or Thyroxine deficiency.
- Hereditary Spherocytosis G-6-PD deficiency.and Kala-azar.
- Rh or ABO incompatibility Autoimmune, Drugs like Primaquine, Furazolidine and Phenacetin.
- Trauma, Epistaxis circumcision Bleeding diathesis [Leukemias, Purpura, Hemophilia] Haemorrhagic disease of newborn Scurvy.
- Hookworm Chronic dysentry Oesophageal varices.

4. Bone Marrow Depression

Primary -	**Hypoplasia or aplasia**
	Fanconi anaemia.
Secondary -	Infections,
	Irradiation,
	Chronic illnesses like
	Nephritis, Drugs like
	Chloramphenicol, sulfas
	Leukemia and other
	neoplastic diseases.
5. Infections Acute -	Fulminating Osteomyelitis
	Septicaemia.
Chronic -	Tuberculosis,
	Rheumatic Fever,
	Subacute bacterial endocarditis,
	Wound infections,
	Congenital syphilis.

6. Other Miscellaneous

Conditions - Cretinism

Chronic amoebic dysentery, Repeated bouts of diarrhoea.

IRON DEFICIENCY ANAEMIA (IDA)

Despite the abundance of iron in the environment, iron deficiency is the most common nutritional deficiency in the world and the most common cause for anaemia world wide. The major factors that seem to influence the prevalence of anaemia include socio-economic status, dietary patterns, the degree of urbanization, educational background, accessibility to health care facilities, prophylaxis programmes and the prevalence of worm infestations in the population.

Over the last 50 years, various authors have reported the prevalence of iron deficiency anaemia anywhere between 68% and 97% in children.

B) Aetiology

The Aetiology varies with the age, sex and country of residence of the patient.

1. Increased Physiologic Requirements

Rapid Growth : Infancy, preadolescence Menstruation

Pregnancy.

2. Decreased Iron Assimilation

Iron poor diet

Iron Malabsorption Sprue, nontropical spree. Gastric resection

Pica.

3. Blood Loss

Gastro Intestinal Bleeding Milk-induced enteropathy Peptic ulcer disease Inflammatory bowel disease Meckel diverticulum

Drugs : Salicylates Hookworm infestation Fetal Maternal transfusion Haemoglobinuria : Prosthetic Heart Valve Iatrogenic

Idiopathic pulmonary hemosiderosis Intense exercise.

MENSTRUATION:

Iron deficiency in post pubescent girls in most commonly caused b y the loss of more iron through menstruation.

PREGNANCY:

During pregnancy anaemia is almost universal.

IRON - POOR DIET

- ❖ Dietary inadequency is present in more than 80 percent of cases, especially in the poorer groups. This is still encountered in privileged societies under the following circumstances.
- ❖ Infants are also at high risk because the diet, predominantly milk contains very small amounts of iron.. Human milk provides only about 0.3 mg/litre of iron.
- ❖ Premature babies have only lesser amount of storage iron in the liver as well as body.

Children especially during the early years of life, have a need for dietary iron to accommodate growth and expansion of the blood volume.

(C) PATHOGENESIS

Iron deficiency anemia develops when the supply of Iron to the bone marrow is insufficient for the requirements of haemoglobin synthesis.

It has been pointed out that the body is normally in a state of positive iron balance. When a negative iron balance occurs, due to either blood loss, increased requirements or impaired absorption the deficit is made good by iron mobilized from the tissue stores, and an adequate supply of iron for haemoglobin formations maintained. It is only when the tissue stores are exchausted that the supply of iron to the marrow for Haemoglobin synthesis becomes inadequate and hypochromic anemia develops.

Thus iron deficiency may be regarded are developing in two stages

- The progressive depletion and ultimate exhaustion of the available tissue iron stores.
- The development of anaemia.

Iron deficiency state, which may be divided in to three functionally distinct stage of severity.

Stage	Manifestation
Early Stage	Storage Iron depletion
Second Stage	Iron limited erythropoiesis
Third Stage	Iron deficiency anemia

Table stages of Iron deficiency Anemia

(i) Storage iron depletion

Iron reserve is small or absent and is characterized by reduced serumferritin or reduced iron concentration in marrow and liver tissue. Haemoglobin serum iron, Transferritin concentration and saturation are within normal limits.

(ii) Iron Limited Erythropoiesis

Haemoglobin (Hb) may still be normal but serum iron is low and TIBC increased with a low serumferritin and raised free erythrocyte protoporphyrin (FEP).

(iii) Iron deficiency anaemia

The flow of iron to erythroid marrow is impaired to cause . in reduction haemoglobin concentration with a progressive microcytic hyprochromic anaemia associated with reduced serum iron, transferrin saturation and serum ferritin level.

CLINICAL FEATURES

Symptoms	Signs
Weakness	Pallor of skin (waxy pallor),
Headache	Mucous membrane,
Body ache	Palms, nails and
Giddiness	Conjunctiva
Fatigue	Smooth pale and glossy tongue
Lassitude	Angular Stomatitis
Breathlessness on exertion	Glossitis
Dimness of vision	Cheilosis
Dizziness	Hepatospleenomegaly
Insomnia	Koilonychia
Inability to concentrate	Pica "'
Tinnitus	Tachycardia
Anginal pain	Cardiomegaly
Paraesthesia in fingers and toes	High Volume pulse
Palpitation	Haemic munnur
Loss of appetite	Oedema
Mental apathy	
Constipation	
Abdominal distension.	
Hair loss	
Exercise intolerance	

- ❖ The initial nail changes are thinning, cracking and brittleness of the toes and finger nails, later becoming typically concave (or) spoon shaped. This is called Koilonychia.
- ❖ Pica, especially for eating sand, raw cereal or lime children with geophagia are at risk for parasitic infestation and lead poisoning.

D) Role of Iron Deficiency Anaemia in Various System

Cardiovascular system

Dyspnoea and palpitation are common symptoms while on exertion but in very severe anaemia the patient may get cardiac failure and there maybe dyspnoea at rest. Haemic murmurs are commonly heard in anaemic patients. The murmus are most often mild systolic murmurs heard at the mitral area.

Central Nervous System

Symptoms include faintness, giddiness, headache, roaring and banging in the ears, tinnitus, spots before the eyes, lack of concentration and drowsiness and with severe anaemia clouding of Consciousness, Numbness, Coldness and sometimes tingling of the hands and feet may be complaints of in severe anaemia.

Reproductive System

Menstrual disturbances are commonly associated with anaemia.

Renal System

Slight proteinuria may be present with severe anaemia. Anaemia may further reduce renal function to point at which nitrogen retention develop, correction of anaemia in such patient is usually followed by a fall in blood urea.

Castro Intestinal System

Anorexia is the commonest symptom, nausea, flatulence and constipation may also occur slight to moderate smooth hepatomegaly is common in severe anaemia and when congestive heart failure develops, the liver may become tender. In certain cases of iron deficiency anaemia spleen may be enlarged.

Pyrexia

Mild pyrexia may occur with severe anaemia but marked fever is due to either the causative disorder or to some complicating factor.

E) Complication of Iron Deficiency Anaemia

- Iron deficiency anaemia may be the present finding iii gastrointestinal cancer.
- In patients with heart disease, severe anaemia may precipitate angina pectoris or congestive heart failure.
- Infections are more common in Iron deficiency anaemia, especially those of the respiratory, gastrointestinal and urinary tracts.

- ❖ Chronic Iron Deficiency anaemis reduces the efficiency in work and study.

F) Investigations required for Iron deficiency Anaemia

i) Blood Investigation

- ❖ Total Red Blood Cell Count Differential Count
- ❖ Erythrocyte sedimentation Rate Haemoglobin Estimation
- ❖ Mean Corpuscular Haemoglobin Mean Corpuscular Volume
- ❖ Mean Corpuscular Haemoglobin Concentration Packed cell Volume
    a) Peripheral Blood smear Red cell survival Serum Iron
    b) Serum Ferritin Concentration Serum protein
    c) Serum creatinine

ii) Urine Investigation

- ❖ Urine sugar
- ❖ Urine albumin
- ❖ Deposits
- ❖ Red Blood Cells
- ❖ Pus Cells

iii) Stools Investigation

b) Occult blood

c) Organisms

d) Ova

e) Cyst

f) Red Blood Cells

g) Pus Cells

iv) Special Investigations occasionally required.

- X-Ray barium meal, X-ray Barium enema, X-ray chest.
- Endoscopy, Colonoscopy, sigmoidoscopy, gastroduodenoscopy.
- Isotope studies

Determination of life span of red cells using ^{51}Cr labelled erythrocytes.

1. Determination of absorption, utilisation and disposal of iron using ^{59} Fe

- Skeletal survey for multiple myeloma & secondary deposits.
- Bone marrow examination
- Liver function test (LFT)
- Jejunal biopsy, IV Urography, selective angiography
- Ultrasonography

H) Differential Diagnosis

Iron deficiency anaemia must be differentiated from other hypochromic anaemias.

i) Anaemia of infection

Chronic infections such as rheumatic fever, rheumatoid arthritis, tuberculosis and malaria may have associated mild to moderate anaemia,

which is normochromic or slightly hypochromic. Serum iron is low, total binding capacity is also decreased. Bone marrow haemosiderin is present,

iv) Sideroblastic Anaemia

Most of the red cells are hypocromic and microcytic, serum iron is high and iron deposits in the marrow, liver and spleen are excessive. Many erythrocytes and erythroblasts contain non haemoglobin iron (ringed sideroblasts) in their mitochondria. The spleen is usually enlarged.

v) Anaemia of Lead Poisoning

Anaemia of lead poisoning is hypochromic and microcytic and may be moderate to severe. Basophilic stippling of red cells which helps to differentiate it from iron - deficiency anaemia, pronounced in increase of arnin.olaevulinic acid and coproporphyrin in the urine is characteristic of lead poisoning, Increased levels of lead in urine and blood are require for define diagnosis.

I) Diagnosis

Following criteria are essential to diagnose Iron Deficiency Anaemia.

1. History of inadequate intake of dietary iron and blood loss if any.
2. Typical symptoms and signs like easy fatigue, Waxy pallor, pica, koilonychia, smooth tongue, cheilosis and dysphagia associated with general considerations.
3. Hypochromic and microcytic structure of Red Blood Cells.

4. Low serum iron, increased total iron binding capacity.
5. Bone marrow haemosiderin absent
6. Blood loss usually occult.
7. Platelet count is either normal or raised
8. Haemoglobin estimation variably reduced
9. Reduced Mean Cell Volume
10. Erythrocyte count may be normal or reduced, less than.

    Haemoglobin level would suggest.
11. Serum ferritin level is reduced.

Management

This can be considered under three heads

1. correction of anaemic state

Over all correction of nutrition with articles rich in iron is important. Iron deficiency is corrected by intake of rich iron content diet and administration of medicinal Iron..

2. Replenishment of iron stores

3. Elimination of the cause.

Response to treatment

1. A positive response to therapy can be defined as a daily increase in haemoglobin concentration of 0.1 gm/dl (o.3 or 1 % increase in haemocrit) from. the 4°' day onwards

2. Reticulocytes increase with in 3'to 5 days and a reach a maximum of at 5 to 10 days, reticulocyte counts being 8% to 10% in severe anaemia
3. Haemoglobin concentration is virtually normal after 2 months of therapy. However, iron therapy should be continued for 3 to 6 months to build up iron stores. RBC counts may temporarily rise above normal before haemoglobin response. The red Cells indices may remain abnormal for sometime after the normal haemoglobin level has been restored. The microcytic population is gradually replace by a normocytic population.
4. Pica. pagophagia and other nonspecific symptoms disappear within one week of therapy. With the onset of treatment, the patient shows rapid subiective improvement with disappearance of fatigability, lasstitude and impaired cognitive functions. Of the epithelial lesions those affecting tongue and nails are most responsive to treatment. After 1-2 weeks of therapy, small filiform papillae are seen on the tongue.

   By 3 months the tongue is usually normal and koilonychia usually disappears within 3-6 months.

Prevention of IDA

There are four basic approaches to the prevention of IDA. Therefore

- Supplementation with medicinal iron
- Increase dietary iron intake.

- Control of infection and treatment of helminthiasis; and iv. For Fortification of staple food with iron.

Diet

Haem iron sources

- Muscle meat (red more than white)
- organ meat (eg. Liver)
- Fish and shell fish
- Poultry

Non-haem iron Sources

- Oatmeal, legumes (Peas, beans)
- nuts,
- Pulses,
- dried fruit,
- wholemeal,
- bread, eggs,
- Green leafy vegetables
- Iron fortified cereal foods, chocolate
- Jaggery and yeast
- Foods rich. in vitamin C in the same meal enhance iron
- Absorption
- Meal enhance iron absorption.

Self-care Procedures for Iron Deficiency Anaemia

- Eat more foods that are good sources of iron.
- concentrate on green, leaf vegetables, lean, red meat, beef liver, poultry, fish wheat germ, oysters, dried fruit and iron-fortified cereals.
- Boost iron absorption. Foods high in vitamin C- like citrus fruits, tomatoes and strawberries- help your body absorb iron from food.
- Red meat not only supplies a good amount of iron, it also increases absorption of iron from other food sources.
- Limit the use of tea. It contains tannins, substances that can. inhibit iron absorption
- Take an. iron supplement. Consult your physician for proper dosage.
- While iron is best absorbed when taken on an empty stomach, it can upset your stomach. Taking iron with meals is less upsetting to the stomach.
- Avoid antacids, phosphates (which are found in soft drinks, beer, ice cream, candy bars, etc.) and the food additive EDTA. These block iron absorption.
- Increase dietary fiber to prevent constipation.
- Avoid aspirin and products with aspirin.
- To get and/or make the best use of folic acid;

- Eat good sources of folic acid daily.
- These include vegetables like asparagus, brussels sprouts, spinach, romaine, lettuce, collard greens and broccoli.
- Black-eyed peas, cantaloupe, orange juice, oatmeal, whole grain cereals, wheat germ, liver and other organ meats are excellent sources also.
- Eat fresh, uncooked fruits and vegetables often. Don't overcook food. Heat destroys folic acid.
- Take a multi-Vitamin supplement daily that has 100% of the RDA for folic acid deficiency can lead to infertility and an increased risk of infection.

EVALUATION OF DISSERTATION TOPIC

Material & Methods

The pathological evaluation and methodological study of Vatha pandu was carried in out patients as well as inpatient department at Got. Siddha Medical College. Palayamkottai.

Selection and Eupervision;

The author had selected the 50 cases for Vatha pandu but of out of 40 cases are correlated with Vatha pandu as mentioned in yugi vaithiya chinthamani under the supervision of facilities and head of the department PG Noi Naadal.

Evaluation of Clinical Parameters :

The detailed history and clinical features of teh patients were taken carefully.

This cliniacal history contains:

- Family history
- Inclusion creteria age (16 to 70) Nutrition deficiensy, Worm infestation
- Personal history
- Socio – economic status
- History of infections disease
- History previous illness
- Clinical features of the Vatha Paandu

Clinical Symptoms

1. Flatulence
2. Low abdominal pian
3. Loss of thirst
4. Loss of appetite
5. Burning sensatin of skin
6. Hyperpigmentation vessels
7. Shivering
8. Redness eye
9. Costipation
10. Headache
11. Pallor
12. Swelling of body

Diagnosis ;

Envagai therrugal including neerkuri, neikuri manikadai nool.

The diagnosis is made on the basis of interpretation of the following Siddha principles.

- Poriyal therdhal
- Pulanal therdhal
- Vinnaadhal
- Yaakayninellakanam
- Gunam

- Changes in Udal thathukkal
- Changes in Uyir thathukkal
- Noi Utra kalam
- Noil Utra Nilam

Modern Parameters :

For further detailed study of the disease, modern parameters were used. Investigation

Routine blood : TC, DC, ESR, HB

- Peripheral smear
- Complete Haemogram

OBSERVATION AND RESULTS

Table :1. Age

S.No	Age	No of cases	Percentage
1.	17 – 30	3	6%
2.	30 – 50	14	28%
3.	50 – 70	33	66%

Out of 50 cases, 66% of old age.

Table : 2. Sex

S.No	Sex	No of cases	Percentage
1.	Male	6	12%
2.	Female	45	90%

Out of 50% of cases, 90% females are affected.

Table : 3. Occupation

S.No	Occupation	No of cases	Percentage
1.	Manual labour	12	24%
2.	Office work	10	20%
3.	Business men	-	-
4.	House wife	28	56%

Out of 50% cases, 56% House wife are affected.

Table :4. Socio Economic Status

S.No	Socio economic status	No of cases	Percentage
1.	High class	-	-
2.	Middle class	28	56
3.	Below poverty line	22	44%

Out of 50 cases, 56% are middle classes affected.

Table : 5.Personal Habits

S.No	Age	No of cases	Percentage
1.	Alcohol	7	14%
2.	Smoking	8	16%
3.	Betal nut chewer	10	20%

Out of 50 cases, 20% are Betal nut chewer

Table : 6.Diet Habits

S.No	Diet	No of cases	Percentage
1.	Vegetarian	30	60%
2.	Non-vegetarian	20	40%

Out of 50 cases 60% are vegetarian affected.

Table : 7. Seasonal Variation (Paruvakalam)

S.No	Diet	No of cases	Percentage
1.	Karkalam	12	24%
2.	Kuthirkalam	28	56%
3.	Munpanikalam	-	-
4.	Pinpanikalam	-	-
5.	Elavenilkalam	-	-
6.	Muthuvenilkalam	10	20%

On observation 56% are reported in kuthir kalam

Table :8. Thinai

S.No	Thinai	No of cases	Percentage
1.	Marutham	37	74%
2.	Kurinji	13	26%

On observation, 74% are reported in marutha.

Table :9. Kosam

S.No	Kosam	No of cases	Percentage
1.	Annamaya Kosam	50	100%

100% are affected in Annamaya Kosam.

Table :10. Symptoms

S.No	Clinical Features	No of cases	Percentage
1.	Flatulence	20	40%
2.	Abdominal pain	20	40%
3.	Thirst	23	46%
4.	Loss of appetite	48	96%
5.	Dryness of thirst	5	10%
6.	Hyperpigmentation	-	-
7.	Shievering	-	-
8.	Redness eye	4	8%
9.	Constipation	19	38%
10.	Headache	19	38%
11.	Pallor	32	64%
12.	Swelling of body	1	2%

Out of 50 cases 96% are noted in loss of appetite.

Table :11. Udalthathu Nilaigal

S.No	Udal thathukal	No of cases	Percentage
1.	Saaram	50	100%
2.	Senner	50	100%
3.	Oon	-	-
4.	Kozhuppu	-	-
5.	Enbu	-	-
6.	Moolai	-	-
7.	Sukkilam/Suronitham	-	-

Out of 50 cases 100% affected in Saaram and senner.

Table :12. Ennvagai Thervugal

S.No	Ennvagai Thervugal		No.of cases affected	Percentage
1.	Naa	1. Colour	32	64
		2. Coated	17	34
		3. Fissure	18	36
		4. Pigmentation	14	28
2.	Niram		22	44
3.	Mozhi		6	12
4.	Vizhi		20	40
5.	Sparism		-	-
6.	Malam		10	20
7.	Moothiram		4	8

8.	Naadi	Vatha Pitham	40	80
		Pitha Kapham	7	14
		Vatha Kapham	2	4
		Vatham	1	2

Out of 50 cases, 64% cases Naa affected**,** Out of 50 cases vatha pitham in mainly noted in disease.

Table :13. Neikuri (Shape of the oil)

S.No	Shape of the oil	No of cases	Percentage
1.	Muthuothunittral	25	50
2.	Muthil Azhi	5	10
3.	Muthil Aravil	4	8
4.	Azhi	8	16
5.	Azhil Aravil	4	8
6.	Muthil Aravil	1	1
7.	Azhil Muthuthil	3	6

Out of cases 50% of casesnoted muthuothunittral.

Table :14. Neikuri

S.No.	OP No.	Age/ Sex	Neikuri (shape of oil)
1	65677	60F	Salladaikan
2	66445	65F	Salladaikan
3	95496	54F	Salladaikan
4	97711	52F	Salladaikan

Out of 50, 8% of cases noted Salladaikan .

Table :15. Thegi

S.No	Thegi	No of cases	Percentage
1.	Vatha thegi	28	56%
2.	Pitha thegi	17	34%
3.	Kapha thegi	4	8%
4.	Pitha thegi	1	2%

Out of cases 50 cases, 56% are present in Vatha Thegai.

Manikadai Nool

S.No	Wrist Circumference	No of cases	Percentage
1.	7-8	2	4%
2.	8-8 ¾	38	76%
3.	9 -9 ½	7	14%
4.	10-10	3	6%

Out 50 cases 76% cases are present in 8 – 8 ¾ Manikadai. Out of 50 cases 8% Salladaikan.

CLASSIFICATION UYIR THATHUKKAL

Vatham

S.No	Vatham	No of Cases	Percentage %
1	Pranan	21	42
2	Abanan	10	20
3	Viyanan	49	98
4	Udhanan	-	-
5	Samaanan	50	100
6	Nagan	1	2
7	Koorman	20	40
8	Kirukaran	-	-
9	Devathathan	1	2
10	Thananjeyan	-	-

Out of 50 cases, 100% of cases affected Samaanan, 98% of cases affected Viyanan, 42% affected Pranan.

Pitham

S.No	Pitham	No of Cases	Percentage %
1	Anarpittham	24	48
2	Ranjagam	50	100
3	Saathagam	45	40
4	Aalosagam	-	-
5	Praasagam	-	-

Out of 50 cases, 100% cases affected Ranjagam

Kabam

S.No	Kabam	No of Cases	Percentage %
1	Avalambagam	18	36
2	Kilethagam	49	98
3	Pothagam	-	-
4	Tharpagam	-	-
5	Sandhigam	17	34

Out of 50 cases, 98% of cases affected Kilethagam

INTERPRETATION OF UYIRTHATHUKKAL

Case No.	OP.No	Age	Sex	VALI										AZHAL					KAPHAM				
				Pr	Ab	UD	VI	SA	NA	KO	KI	DE	Thj	PA	Ro	ST	Aa	PS	AV	KI	PO	Th	Sd
1	55766	49	F	NA	NA	NA	A	A	NA	NA	NA	NA	NA	A	A	NA	NA	NA	NA	A	NA	NA	NA
2	57413	50	F	A	NA	NA	A	A	NA	NA	NA	NA	NA	A	A	NA	NA	NA	NA A	A	NA	NA	A
3	60330	62	F	NA	NA	NA	NA	A	A	NA	NA	NA	NA	A	A	NA	NA	NA	NA	NA	NA	NA	NA
4	60686	63	F	NA	NA	NA	A	A	NA	A	NA	NA	NA	A	A	NA	NA	NA	NA	A	NA	NA	A
5	62169	54	F	NA	NA	NA	A	A	NA	A	NA	NA	NA	A	A	NA	NA	NA	NA	A	NA	NA	NA
6	62205	52	F	NA	NA	NA	A	A	NA	NA	NA	NA	NA	A	A	A	NA	NA	NA	A	NA	NA	NA
7	62206	60	F	A	NA	NA	A	A	NA	A	NA	NA	NA	A	A	A	NA	NA	A	A	NA	NA	NA
8	63029	62	F	A	NA	NA	A	A	NA	A	NA	NA	NA	A	A	A	NA	NA	A	A	NA	NA	A
9	65266	44	M	A	NA	NA	A	A	NA	NA	NA	NA	NA	A	A	A	NA	NA	A	A	NA	NA	NA
10	65677	60	F	A	NA	NA	A	A	NA	A	NA	NA	NA	A	A	A	NA	NA	A	A	NA	NA	NA
11	66445	65	F	A	NA	NA	A	A	NA	A	NA	NA	NA	A	A	A	NA	NA	A	A	NA	NA	A
12	71404	38	F	NA	A	NA	A	A	NA	NA	NA	NA	NA	NA	A	A	NA	NA	NA	A	NA	NA	NA
13	72184	53	F	NA	NA	NA	A	A	NA	NA	NA	NA	NA	NA	A	A	NA	NA	NA	A	NA	NA	A
14	72134	33	F	NA	A	NA	A	A	NA	NA	NA	NA	NA	NA	A	A	NA	NA	NA	A	NA	NA	-
15	73421	60	F	A	NA	NA	A	A	NA	A	NA	NA	NA	NA	A	A	NA	NA	NA	A	NA	NA	A
16	73908	33	F	NA	NA	NA	A	A	NA	NA	NA	NA	NA	NA	A	A	NA	NA	NA	A	NA	NA	NA
17	76777	60	M	A	A	NA	A	A	NA	A	NA	NA	NA	NA	A	A	NA	NA	A	A	NA	NA	A
18	76649	70	M	A	A	NA	A	A	NA	A	NA	NA	NA	A	A	A	NA	NA	A	A	NA	NA	A
19	76633	29	F	NA	A	NA	A	A	NA	NA	NA	NA	NA	NA	A	A	NA	NA	NA	A	NA	NA	NA
20	98199	38	F	NA	NA	NA	A	A	NA	NA	NA	NA	NA	NA	A	A	NA	NA	NA	A	NA	NA	NA
21	81500	65	F	A	A	NA	A	A	NA	A	NA	NA	NA	A	A	A	NA	NA	A	A	NA	NA	A
22	81499	37	F	NA	NA	NA	A	A	NA	NA	NA	NA	NA	NA	A	A	NA	NA	NA	A	NA	NA	NA
23	82211	50	F	NA	NA	NA	A	A	NA	NA	NA	NA	NA	NA	A	A	NA	NA	NA	A	NA	NA	NA
24	82730	52	F	NA	NA	NA	A	A	NA	NA	NA	NA	NA	A	A	A	NA	NA	NA	A	NA	NA	NA
25	83256	50	F	NA	A	NA	A	A	NA	NA	NA	NA	NA	NA	A	A	NA	NA	NA	A	NA	NA	NA
26	83255	59	M	NA	NA	NA	A	A	NA	NA	NA	NA	NA	NA	A	A	NA	NA	NA	A	NA	NA	NA
27	86829	37	F	NA	NA	NA	A	A	NA	NA	NA	NA	NA	A	A	A	NA	NA	NA	A	NA	NA	NA

28	88620	56	F	NA	NA	NA	A	A	NA	NA	NA	NA	NA	NA	A	A	NA	NA	NA	A	NA	NA	NA
29	87102	69	F	A	NA	NA	A	A	NA	A	NA	NA	NA	A	A	A	NA	NA	A	A	NA	NA	A
30	87155	52	F	NA	NA	NA	A	A	NA	NA	NA	NA	NA	NA	A	A	NA	NA	NA	A	NA	NA	NA
31	89524	68	M	A	NA	NA	A	A	NA	A	NA	NA	NA	A	A	A	NA	NA	A	A	NA	NA	A
32	89622	65	M	A	NA	NA	A	A	NA	A	NA	NA	NA	A	A	A	NA	NA	A	A	NA	NA	A
33	90101	55	F	NA	NA	NA	A	A	NA	NA	NA	NA	NA	NA	A	A	NA	NA	NA	A	NA	NA	A
34	90954	67	F	A	A	NA	A	A	NA	A	NA	NA	NA	A	A	A	NA	NA	NA	A	NA	NA	NA
35	92267	43	F	NA	NA	NA	A	A	NA	NA	NA	NA	NA	NA	A	A	NA	NA	NA	A	NA	NA	NA
36	93170	69	F	A	A	NA	A	A	NA	A	NA	NA	NA	A	A	A	NA	NA	A	A	NA	NA	NA
37	93114	65	F	A	NA	NA	A	A	NA	A	NA	NA	NA	A	A	A	NA	NA	A	A	NA	NA	NA
38	93872	65	F	A	NA	NA	A	A	NA	A	NA	NA	NA	A	A	A	NA	NA	A	A	NA	NA	A
39	94300	68	F	A	NA	NA	A	A	NA	A	NA	NA	NA	A	A	A	NA	NA	A	A	NA	NA	A
40	94696	66	F	A	NA	NA	A	A	NA	A	NA	NA	NA	A	A	A	NA	NA	A	A	NA	NA	A
41	95496	54	F	NA	NA	NA	A	A	NA	NA	NA	NA	NA	NA	A	A	NA	NA	NA	A	NA	NA	NA
42	95740	70	F	A	NA	NA	A	A	NA	A	NA	NA	NA	A	A	A	NA	NA	A	A	NA	NA	A
43	96507	37	F	NA	NA	NA	A	A	NA	NA	NA	NA	NA	NA	A	A	NA	NA	NA	A	NA	NA	NA
44	97711	52	F	NA	NA	NA	A	A	NA	NA	NA	NA	NA	NA	A	A	NA	NA	NA	A	NA	NA	NA
45	97972	62	F	NA	NA	NA	A	A	NA	NA	NA	NA	NA	NA	A	A	NA	NA	NA	A	NA	NA	NA
46	97971	57	F	NA	NA	NA	A	A	NA	NA	NA	NA	NA	NA	A	A	NA	NA	NA	A	NA	NA	NA
47	98889	50	F	NA	NA	NA	A	A	NA	NA	NA	NA	NA	NA	A	A	NA	NA	NA	A	NA	NA	NA
48	100899	41	F	NA	NA	NA	A	A	NA	NA	NA	NA	NA	NA	A	A	NA	NA	NA	A	NA	NA	NA
49	100557	51	F	NA	A	NA	A	A	NA	NA	NA	NA	NA	NA	A	A	NA	NA	NA	A	NA	NA	NA
50	102170	65	F	A	NA	NA	A	A	NA	NA	NA	NA	NA	NA	A	A	NA	NA	NA	A	NA	NA	NA

Pr- Praanan
Ab - Abaanan
Ud - Udaanan
Vi - Viyanan
Sa - Samaanan

A - Affected
NA - Not affected

Na - Nagan
Ko - Kooram
Ki - Kirukaran
De - Devadhathan
Thj - Thanajeyan

Pa - Pasakam
Ra - Ranjakam
St - Sathagam
St - Sathagam
Aa - Aalo sagam
Ps - Prasagam

Av - Avalambagam
Ki - Kiletham
Po - Pothagam
Th - Tharpagam
Sd - Sandhigam

INTERPRETATION OF UDALTHAADUKKAL

S.No	OP	Age	Sex	Saaram	Senneer	Oon	Kozhuppu	Enbu	Moolai	Sukkilam/ Srontham
1	55766	49	F	A	A	NA	NA	NA	NA	NA
2	57413	50	F	A	A	NA	NA	NA	NA	NA
3	60330	52	F	A	A	NA	NA	NA	NA	NA
4	60686	63	M	A	A	NA	NA	NA	NA	NA
5	62169	54	F	A	A	NA	NA	NA	NA	NA
6	62205	52	F	A	A	NA	NA	NA	NA	NA
7	62206	60	F	A	A	NA	NA	NA	NA	NA
8	63029	62	F	A	A	NA	NA	NA	NA	NA
9	65266	44	M	A	A	NA	NA	NA	NA	NA
10	65677	60	F	A	A	NA	NA	NA	NA	NA
11	66445	65	F	A	A	NA	NA	NA	NA	NA
12	71404	38	F	A	A	NA	NA	NA	NA	NA
13	72184	53	F	A	A	NA	NA	NA	NA	NA
14	12134	33	F	A	A	NA	NA	NA	NA	NA
15	73421	60	F	A	A	NA	NA	NA	NA	NA
16	73908	33	F	A	A	NA	NA	NA	NA	NA
17	76777	60	M	A	A	NA	NA	NA	NA	NA
18	76649	70	M	A	A	NA	NA	NA	NA	NA
19	76633	29	F	A	A	NA	NA	NA	NA	NA
20	78199	38	F	A	A	NA	NA	NA	NA	NA
21	81500	65	F	A	A	NA	NA	NA	NA	NA
22	81499	37	F	A	A	NA	NA	NA	NA	NA
23	82211	50	F	A	A	NA	NA	NA	NA	NA
24	82730	52	F	A	A	NA	NA	NA	NA	NA
25	83256	50	F	A	A	NA	NA	NA	NA	NA
26	83255	59	M	A	A	NA	NA	NA	NA	NA
27	86829	37	F	A	A	NA	NA	NA	NA	NA
28	88620	56	F	A	A	NA	NA	NA	NA	NA
29	87102	69	F	A	A	NA	NA	NA	NA	NA
30	87155	52	F	A	A	NA	NA	NA	NA	NA

31	89524	68	M	A	A	NA	NA	NA	NA	NA
32	89622	65	F	A	A	NA	NA	NA	NA	NA
33	90101	55	F	A	A	NA	NA	NA	NA	NA
34	90954	67	F	A	A	NA	NA	NA	NA	NA
35	92267	43	F	A	A	NA	NA	NA	NA	NA
36	93170	67	F	A	A	NA	NA	NA	NA	NA
37	93114	65	F	A	A	NA	NA	NA	NA	NA
38	93872	65	F	A	A	NA	NA	NA	NA	NA
39	94300	68	F	A	A	NA	NA	NA	NA	NA
40	94696	66	F	A	A	NA	NA	NA	NA	NA
41	95496	54	M	A	A	NA	NA	NA	NA	NA
42	95470	74	F	A	A	NA	NA	NA	NA	NA
43	96507	37	F	A	A	NA	NA	NA	NA	NA
44	97711	52	F	A	A	NA	NA	NA	NA	NA
45	97972	62	F	A	A	NA	NA	NA	NA	NA
46	97971	62	F	A	A	NA	NA	NA	NA	NA
47	98889	50	F	A	A	NA	NA	NA	NA	NA
48	100899	41	F	A	A	NA	NA	NA	NA	NA
49	100557	51	F	A	A	NA	NA	NA	NA	NA
50	102170	65	F	A	A	NA	NA	NA	NA	NA

A - Affected NA - Non Affected

INTERPRETATION OF ENNVAGAI THERVUGAL

S.No	O.P.No	Age/sex	Colour	fissure	coatecl	pigmentation	Niram	Mozhi	Vizhi	Sparism	Malam	Moothiram		Naadi	Thagi		
												Neerkuri	Neikuri			Rt	Lt
1	55766	49F	NA	A	P	A	A	NA	NA	NA	NA	Straw yellow	MN	VP	P	8 1/2	8 1/4
2	57413	50F	A	P	P	A	NA	NA	NA	NA	NA	Straw yellow	MN	VP	V	8 3/4	8 1/4
3	60330	52F	A	P	A	A	NA	NA	NA	NA	NA	Straw yellow	MA	VP	V	8 1/4	8
4	60686	63M	NA	P	A	P	A	NA	A	NA	NA	Straw yellow	MN	VP	P	8	8
5	62169	54F	NA	P	P	A	A	NA	A	NA	NA	Straw yellow	MN	VP	P	8	8
6	62205	52F	A	P	A	P	NA	NA	NA	NA	NA	Straw yellow	MN	VP	V	8	8
7	62206	60F	A	A	P	P	NA	NA	NA	NA	NA	Straw yellow	MAN	VP	V	10	10
8	63029	62F	A	A	P	A	NA	NA	NA	NA	NA	Straw yellow	MA	VP	P	9	9
9	65266	44M	NA	P	P	P	-	NA	NA	NA	NA	Straw yellow	A	VP	P	8	8
10	65677	60F	NA	P	P	P	NA	NA	A	NA	NA	Straw yellow	MN	PK	V	8 1/4	8
11	66445	65F	NA	A	A	A	A	NA	NA	NA	NA	Straw yellow	MA	VP	P	7 1/2	7 1/4
12	71404	38F	NA	A	P	P	A	AX	A	NA	NA	Straw yellow	MN	VP	V	8	8
13	72184	53F	NA	L	P	P	NA	NA	NA	NA	NA	Straw yellow	MN	VP	V	10	10
14	72134	33F	NA	A	A	P	A	NA	A	NA	A	Straw yellow	MN	VP	V	8	8
15	73421	60F	NA	A	P	A	NA	NA	NA	NA	NA	Straw yellow	A	VP	V	9	9

16	73908	83F	A	A	A	A	A	NA	A	NA	A	Straw yellow	AAN	VP	V	9	9
17	76777	60M	NA	A	A	A	A	NA	A	NA	A	Straw yellow	MN	PK	K	8	8
18	76649	70M	A	P	A	A	A	A	A	NA	A	Straw yellow	MAN	PK	P	8	7 3/4
19	76633	29F	A	A	P	A	A	A	A	NC	A	Straw yellow	A	PK	P	9	9
20	78199	38F	NA	A	A	P	A	A	A	NA	NA	Straw yellow	MN	PK	P	8	8
21	81500	65F	NA	P	P	A	A	NA	A	NA	NA	Straw yellow	A	PK	V	9	8
22	81499	37F	NA	A	P	A	NA	NA	NA	NA	A	Straw yellow	MAN	PK	V	9 1/2	8
23	82211	50F	A	A	A	A	NA	NA	NA	NA	NA	Straw yellow	MA	VP	V	8	8
24	82730	52F	A	P	A	P	NA	NA	NA	NA	NA	Straw yellow	MA	VP	V	8	8
25	83256	50F	A	P	P	A	A	NA	A	NA	A	Straw yellow	MN	VK	V	8	7 3/4
26	83255	59M	NA	A	P	A	A	A	A	NA	NA	Straw yellow	AAN	VP	K	8	8
27	86829	37F	A	A	A	A	NA	NA	NA	NA	NA	Straw yellow	MA	V	P	8	8
28	88620	56F	A	A	P	A	NA	NA	NA	NA	NA	Straw yellow	MN	VP	K	8 1/2	8
29	87102	69F	A	P	P	A	NA	NA	NA	NA	NA	Straw yellow	MN	VP	P	8	8
30	87155	52F	A	P	A	A	A	NA	P	NA	NA	Straw yellow	MN	VP	P	8	8
31	89524	68M	NA	A	P	P	NA	NA	NA	NA	NA	Straw yellow	MN	VP	V	9	9

32	89622	65M	NA	A	P	A	NA	NA	NA	NA	NA	Straw yellow	A	VP	V	8	8
33	90101	55F	A	P	A	A	NA	NA	NA	NA	NA	Straw yellow	MN	VP	V	8	8
34	90954	67F	A	P	A	A	NA	NA	NA	NA	A	Straw yellow	MN	VP	V	8	8
35	92267	43F	A	A	A	A	A	NA	A	NA	NA		AAN	VP	P	8	8
36	93170	69F	NA	A	P	A	NA	NA	NA	NA	A	Straw yellow	A	VP	P	8	8
37	93114	65F	A	P	P	A	NA	A	NA	NA	NA	Straw yellow	MN	VP	P	7 3/4	8 1/2
38	93872	65F	A	P	A	A	A	NA	A	NA	NA	Straw yellow	A	VP	V	8	8
39	94300	68F	A	P	A	A	NA	NA	NA	NA	NA	Straw yellow	AAN	VP	V	8	8
40	94696	66F	A	-	A	P	A	NA	A	NA	NA	Straw yellow	MN	VP	P	8	8
41	95496	54F	A	P	A	P	NA	NA	NA	NA	NA	Straw yellow	AMN	VP	V	8	8
42	95740	70F	A	P	A	A	A	NA	A	NA	NA	Straw yellow	MN	VP	PV	8	8
43	96507	37F	A	A	A	A	NA	NA	NA	NA	NA	Straw yellow	MN	VP	V	8	8 1/4
44	97711	52F	A	A	A	P	NA	NA	NA	NA	NA	Straw yellow	AAN	PV	V	8	7 3/4
45	97972	62F	A	A	A	A	NA	NA	NA	NA	NA	Straw yellow	A	VK	K	8	8
46	97971	57F	NA	A	P	P	NA	NA	NA	NA	NA	Straw yellow	A	VP	P	8	8
47	98889	50F	A	A	A	A	NA	NA	NA	NA	NA	Straw yellow	MN	VP	V	9	9

48	100899	41F	A	P	P	A	A	NA	A	NA	NA	Straw yellow	MN	VP	V	8	8
49	100557	51F	A	A	A	A	A	A	A	NA	A	Straw yellow	AAN	PV	P	8 1/4	8 1/4
50	102170	65F	A	A	A	A	A	NA	A	NA	NA	Straw yellow	MN	VP	V	8	8

A - Affected
NA - Non Affected

MN - Mthuothu nitral
MA -Muthil Azhi
MAN - Muthil Arali
A - Azhi

AAN - Azhil Aravil
AMN - Azhil Muthu Aravil

VP - Vatha Pitham
VK - Vatha Kapham
PK - Pitha Kabam
P -Pitham
V - Vatham
PV - Pitha Vatham

P - Present

LABORATORY INVESTIGATIONS

S.No.	OP No.	TC cells/ cumm	Blood investigations							Biochemical			Urine Analysis			Motion test		
			DC					ESR		BS (R) mgm	Urea mgms	S.Cole strol mgm,	Albumin	Sugar	Deposiy	Ova	Cyst	Occult blood
			P	L	E	B	M	1/2	1									
1	55766	8,300	68	28	2	2	0	20	41	100	16	186	Nil	Nil	2-4 puscells	Nil	Nil	Nil
2	57413	9,300	68	28	2	2	0	7	18	120	18	156	Nil	Nil	(HPE) 2-3	Nil	Nil	Nil
3	60330	7,400	63	32	3	2	0		30	120	20	157	Nil	Nil	2-4	Nil	Nil	Nil
4	60686	8,000	65	41	2	2	0		20	100	16	170	Nil	Nil	1-2	Nil	Nil	Nil
5	62169	8,100	55	41	3	2	0		22	110	25	156	Nil	Nil	NAD	Nil	Nil	Nil
6	62205	6,500	57	38	3	2	0		32	120	30	170	Nil	Nil	1-2	Nil	Nil	Nil
7	62206	6,100	57	38	3	2	0		22	130	32	160	Nil	Nil	2-3	Nil	Nil	Nil
8	63029	8,900	66	32	2	0	0	12	24	118	13	170	Nil	Nil	1-2	Nil	Nil	Nil
9	65266	8,200	56	40	2	2	0		20	120	34	150	Nil	Nil	1-2	Nil	Nil	Nil
10	65677	8,000	54	42	2	2	0		30	110	25	160	Nil	Nil	1-3	Nil	Nil	Nil
11	66445	7,900	66	31	3	0	0	8	20	86	19	156	Nil	Nil	2-3	Nil	Nil	Nil
12	71404	7,900	69	28	3	0	0	14	30	88	20	155	Nil	Nil	NAD	Nil	+	Positive
13	72184	8,700	66	32	2	0	0	5	12	130	19	216	Nil	Nil	NAD	Nil	Nil	Nil
14	72134	8,100	60	33	5	2	0		20	120	36	190	Nil	Nil	1-2	Nil	+	Positive
15	73421	8,300	54	42	2	2	0	7	15	111	16	195	Nil	Nil	3-4	Nil	Nil	Nil
16	73908	9,200	59	35	6	0	0	35	72	96	14	167	Nil	Nil	1-2	Nil	Nil	Nil
17	76777	7,600	63	34	3	0	0	8	20	68	25	190	Nil	Nil	NAD	Nil	Nil	Nil
18	76649	6,800	63	34	3	0	0	80	120	117	61	117	Nil	Nil	NAD	Nil	Nil	Nil
19	76633	7,700	56	40	4	0	0	10	22	90	16	186	Nil	Nil	NAD	Nil	+	Positive
20	78199	4,700	55	41	2	2	0		30	120	30	170	Nil	Nil	1-2	Nil	Nil	Nil
21	81500	10,800	52	42	4	2	0		22	171	39	200	Nil	Nil	NAD	Nil	Nil	Nil
22	81499	6,000	56	40	4	0	0	8	18	88	18	201	Nil	Nil	1-2	Nil	Nil	Nil
23	82211	7,200	60	33	2	0	0		20	120	20	150	Nil	Nil	1-2	Nil	Nil	Nil
24	82730	7,400	63	32	3	2	0		45	91	16	208	Nil	Nil	NAD	Nil	Nil	Nil
25	83256	8,000	58	38	2	2	0	12	25	120	26	150	Nil	Nil	1-4	Nil	Nil	Nil
26	83255	6,900	50	44	4	2	0	45	90	118	31	186	Nil	Nil	1-3	Nil	Nil	Nil
27	86829	7,900	56	40	2	2	0		10	106	18	143	Nil	Nil	3-5	Nil	Nil	Nil
28	88620	8,500	50	46	2	2	0		20	75	31	150	Nil	Nil	1-2	Nil	Nil	Nil
29	87102	8,300	56	40	2	2	0		45	84	41	152	Nil	Nil	1-2	Nil	Nil	Nil

30	87155	6,900	57	40	3	0	0	3	7	135	21	160	Nil	Nil	1-2	Nil	Nil	Nil
31	89524	8,300	58	38	2	2	0	8	18	1114	23	170	Nil	Nil	NAD	Nil	Nil	Nil
32	89622	8,700	67	31	2	0	0	8	20	134	38	200	Nil	Nil	3-5	Nil	Nil	Nil
33	90101	8,700	68	30	2	0	0	15	32	84	38	201	Nil	Nil	3-4	Nil	Nil	Nil
34	90954	7,920	55	41	2	2	0	5	10	100	25	170	Nil	Nil	2-5	Nil	Nil	Nil
35	92267	3,000	64	32	2	2	0	30	60	130	38	160	Nil	Nil	2-4	Nil	Nil	Nil
36	93170	9,800	67	31	2	0	0	8	20	120	30	170	Nil	Nil	NAD	Nil	Nil	Nil
37	93114	7,900	75	20	3	2	0	10	22	130	32	180	Nil	Nil	1-2	Nil	Nil	Nil
38	93872	8,000	51	43	3	3	0		30	103	44	170	Nil	Nil	1-3	Nil	Nil	Nil
39	94300	6,900	63	35	2	2	0	25	55	81	31	179	Nil	Nil	2-3	Nil	Nil	Nil
40	94696	8,800	49	48	3	0	0	48	100	93	38	190	Nil	Nil	2-3	Nil	Nil	Nil
41	95496	9,000	69	27	4	0	0	2	5	114	23	158	Nil	Nil	1-3	Nil	Nil	Nil
42	95740	10,000	52	44	4	0	0	40	82	79	20	174	Nil	Nil	2-3	Nil	Nil	Nil
43	96507	8,600	61	31	7	1	0		70	130	30	170	Nil	Nil	1-2	Nil	Nil	Nil
44	97711	8,600	50	46	2	2	0	12	20	120	36	190	Nil	Nil	1-2	Nil	Nil	Nil
45	97972	9,700	53	40	7	0	0	15	32	85	24	206	Nil	Nil	2-3	Nil	Nil	Nil
46	97971	7,000	64	35	1	0	0	20	45	178	20	168	Nil	Nil	2-3	Nil	Nil	Nil
47	98889	9,700	70	28	2	0	0	11	21	130	39	156	Nil	Nil	1-3	Nil	+	Positive
48	100899	9,200	58	38	4	0	0	13	21	111	22	204	Nil	Nil	1-2	Nil	Nil	Nil
49	100557	9,500	64	30	6	0	0	7	16	84	31	150	Nil	Nil	1-2	Nil	Nil	Nil
50	102170	9,000	70	27	30	0	0	25	55	190	25	192	Nil	Nil	1-3	Nil	Nil	Nil

COMPLETE HAEMOGRAM

S.No	OP.No	Age/Sex	RBC millions	HB% GM	PCV (%)	MCV (FL)	MCH (PA)	MCHC	Platelets count (lakhs/cmm)
1	55766	49F	4.22	9.8	34	76	25.4	32.1	2.9
2	57413	50F	4.47	10	35	78.3	22.4	28.6	3.54
3	60330	52F	4.33	10	35	76.8	25.4	32.1	2.81
4	60686	63M	4.38	9.0	30.1	68.7	20.5	29.9	2.77
5	62169	54F	3.6	9.5	29.1	75.8	26.9	32.7	3.1
6	62205	52F	3.61	9.6	29.4	74.8	33.3	32.1	2.46
7	62206	60F	3.60	9.7	29.1	75.8	26.9	33.3	2.4
8	63029	62F	3.62	9.8	35	75.1	26.8	33.3	2.46
9	65266	44M	4.20	9.0	27.5	65.5	21.4	32.7	3.02
10	65677	60F	4.30	9.2	29	66.5	26	32.1	3.04
11	66445	65F	3.60	9.7	.29.1	70.8	26.9	33.3	2.46
12	71404	38F	4.04	7.4	27.4	67.8	18.3	27.0	4.33
13	72184	53F	4.33	9.3	31.0	71.6	21.5	30	3.57
14	72134	33F	4.13	8	26.6	74.7	25.5	29.6	3.28
15	73421	60F	4.30	9.5	26.5	65.5	22.4	32.7	3.04
16	73908	33F	4.20	9.0	27.5	65.5	21.4	32.7	3.02
17	76777	60M	3.42	4.8	20.1	58.6	18.1	23.9	3.92
18	76649	70M	3.14	7.9	26.6	84.7	25.2	29.7	3.28
19	76633	29F	4.29	6.7	24.8	57.8	15.6	27	3.17
20	78199	38F	3.43	4.8	20.1	58.6	14.0	23.9	3.82
21	81500	65F	4.18	10.5	37.4	75	26.1	32.1	2.58
22	81499	37F	4.63	10.1	37	75.1	26	32.1	2.1
23	82211	50F	3.90	10	31	74.1	25.3	32.2	2.82
24	82730	52F	3.96	10	31.2	78.8	25.3	32.1	2.81
25	83256	50F	4.29	8.5	26.5	65	21	31.7	3.1
26	83255	59M	4.01	6.5	25	65.1	19.3	26	3
27	86829	37F	4.41	9.8	30	75	23.9	32.1	2.38

28	88620	56F	4.04	10	30.2	75.3	24.9	33.1	2.38
29	87102	69F	3.76	10	30.1	75	26.6	32.1	3.17
30	87155	52F	4.02	9.0	30.2	68.7	20.1	29.9	2.66
31	89524	68M	4.01	10	31.2	76	25.9	32.1	2.48
32	89622	65F	4.04	10	30.1	74.3	24.8	33.1	2.28
33	90101	55F	4.01	10	30.2	75.3	24.9	33.1	2.38
34	90954	67F	4.02	9.8	30	74	25.8	32.1	3.0
35	92267	43F	1.69	2.6	10.5	62.1	15.4	24.8	1.56
36	93170	69F	4.16	10.8	34.2	75	24.7	32.5	3.01
37	93114	65F	3.12	5	18	57	16.0	27.8	3.47
38	93872	65F	4.33	11	35	80.8	25.4	31.4	1.31
39	94300	68F	4.01	10	31.1	74	24.2	32.1	2.28
40	94696	66F	4.02	9	30.2	68.8	25.1	29.9	2.66
41	95496	54M	4.05	10	30.1	73.1	25.2	32.1	2.38
42	95740	70F	4.09	10.0	31.9	78.0	24.4	31.3	2.45
43	96507	37F	4.01	10.0	34.8	74.9	24.4	28.7	3.714
44	97711	52F	4.03	9	30.3	68.5	75	31.1	2.65
45	97972	62F	4.05	9	31.3	67.5	75.1	31.2	3.1
46	97971	57F	4.01	9	31	66.1	21.1	29.8	2.68
47	98889	50F	4.03	10	31.1	74.1	26.1	31.1	2.79
48	100899	41F	3.80	9.8	29.4	75.4	25	30.1	3.06
49	100557	51F	4.24	6	24.8	57.8	15.6	27	3.16
50	102170	65F	4.85	8	28	65	18.3	27	2.95

PERIPHERAL SMEAR

S.No.	OP No.	Results
1	55766	Microcytic hypochromic anaemia
2	57413	Microcytic hypochromic anaemia
3	60330	Microcytic hypochromic anaemia
4	60686	Microcytic hypochromic anaemia
5	62169	Microcytic hypochromic anaemia
6	62205	Microcytic hypochromic anaemia
7	62206	Microcytic hypochromic anaemia
8	63029	Microcytic hypochromic anaemia
9	65266	Microcytic hypochromic anaemia
10	65677	Microcytic hypochromic anaemia
11	66445	Microcytic hypochromic anaemia
12	71404	Microcytic hypochromic anaemia
13	72184	Microcytic hypochromic anaemia
14	72134	Microcytic hypochromic morphology
15	73421	Microcytic hypochromic morphology
16	73908	Microcytic hypochromic morphology
17	76777	Microcytic hypochromic morphology
18	76649	Microcytic hypochromic morphology
19	76633	Microcytic hypochromic morphology
20	98199	Microcytic hypochromic morphology
21	81500	Macrocytic Normochromic anaemia
22	81499	Microcytic hypochromic morphology
23	82211	Microcytic hypochromic morphology
24	82730	Microcytic hypochromic morphology
25	83256	Microcytic hypochromic morphology
26	83255	Microcytic hypochromic morphology
27	86829	Microcytic hypochromic morphology
28	88620	Microcytic hypochromic morphology
29	87102	Macrocytic normochromic anaemia

30	87155	Macrocytic normochromic anaemia
31	89524	Normocytic Normochromic morphology
32	89622	Normocytic Normochromic morphology
33	90101	Macrocytic normochromic anaemia
34	90954	Normocytic Normochromic morphology
35	92267	Microcytic hypochromic morphology
36	93170	Microcytic hypochromic morphology
37	93114	Microcytic hypochromic morphology
38	93872	Microcytic hypochromic morphology
39	94300	Microcytic hypochromic morphology
40	94696	Macrocytic normochromic anaemia
41	95496	Normocytic Normochromic morphology
42	95740	Microcytic hypochromic morphology
43	96507	Macrocytic normochromic anaemia
44	97711	Microcytic hypochromic morphology
45	97972	Microcytic hypochromic morphology
46	97971	Microcytic hypochromic morphology
47	98889	Normocytic Normochromic morphology
48	100899	Microcytic hypochromic morphology
49	100557	Microcytic hypochromic morphology
50	102170	Microcytic hypochromic morphology

நோய்கணிப்பு விவாதம்

பித்த பாண்டு

"வாமென்ற மேனியெல்லா மஞ்சளித்து
மகாவெளுப்பு உண்டாகி மந்தக் கண்ணாம்
தாமென்ற தாகமொரு மூர்ச்சையாகும்
தனிவாயில் மிதைபோற் நானுரைக்கும்
நோமன்ற நெஞ்சு முடி தானு முண்டாய்
நெருக்கியே மூச்சு முட்டது வேயாதம்
கேமென்ற கிறுகிறுத்து வாய் கைப்பாதம்
கிளர்பித்த பாண்டுவெனக் கீறலாமே"

In Pitha Pandu, Eventhough Yellow Colouration of body, Pallor present, dysponea, chest discomfort, giddiness, but the special symptoms of vatha pandu such as loss of appetite, abdominal pain, hyperpigmentation present.

ஐய பாண்டு

"கீறியதோர் நரம்புதோல் மிக வெளுப்பு
கிளர் நாவு உப்புரைத்த மயிர்க் கூச்சாதம்
வாறியதோர் வாத்தியாங் குரலும்கம்பும்
மகத்தான தும்மலுடன் கோழையாகும்
ஈறியதோ ரிருலொடு மயக்க முண்டாம்
இடுப்பசதி யிந்திரிய நஷ்டமாதம்
சீறியதோர் சோபமோடு தாமாகும்

சிலேட்டுமத்தின் யிண்டெனச் செய்யும்."

The features are vomiting, of voice, sneezing, cough expectoration, buch ache. The special features are loss of appetite, hyperpigmentation and low abdominal pain are not present.

Vivatha Noigal	Present Symptoms	Absent symptom
Pitha Pandu	Yellow discolouation of body, dysponea, giddiness, chest discomfort	Loss of appetite, abdominal pain, hyperpigmentation
Jya Pandu	Cough expectoration sneezing, low backache, vomiting	Loss of appetite, abdominal pain hyperpigmentation.

DISCUSSION

Vaatha Pandu is commonest in the world. It is mainly due to deficiency, worm intestation and, chronic blood loss. The author has selected 50 cases for out of 40 for the observation study on vaatha pandu. All patients were under gone investigations by both siddha as well as modern parameters.

In the following observation results of out come of for vaatha pandu is discussed related to following headings.

Observation study:

1. Age: Middle age, and old age cases are affected.
2. Sex: Female cases are affected than male.
3. Socio economic and diet habits affects low poverty middle class due to inadequate nutrition, poor hygiene.
4. The disease mainly due to beta nut chewer.
5. The disease mainly affects the vegetarian
6. The disease mainly noted in kuthir kalam + Vatha Pitham Naadi
7. Some cases noted in vatham kapha nadi
8. Symptoms

   The decrease mainly present on loss of appetite abdominal pain flatuluence, loss of thirst.

9. Manikadai Nool

In most of cases, manikadai is noted in 8 – 8 ¾ wrist circumference.

10.Neikuri:

- All most cases, the neerkuri is muthuothunittral.
- In few cases, Gauthamar's literature salladaikanpol paraval is noted.

Interpretation of Siddha Parameters:

Parameter changes in Uyirthathukkal

1. Pranan	:	affected (Dysponea)
2. Abaanan	:	affected (constipation diarrhea)
3. Samaanan	:	Affected (Loss of appetite impaired absorption)
4. Viyanan	:	Affected (Hyperpigmentation bodyache)
		Pitham
Anar pitham	-	affected (loss of appetite)
Ranjagam	-	affected (Pallor)
Sadhagam	-	inactivated function of the body

Kapham

Kiletham	:	affected (delayed digestion)

Interpretation of Udal thathukkal

1. Saaram	:	affected (weakness)
2. Senneer	:	affected (Pallor of skin and mucous membrane)

Interpretation of Envagai Thervu

1. Naa	:	Affected (Coated, Center tissue, Black pigmentation)
2. Vizhi	:	Affected (Pallor)
3. Malam	:	Affected (Constipation Diarrhoea)

INTERPRETATION OF MODERN CLINICAL PARAMETERS

The author had done the physical examination detailed history. The author evaluated cases in physical hematological investigations.

Manual Examination:

Pallor is noted in most of the cases

Laboratory Investigations:

Haemogram:

1. Haematocrit (PCV), MCV MCH is decreased in major cases.
2. PCV, MCV, MCH, MCHC is increased in few cases.
3. PCV, MCV, MCH & MCHC is normal in few cases.

Peripheral smear:

1. Microcytic hypochronic anaemia is observed in major cases.
2. Normocytic Normochronic and Macrocytic anaemia is noted in few cases.

SUMMARY

The author selected the topic by detailed history, clinical examination. The author had selected the cases of vatha pandu.

Vatha Pandu is caused by nutritional deficiency, worm infestations and natural urges. The author has selected the cases for vatha pandu in GOVT. Siddha medical college Hospital under the supervision of facilities of Noi Naadal department.

Dietary, habits and external causes, and natural urges increases the pitham but indirectly affect the vatham and kapham . So saaram formed in decreased in quality, simultaneously seneer (ratham) is also formed decreased quality so pandu noi came.

The author had take the photos mainly on Tongue, Neerkuri Neikuri, nails, eyes

A depressed immune system lowered capacity to digest, absorb, utilize transport nutrients.

It cannot eliminiate the toxic substances, so it results in disease.

CONCLUSION

The study on vatha pandu carried out in the dissertation based on clinical history, as per clinical examination siddha guidelines which are necessary to arrive at precise diagnosis.

Vatha pandu is widely distributed in world. Vatha pandu affectes the all sexes including children. It is characterized by loss of appetite, abdominal pain, flatulence, dryness of skin, hyperpigmentation,.

Vatha Pandu is diagnosed on detailed history, classical clinical examination of the siddha system and changes in eight fold diagnosis manikadainool, and uyirthathukkal.

In methodology study :

- Vatha Pitha Naadi is present in most of cases.
- Muhtothunittral (Kaba neer) is present in most of cases.
- Manikadai is present in 8 – 8 ½ wrist circumference in most of cases.
- Vatha thegai is noted in major cases.

How to we can Prevention Aneamia

- Eat well balanced diet
- Take blenty of greens highly iron content food.
- Wash hands frequently
- Reduce life stress, fear

- Avoid betal nut chewer, smoking and Alcohol
- Take boiled water

GOVT SIDDHA MEDICAL COLLEGE,

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DEPARTMENT OF PG NOI NAADAL

A STUDY ON DIAGNOSTIC METHODOLOGY IN VAADHA PANDU NOI THROUGH SIDDHA PARAMETERS

FORM I

SCREENING AND SELECTION PROFORMA

1. O.P.No _____ 2. I.P No _____ 3. Bed No: _____

4. S.No: _____

5. Name: _____6. Age (years): ☐

7. Gender: M ☐ F ☐

8. Occupation: _____

9. Income: _____

10. Address: ----------

---

11. Contact No: ----------

12. E-mail : ----------

CRITERIA FOR INCLUSION:

	YES	NO
1. Both sex.	☐	☐
2. Age 16 to 70	☐	☐
3. Nutritional Deficiency (Iron Deficiency)	☐	☐
4. Worm Infestations	☐	☐

CRITERIA FOR EXCLUSION:

	YES	NO
1. Myelo proliferative disorders	☐	☐
2. Associated with Haemolytic anaemia	☐	☐
3.Other Major disease	☐	☐
4.Trauma & Surgery	☐	☐

Date: Signature:

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FORM I-A
HISTORY PROFORMA

1. SI.No of the case: _____

2. Name: _____ Height: _____ cms
   Weight: _____ Kg

3. Age (years): _____ DOB ☐☐ ☐☐ ☐☐☐☐
   D D M M Y E A R

4. Educational Status:

1) Illiterate ☐ 2) Literate ☐ 3) Student ☐.

4) Graduate/ Post graduate ☐

5. Nature of work:

1) Sedentary work ☐

2) Field work with physical labour ☐

3) Field work Executive ☐

6. Annual Income of the Family_____

7. Total no. of members shares the : ☐ Adult ☐

Children ☐

8 . Complaints and Duration

_____

_____

_____

9. History of present illness:

_____

_____

_____

_____

10. History of Past illness:

	1. Yes	2.No
1. Jaundice	☐	☐
2. Malaria	☐	☐
3. Any Surgery	☐	☐
4. History of Trauma	☐	☐
5. Epistaxis	☐	☐
6. Blood Transfusion	☐	☐
7. Haemorrhoids	☐	☐
8. Haemoptysis (T.B)	☐	☐
9. Hamatemesis	☐	☐
10.Menorrhagia	☐	☐
11.Chronic ingestion of (Aspirin/ NSAIDS)	☐	☐
12.Haemturia	☐	☐
13.Acute / chronic renal failure	☐	☐
14.Congestive Cardiac failure	☐	☐

11. Habits:

	1. Yes	2. No
1. Pica Eating	☐	☐
2. Betal net chewer	☐	☐
3. Alcohol	☐	☐
Occasional/ Regular	☐	☐
Empty / after ingestion	☐	☐
ml/day	☐	☐

Type of diet V ☐ NV ☐ M ☐

12. Personal history:

Marital status: Married ☐ Unmarried ☐

No. of children: Male: _____ Female: _____

13. Family history:

History of similar symptoms	Yes	No	
Father	☐	☐	
Mother	☐	☐	
Other	☐	☐	_____

14. Mensutral & Obsteric history:

1. Age of Menarche_____Gravidity ☐
2. Last menstrual period_____ Parity ☐
3. Duration of menstrual cycle 25 ☐ 28 ☐ 42 ☐
4. Cycle duration regular ☐ irregular ☐
5. White discharge ☐ abortion _____
6. Dysmeneryhoea ☐
7. No. of pads used _____ / day _____
8. Last child birth _____
9. Year of menopause _____

15. GENERAL ETIOLOGY FOR “VAADHA PANDU”

	Yes	No
1. Dysentry / diarrhoea	☐	☐
2. Chronic use of laxatives	☐	☐
3. Excessive use of salt & sour.	☐	☐
4. Betal net chewer	☐	☐
5. Excessive consumption of alcohol	☐	☐
6. Day sleep.	☐	☐
7. disobedient rules. (மறைவழி நடந்திடாதர்)	☐	☐
8. Immoral activities (பஞ்சுதனை திருடினோர்)	☐	☐

16. CLINICAL SYMPTOMS OF ‘VAADHA PANDU’

	Present	Absent
1. Flatulence	☐	☐
2 abdominal pain	☐	☐
3. Thirst	☐	☐
4. Loss of appetite	☐	☐
5. Dryness of skin	☐	☐
6. Hyperpigmentation	☐	☐
7. Tremor	☐	☐
8. Redness eye or (conjunctivitis)	☐	☐
9. Constipation	☐	☐

10. Headache	☐	☐
11.Pallor	☐	☐
12. Swelling of body	☐	☐

GOVT SIDDHA MEDICAL COLLEGE, PALAYAMKOTTAI.

A STUDY ON DIAGNOSTIC METHODOLOGY IN VAADHA PANDU NOI THROUGH SIDDHA PARAMETERS

FORM II
CLINICAL ASSESSMENT

1. Serial No: _____

2. Name: _____

3. Date of birth: ☐☐ ☐☐ ☐☐☐☐
D D M M Y E A R

4. Age: _____ years

5. Date: _____

GENERAL EXAMINATION:

1. Height: _____ cms.

2. BMI _____ (Weight Kg/ Height m2)

3. Weight (kg):

4. Temperature (°F):

5. Pulse rate:

6. Heart rate:

7. Respiratory rate:

8. Blood pressure:

9. Pallor: Yes ☐ No ☐

a. Koilonchyia Yes ☐ No ☐

b. Angular stomatitis Yes ☐ No ☐

c. Chelosis Yes ☐ No ☐

10. Jaundice:

11. Cyanosis:

12. Lymphadenopathy:

13. Pedal edema:

14. Clubbing:

15. Jugular vein pulsation:

VITAL ORGANS EXAMINATION

	Normal	Affected
1. Stomach	☐	☐
2. Liver	☐	☐
3. Spleen	☐	☐
4. Lungs	☐	☐
5. Heart	☐	☐
6. Kidney	☐	☐
7. Brain	☐	☐

SYSTEMIC EXAMINATION:

1. Cardio Vascular System _____

a) Normal Heart Sounds Hear Normal ☐ Abnormal ☐
b) Haemic murmur Present ☐ Absent ☐

2. Respiratory System _____

3 Central Nervous System _____

4. Gastrointestinal System _____

1. Inspection:-

a) local distension Yes ☐ No ☐
or general
b) visible pulsation. Yes ☐ No ☐

2. Palpation:-

a) epigastric tenderness Yes ☐ No ☐

b) Splenomagaly Yes ☐ No ☐

c) hepatomegaly Yes ☐ No ☐

3. dull on percussion Yes ☐ No ☐

5. Uro genital System _____

6. Endocrine System _____

SIDDHA SYSTEM OF EXAMINATION

[1] ENNVAGAI THERVU [EIGHT-FOLD EXAMINATION]

I. NAADI (KAI KURI) (RADIAL PULSE READING)

(a) **Naadi Nithanam (Pulse Appraisal)**

1. Kaalam (Pulse reading season)

1. Kaarkaalam (Rainy season)	☐	2.Koothirkaalam (Autumn)	☐
3. Munpanikaalam (Early winter)	☐	4.Pinpanikaalam (Late winter)	☐
5. Ilavenirkaalam (Early summer)	☐	6.Muthuvenirkaalam (Late summer)	☐

2. Desam (Climate of the patient's habitat)

1. Kulir (Temperate)	☐	2. Veppam (Hot)	☐

3. Vayathu (Age) 1. 1-33yrs ☐ 2. 34-66yrs ☐ 3. 67-100 ☐

4. Udal Vanmai (General body condition)

1. Iyyalbu ☐ 2. Valivu ☐ 3.Melivu ☐

5. Naadiyin Vanmai (Expansile Nature)

1. Vanmai ☐ 2.Menmai ☐

6. Panbu (Habit)

1. Thannadai (Playing in) ☐	2. Munnokku (Advancing) ☐	3.Pinnokku (Flinching) ☐
4. Pakkamnokku (Swerving) ☐	5. Puranadai (Playing out) ☐	6.Illaitthal (Feeble) ☐
7. Kathithal (Swelling) ☐	8.Kuthithal (Jumping) ☐	9. Thullal (Frsiking) ☐

10. Azhutthal (Ducking) ☐ 11. Padutthal (Lying) ☐ 12. Kalatthal (Blending) ☐

13. Suzhalal (Revolving) ☐

(b) Naadi nadai (Pulse Play)

1. Vali ☐ 2 . Vali Azhal ☐ 3. Vali Iyyam ☐

4. Azhal ☐ 5. Azhal Vali ☐ 6. Azhal Iyyami ☐

7. Iyyam ☐ 8. Iyya vali ☐ 9. Iyya Azhal ☐

10.Mukkutram ☐

II.NAA (TONGUE)

1. Maa Padithal

Normal ☐ Present ☐ Absent ☐

Uniform ☐ Patches ☐ Niram _____

2. Naavin Niram 1.Karuppu (Dark) ☐ 2. Manjal (Yellow) ☐ 3.Velluppu (Colour) (Pale) ☐

3. Suvai (Taste sensation) 1.Kaippu (Bitter) ☐ 2.Pulippu (Sour) ☐ . Inippu (Sweet) ☐

4. Vedippu Central (Fissure) 1. Present ☐ 2. Absent ☐

5. Vai neer ooral (Salivation) 1.Normal ☐ 2. ☐ Increased ☐ 3.Reduced

Colour Colouress ☐ Milkywhite ☐

_____

6. Deviation Present ☐ Absent ☐

_____

7. Pigmentation Present ☐ Absent ☐

Dot ☐ Whole ☐

Area of Pigmentation

Tip ☐ Sides ☐ Root ☐ Whole ☐

8. Tooth Impressions Present ☐ Absent ☐

9. Bald tongue (loss of taste buds) Present ☐ Absent ☐

III.NIRAM (COLOUR) (SKIN COMPLEXION)

1. Iyalbana Niram 1. Karuppu (Dark) ☐ 2.Manjal (Yellowish) ☐ 3.Velluppu (Fair) ☐

2. Asadharana Niram maatram 1. Karuppu (Dark) ☐ 2.Manjal (Yellowish) ☐

3.Velluppu (Pale) ☐ 4. Maaniram ☐

Regular ☐ Irregular ☐

IV. MOZHI (VOICE)

1. Sama oli (Medium pitched) ☐ 2. Urattha oli (High pitched) 3. Thazhantha oli (Low pitched) ☐

4. sound produced in the lung field during at rest ☐

5. Monotonus speech Present ☐ Absent ☐

6. Slurred speech Present ☐ Absent ☐

(Stammering)

V. VIZHI (EYES)

1. Niram (Venvizhi)
(Discolaration)

1. Karuppu (Dark) ☐ 2. Manjal (Yellow) ☐

3. Sivappu (Red) ☐ 4.Velluppu (White) ☐

5. Pazhupu(muddy) ☐ 6. No Discoloration ☐

Imai Neeki Paarthal

1. Sivapu (Red) ☐ 2. Velluppu (Pale) ☐

3. Ilam Sivappu (Pink) ☐ 4.Manjal (Yellow) ☐

2. Neerthuvam (Moisture) 1.Normal ☐ 2. Increased ☐ 3.Reduced ☐

3. Erichchal (Burning sensation) 1.Present ☐ 2. Absent ☐

4. Peelai seruthal (Mucus excrements) 1.Present ☐ 2. Absent ☐

5.Any other eye disease _____

VI. MEI KURI (PHYSICAL SIGNS)

1. Veppam (Warmth) 1. Mitham (Mild) ☐ 2. Migu (High) ☐ 3. Thatpam (Low) ☐

2. Viyarvai (Sweat) 1. Increased ☐ 2. Normal ☐ 3. Reduced ☐

Colour _____

Smell _____

Place _____

3. Thodu vali (Tenderness) 1.Present ☐ 2. Absent ☐

4.Hypopigmentation Present ☐ Absent ☐

5. Hyperpigmentation Present ☐ Absent ☐

6. Ulcer Present ☐ Absent ☐

7. Skin Diseases Present ☐ Absent ☐

VII. MALAM (STOOLS)

1. Ennikai / Naal ☐

2. Alavu a) Normal ☐ b) Increased ☐ c) Decreased ☐

(Quantity)

3. Niram (Color)
   1. Karuppu (Black) ☐
   2. Manjal (Yellowish) ☐
   3. Sivappu (Reddish) ☐
   4. Velluppu (Pale) ☐
   5. Brownish Colour (Normal) ☐

4. Sikkal (Constipation) 1. Present ☐ 2. Absent ☐

5. Sirutthal (Poorly formed stools) 1. Present ☐ 2. Absent ☐

6. Kalichchal / Naal
   1. Loose watery stools 1. Present ☐ 2. Absent ☐
   2. Digested food 1. Present ☐ 2. Absent ☐
   3. Seetham 1. Present ☐ 2. Absent ☐
   (Watery and mucoid excrements)
   Colour of Seetham 1. Venmai ☐ 2. Manjal ☐

7. Vemmai 1. Present ☐ 2. Absent ☐

8. Passing of a) Mucous 1. Present ☐ 2. Absent ☐
   b) Blood 1. Present ☐ 2. Absent ☐

9. History of habitual Constipation 1. Present ☐ 2. Absent ☐

VIII. MOOTHIRAM (URINE)

(a) NEER KURI (PHYSICAL CHARACTERISTICS)

1. Niram (colour) Normal ☐ Abnormal ☐

Colourless	☐	Milky purulent	☐	Orange	☐
Red	☐	Greenish	☐	Dark brown	☐
Bright red	☐	Black	☐	Brown red or yellow	☐

2. Manam (odour)		Yes	No
Ammonical	:	☐	☐
Fruity	:	☐	☐
Others	: _____		

3. . Nurai (froth)		Yes	No
Clear	:	☐	☐
Cloudy	:	☐	☐

If froth present, colour of the froth : _____

4.Edai (Specific gravity)		Yes	No
Normal (1.010-1.025)	:	☐	☐
High Specific gravity (>1.025)	:	☐	☐
Low Specific gravity (<1.010)	:	☐	☐
Low and fixed Specific gravity (1.010-1.012)	:	☐	☐

5. Alavu (volume)		Yes	No
Normal (1.2-1.5 lt/day)	:	☐	☐
Polyuria (>2lt/day)	:	☐	☐

Oliguria (<500ml/day) : ☐ ☐

Anuria : ☐ ☐

6. **Enjal (deposits)** : Yes No

☐ ☐

b) NEI KURI (oil spreading sign)

1. Aravam (Serpentine fashion) ☐
2. Mothiram (Ring) ☐
3. Muthu (Pearl beaded appear) ☐
4. Aravil Mothiram (Serpentine in ring fashion) ☐
5. Aravil Muthu (Serpentine and Pearl patterns) ☐
6. Mothirathil Muthu (Ring in pearl fashion) ☐
7. Mothirathil Aravam (Ring in Serpentine fashion) ☐
8. Muthil Aravam (Pearl in Serpentine fashion) ☐

Diagram

9. Muthil Mothiram (Pearl in ring fashion) ☐
10. Asathiyam (Incurable) ☐
11. Mellena paraval (Slow spreading) ☐
12. others:_____

[2]. MANIKKADAI NOOL (Wrist circummetric sign) : _____ fbs

Rt. _____ Lt._____

[3]. **IYMPORIGAL /IYMPULANGAL (Penta sensors and its modalities)**

	1. Normal	**2. Affected**	
1. Mei (skin)	☐	☐	_____
2. Vaai (Mouth/ Tongue)	☐	☐	_____
3. Kann (Eyes)	☐	☐	_____
4. Mookku (Nose)	☐	☐	_____

5. Sevi (Ears) ☐ ☐ _____

[4]. KANMENTHIRIYANGAL /KANMAVIDAYANGAL

(Motor machinery and its execution)

	1. Normal	**2. Affected**	
1. Kai (Hands)	☐	☐	_____
2. Kaal (Legs)	☐	☐	_____
3. Vaai (Mouth)	☐	☐	_____
4. Eruvai (Analepy)	☐	☐	_____
5. Karuvaai (Birth canal)	☐	☐	_____

[5]. YAKKAI (SOMATIC TYPES)

Vatha constitution	Pitha constitution	Kaba constitution
Lean and lanky built ☐	Thin covering of bones and joints by soft tissue ☐	Plumpy joints and limb ☐
Hefty proximities of limbs ☐	Always found with warmth, sweating and offensive body odour ☐	Broad forehead and che ☐
Cracking sound of joints on walking ☐	Wrinkles in the skin ☐	Sparkling eyes with cle sight ☐
Dark and thicker eye lashes ☐	Red and yellow admixed complexion ☐	Lolling walk ☐
Dark and light admixed complexion ☐	Easily suffusing eyes due to heat and alcohol ☐	Immense strength despite poor eating ☐
Split hair ☐	Sparse hair with greying ☐	High tolerance to hung thirst and fear ☐
Clear words ☐	Intolerance to hunger, thirst and heat ☐	Exemplary character with good memory power ☐
Scant appetite for cold food items ☐	Inclination towards perfumes like sandal ☐	More liking for sweet taste ☐
Poor strength despite much eating ☐	Slender eye lashes ☐	Husky voice ☐
Loss of libido ☐	Pimples and moles are plenty ☐	
In generosity ☐		
Sleeping with eyes half closed ☐		

RESULTANT SOMATIC TYPE: _____

[6] GUNAM

1. Sathuva Gunam ☐ 2. Rajo Gunam ☐

3. Thamo Gunam ☐

[7] **KOSAM**

	Normal	**Affected**
1. Annamaya kosam (7 udarthathukal)	☐	☐
2. Praanamya kosam (Praanan+ kanmenthiriyam)	☐	☐
3. Manomaya kosam (Manam + gnendhiriyam)	☐	☐
4. Vingnanamaya kosam (Budhi+ gnendhiriyam)	☐	☐
5. Aanandamaya kosam (Prana vaayu + suluthi)	☐	☐

[8] UYIR THATHUKKAL

A. VALI

	1. Normal	**2. Affected**	
1. Uyir kaal (Praanan)	☐	☐	_____
2. Keel nokung kaal (Abaanan)	☐	☐	_____
3. Nadukkaal (Samaanan)	☐	☐	_____
4. Mel nokung kaal (Udhanan)	☐	☐	_____
5. Paravung kaal (Viyaanan)	☐	☐	_____
6. Naahan	☐	☐	_____
7. Koorman	☐	☐	_____
8. Kirukaran	☐	☐	_____

9. Devathathan ☐ ☐ _____

10. Dhananjeyan ☐ ☐ _____

B. AZHAL **1. Normal** **2. Affected**

1. Anala pittham ☐ ☐ _____

2. Prasaka pittham ☐ ☐ _____

3. Ranjaka pittham ☐ ☐ _____

4. Aalosaka pittham ☐ ☐ _____

5. Saathaka pittham ☐ ☐ _____

C. IYYAM

1. Normal **2. Affected**

1. Avalambagam ☐ ☐ _____

2. Kilethagam ☐ ☐ _____

3. Pothagam ☐ ☐ _____

4. Tharpagam ☐ ☐ _____

5. Santhigam ☐ ☐ _____

[9] UDAL THATHUKKAL

SAARAM

INCREASED SAARAM (CHYLE)	DECREASED SAARAM(CHYLE)
Loss of appetite ☐	Loss weight ☐
Excessive salivation ☐	Tiredness ☐
Loss of perseverance ☐	Dryness of the skin ☐
Excessive heaviness ☐ White musculature	Diminished activity of the sense organs ☐
Cough, dysponea, excessive sleep ☐	
Weakness in all joints of the body ☐	

SAARAM: INCREASED ☐ DECREASED ☐ NORMAL ☐

B. CENNEER:

INCREASED CENNEER(BLOOD)	DECREASED CENNEER(BLOOD)
Boils in different parts of the body ☐	Anemia ☐
Anorexia ☐	Tiredness ☐
Mental disorder ☐	Neuritis ☐
Spleenomegaly ☐	Lassitude ☐
Colic pain ☐	Pallor of the body ☐
Increased pressure ☐	
Reddish eye and skin ☐	
Jaundice ☐	
Haematuria ☐	

CENNEER: INCREASED ☐ DECREASED ☐ NORMAL ☐

[C]. OON

INCREASED OON (MUSLE)	DECREASED OON (MUSLE)
Cervical lymphadenitis ☐	Impairment of sense organs ☐
Vernical ulcer ☐	Joint pain ☐
Tumour in face ,abdomen, thigh, genitalia ☐	Jaw, thigh and genitalia gets shortened ☐
Hyper muscular in the cervical region ☐	

OON: INCREASED ☐ DECREASED ☐ NORMAL ☐

D. KOZHUPPU

INCREASED KOZHUPPU (ADIPOSE TISSUE)	DECREASED KOZHUPPU (ADIPOSE TISSUE)
Cervical lymph adenitis ☐	Pain in the hip region ☐
Vernical ulcer ☐	Disease of the spleen ☐
Tumour in face, abdomen, thigh, genitalia ☐	
Hyper muscular in the cervical region ☐	
Dyspnoea ☐	
Loss of activity ☐	

KOZHUPPU: INCREASED ☐ DECREASED ☐ NORMAL ☐

E. ENBU

INCREASED ENBU (BONE)	DECREASED ENBU (BONE)
Excess growth in bones and teeth ☐	Bones diseases ☐ Loosening of teeth ☐ Nails splitting ☐ Falling of hair ☐

ENBU: INCREASED ☐ DECREASED ☐ NORMAL ☐

F. MOOLAI

INCREASED MOOLAI (BONE MARROW)	DECREASED MOOLAI (BONE MARROW)
Heaviness of the body ☐ Swollen eyes ☐ Swollen phalanges chubby fingers ☐ Oliguria ☐ Non healing ulcer ☐	Osteoporosis ☐ Sunken eyes ☐

MOOLAI: INCREASED ☐ DECREASED ☐ NORMAL ☐

G. SUKKILAM / SURONITHAM

INCREASED SUKKILAM/SURONITHAM (SPERM OR OVUM)	DECREASED SUKKILAM/SURONITHAM (SPERM OR OVUM)
Infatuation and lust towards women / men ☐ Urinary calculi ☐	Failure in reproduction ☐ Pain in the genitalia ☐

SUKKILAM/SURONITHAM:
INCREASED ☐ DECREASED ☐ NORMAL ☐

[10] MUKKUTRA MIGU GUNAM

I. Vali Migu Gunam	1. Present	2. Absent
1. Emaciation	☐	☐
2. Complexion – blackish	☐	☐
3. Desire to take hot food	☐	☐
4. Shivering of body	☐	☐
5. Abdominal distension	☐	☐
6. Constipation	☐	☐
7. Insomnia	☐	☐
8. Weakness	☐	☐
9. Defect of sense organs	☐	☐
10. Giddiness	☐	☐
11. Lake of interest	☐	☐

II. Pitham Migu Gunam	1. Present	2. Absent
1. Yellowish discolouration Of skin	☐	☐
2. Yellowish discolouration Of the eye	☐	☐
3. Yellow coloured urine	☐	☐
4. Yellowishness of faeces	☐	☐
5. Increased appetite	☐	☐
6. Increased thirst	☐	☐
7. Burning sensation over the body	☐	☐
8. Sleep disturbance	☐	☐

III. Kapham migu gunam	**1. Present**	**2. Absent**
1. Increased salivary secretion	☐	☐
2. Reduced activeness	☐	☐
3. Heaviness of the body	☐	☐
4. Body colour – fair complexion	☐	☐
5. Chillness of the body	☐	☐
6. Reduced appetitie	☐	☐
7. Eraippu	☐	☐
8. Increased sleep	☐	☐

[11]. NOIUTRA KALAM

1. Kaarkaalam (Aug15-Oct14) ☐	2.Koothirkaalam (Oct15-Dec14) ☐
3. Munpanikaalam (Dec15-Feb14) ☐	4.Pinpanikaalam (Feb15-Apr14) ☐
5. Ilavanirkaalam ☐ (Apr15-June14)	6.Muthuvenirkaalam ☐ (June15-Aug14)

[12]. NOI UTRA NILAM

1. Kurunji (Hilly terrain) ☐	2. Mullai (Forest range) ☐	3. Marutham (Plains) ☐
4. Neithal (Coastal belt) ☐	5. Paalai (Desert) ☐	

GOVT SIDDHA MEDICAL COLLEGE,
PALAYAMKOTTAI.
DEPARTMENT OF NOI NAADAL

A STUDY ON DIAGNOSTIC METHODOLOGY IN VAADHA PANDU NOI THROUGH SIDDHA PARAMETERS

FORM-III
LABORATORY INVESTIGATIONS

1. O.P No: _____ Lab.No_____ Serial No_____

2. Name: _____

3. Date of birth: ☐☐ ☐☐ ☐☐☐☐
D D M M Y E A R

4. Age: _____ years

5. Date of assesssment: _____

Urine Examination

6. Sugar _____

7. Albumin _____

8. Deposits _____

9. Bile salts

10. Bile pigments _____

Blood

9. TC _____ Cells/cu mm

10. DC
P___% L _____% E _____% M _____%
B_____%

11.Hb _____ gms%

12.ESR Method

Westergren
ESR At 30 minutes _____ mm at 60 minutes _____mm

13. Blood Sugar-(F) _____mgs%
(PP) _____mgs%

14. Blood Urea _____

15. Serum creatinine _____

16, Serum Cholesterol _____ mgs%

17. Complete Haemogram _____
Automated – Flowcytometry, SLS Hb& Abs Cytometry
RBC Count
Haemoglobin
Haematocrit (PCV)
MCV
MCH
MCHC
Total WBC Count
Differential Count
Neutrophilis
Lymphocytes
Eosinophils
Monocytes
Basophils
Platelets Count

18. Peripheral Smear

19. Serum Ferritin

20. Total Iron binding capacity _____

21. ECG

22. Motion Test
Oval
Cyst
Occult blood.

Date: Signature of the Doctor

GOVT SIDDHA HOSPITAL –PALAYAMKOTTAI
DEPARTMENT OF NOI NAADAL

A STUDY ON DIAGNOSTIC METHODOLOGY IN VADHA PANDU THROUGH SIDDHA PARAMETERS

Register No:32103004 (2010-2013),

FORM IV A

INFORMED WRITTEN CONSENT FORM

I ……..exercising my free power of choice, hereby give my consent to be included as a subject in the diagnostic trial entitled A study on " Suvedha kuttam". I will be required to undergo all routine examinations. I may be asked to give urine and blood samples during the study.

I have been informed about the study to my satisfaction by the attending investigator and the purpose of this trial and the nature of study and the laboratory investigations. I also give my consent to publish my urine sample photographs in scientific conferences and reputed scientific journals for the betterment of clinical research.

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

Signature /thumb impression of the patient:

Date :

Name of the patient :

Signature of the investigator :

Date :

Head of the Department :

Date :

அரசு சித்த மருத்துவ கல்லூரி பாளையங்கோட்டை
பட்ட மேற்படிப்பு நோய்நாடல் துறை
வாதபாண்டு நோய் - நோய் கணிப்பு முறை
பற்றிய ஓர் ஆய்வு
பதிவு எண்: 32103004 (2010 ___ 2013)

ஒப்புதல் படிவம்

ஆய்வாளரால் சான்றளிக்கப்பட்டது

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

தேதி: **கையொப்பம்:**

இடம்: **பெயர்:**

நோயாளியின் ஒப்புதல்

நான் ---------- என்னுடைய சுதந்திரமாக தேர்வு செய்யும் உரிமையைக் கொண்டு இங்கு தலைப்பிடப்பட் **"வாத பாண்டு நோய்"** கணிப்பதற்கான மருத்துவ ஆய்விற்கு என்னை உட்படுத்த ஒப்புதல் அளிக்கிறேன்.

என்னிடம் இந்த மருத்துவ ஆய்வின் காரணத்தையும், மருத்துவ ஆய்வுக்கூட பரிசோதனைகள் பற்றி திருப்தி அளிக்கும் வகையில் ஆய்வு மருத்துவரால் விளக்கிக் கூறப்பட்டது.

நான் இந்த மருத்துவ ஆய்வின் போது காரணம் எதுவும் கூறாமல், எப்பொழுது வேண்டுமானாலும் இந்த ஆய்விலிருந்து என்னை விடுவித்து கொள்ளும் உரிமையை தெரிந்திருக்கின்றேன்.

தேதி: **கையொப்பம்:**
இடம்: **பெயர்:**

சாட்சிக்காரர் கையொப்பம்:

பெயர் :
உறவுமுறை :

GOVT SIDDHA MEDICAL COLLEGE &HOSPITAL

DEPARTMENT OF NOI NAADAL

A STUDY ON DIAGNOSTIC METHODOLOGY IN VATHA PANDU NOI THROUGH SIDDHA PARAMETERS

FORM - IV-E
PATIENT INFORMATION SHEET

PURPOSE OF RESEARCH AND BENEFITS:

The diagnostic research study in which your participation is proposed to assess the diagnostic methods in Siddha methodology in "Suvedha kuttam" patients. It is expected that you would benefit from this study. Knowledge gained from this study would be of benefit to patients suffering from such conditions for the diagnosis and prognosis.

STUDY PROCEDURE:

You will be interviewed and examined as OP and IP patients at the study centre. At the first visit the physician will conduct a brief physical examination and assess the condition followed by Ennvagai thervu and routine blood and urine analysis. After matching the inclusion criteria you will be included in this study and you will be examined on the basis of Ennvagai thervu.

POSSIBLE RISK:

During this study there may be a minimum pain to you while drawing blood sample.

CONFIDENTIALLITY:

Your medical records will be treated with confidentiality and will be revealed only to other doctors / scientists. The results of this study may be published in a scientific journal, but you will not be identified by your name.

YOUR PARTICIPATION AND YOUR RIGHTS:

Your participation in this study is voluntary and you may be withdrawn from

This study anytime without having to give reasons for the same. You will be informed about the findings that occur during the study. If you do agree to take part in this study, your health record will need to made available to the investigators. If you don't wish to participate at any stage, the level of care you receive will in no way to be affected.

The Ethics committee cleared the study for undertaking at OPD and IPD, GSMC, PALAY. Should any question arise with regards to this study you contact following person.

P.G scholar : Dr. Kanimozhi, II Year,
Department of PG Noi Naadal
Govt Siddha medical college,
Palay - 627 002.
Mobile no : 8489617299

அரசு சித்த மருத்துவ கல்லூரி பாளையங்கோட்டை
பட்ட மேற்படிப்பு நோய்நாடல் துறை
வாதபாண்டு நோய் - நோய் கணிப்பு முறை
பற்றிய ஓர் ஆய்வு
நோயாளியின் தகவல் படிவம்

ஆய்வின் நோக்கமும் பயனும்:

தாங்கள் பங்கெடுத்துக் கொள்ளும் இவ்வாய்வு சித்த மருத்துவ முறையில் நோயை கணிப்பதற்கான ஓர் ஆய்வுமுறை. இவ்வாய்வு தங்களின் நோய்கணிப்பை பற்றியும் நாளுக்கு நாள் இருக்கும் நோயின் தன்மை பற்றியும் அறிய உதவும்.

ஆய்வுமுறை:

தாங்கள் நேர்காணல் மற்றும் பரிசோதனைகளின் மூலம் உள்நோயாளி, வெளிநோயாளி பிரிவில் ஆய்வு செய்யப்படுவீர்கள். முதல் நேர்காணலின்போது ஆய்வாளரால் உடல் பரிசோதனை, நாடி, நீர், மலம, மற்றும் இரத்த பரிசோதனை செய்து குறிப்பிட்ட குறிகுணங்கள் இருப்பின் இவ்வாய்விற்காக எடுத்துக்கொள்ளப்படுவீர்கள்.

நேரும் உபாதைகள்:

இவ்வாயில் இரத்த பரிசோதனைக்காக இரத்தம் எடுக்கும்போது சிறிது வலி ஏற்படலாம்.

நம்பகத்தன்மை:

தங்களின் மருத்துவ ஆவணங்கள் அனைத்தும் மருத்துவர் ஆய்வாளர் அல்லாத பிறரிடம் தெரிவிக்கப்படமாட்டாது.

நோயாளியின் பங்களிப்பும் உரிமைகளும்:

இவ்வாய்வில் தங்களின் பங்களிப்பு தன்னிச்சையானது. இவ்வாய்வில் தாங்கள் ஒத்துழைக்க இயலவில்லையெனில் எப்பொழுது வேண்டுமானாலும் காரணம் எதுவும் கூறாமல் விலகிக்கொள்ளலாம். இவ்வாய்வின்போது அறியப்படும் தகவல்கள் தங்களுக்கு தெரிவிக்கப்படும். நோயாளியின் ஒப்பதலுக்கிணங்க நோய்கணிப்பு விவரங்களை ஆய்வாளர் பயன்படுத்திக்கொள்வார். நோயாளி ஆய்வினிடையே ஒத்துழைக்க மறுத்தாலும், எந்த நிலையிலும் நோயாளியை கவனிக்கும் விதம் பாதிக்கப்பட மாட்டது. நிறுவன நெறிமுறை குழுமம் மேற்கண்ட ஆய்வினை மேற்கொள்ள ஒப்புதல் அளித்துள்ளது. ஆய்வு குறித்த சந்தேகங்கள் இருப்பின் கீழ்கண்ட நபரை தொடர்பு கொள்ளவும்.

பட்டமேற்படிப்பாளர்: மரு. ம. கனிமொழி
இரண்டாம் வருடம்,
பட்ட மேற்படிப்பு நோய் நாடல் துறை,

அரசு சித்த மருத்துவக் கல்லூரி,
பாளையங்கோட்டை.
அலைபேசி எண்: 8489617299

HITECH DIAGNOSTIC CENTRE
Multi Speciality Reference Laboratory
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Tel : 4291 9999
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An ISO 9001:2008 Certified Organisation
MYLAPORE 4207 4934 | SALIGRAMAM 4554 2183 | ANNA NAGAR 4261 2741 | TAMBARAM 4315 9190 | WASHERMENPET 4204 9452 | AMBATTUR 4208 6905 | PERAVALLUR 4278 9603 | VILLIVAKKAM 4355 4801 | TRIPLICANE 4351 8505 | ADYAR 4558 7973 | MADIPAKKAM 2247 5071

Patient : P0020766 **Mrs.PARVATHY (65/F)**
SID .No : **007621**
Branch : **Palayamkottai**
Address :

STD Date : 18/11/2012
Rpt Time : 10:24:21
Rpt Date : 22/11/2012
Rpt Time : 18:18:28
Page # : 1
Final Report

Referrer : **Dr.S.K.SASI MD. (S)**

Test	Result	Reference Value

TEST REPORT

BLOOD – HAEMATOLOGY

SMEAR STUDY
Method : Microscopy

: RBCs : Microcytic hypochromic RBCs. No Nucleated RBCs seen. No Sickle Cells. No Target cells seen No inclusion bodies seen.

WBCs : Count normal. Distribution and Morphology normal. No immature cells seen.

PLATELETS: Appears adequate. Morphology and distribution normal

PAARASITES: No blood Parasites seen.

CLINICAL PATHOLOGY:

STOOL – MOTION ANALYSIS

Method : Conc.Method (Saturated saline flotation) & Iodine

Color	:	Brown
Consistency	:	Semisolid
Muscus	:	Present
Blood	:	Absent
Microscopy		
Ova	:	Nil
Cysts	:	Nil
Trophozites	:	Nil
RBCs	:	Nil
Leukocytes	:	0-2

OCCULT BLOOD : Negative

Method : STANDARD GUAIAC METHOD

HAEMOGRAM

BLOOD – HAEMATOLOGY

Mrs. Malini Parsuraman M.Sc., Chief Biochemist | Dr. Radhi Lawrence AB (Path) Chief Pathologist | Dr. R. Rani MBBS, DCP, DNB Hemato Pathologist | Dr. Sp. Ganesan MBBS, DCP Medical Director

PLEASE SEE REVERSE FOR MORE INFORMATION

HITECH DIAGNOSTIC CENTRE
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1, Millers Road, Kilpauk, Chennai-10.
Tel : 4291 9999
CT Scan, Lab & Corporate Health Centre
13, Dr. Nair Road, T.Nagar, Chennai-17
Tel : 4293 8200
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Patient : P0020768 **Mrs.MARGARET (38/F)**
SID .No : 006190
Branch : **Palayamkottai**
Address :

STD Date : 03/10/2012
Rpt Time : 10:24:21
Rpt Date : 07/10/2012
Rpt Time : 18:18:28
Page # : 1
Final Report

Referrer : **Dr.S.K.SASI MD. (S)**

Test	Result	Reference Value

TEST REPORT

BLOOD – HAEMATOLOGY

SMEAR STUDY
Method : Microscopy

: RBCs : Microcytic hypochromic RBCs. No Nucleated RBCs seen. No Sickle Cells. No Target cells seen No inclusion bodies seen.

WBCs : Count normal. Distribution and Morphology normal. No immature cells seen.

PLATELETS: Appears adequate. Morphology and distribution normal

PAARASITES: No blood Parasites seen.

CLINICAL PATHOLOGY:

STOOL – MOTION ANALYSIS

Method : Conc.Method (Saturated saline flotation) & Iodine

Color	:	Brown
Consistency	:	Semisolid
Muscus	:	Present
Blood	:	Absent
Microscopy		
Ova	:	Nil
Cysts	:	Nil
Trophozites	:	Nil
RBCs	:	Nil
Leukocytes	:	0-2

OCCULT BLOOD : Negative

Method : STANDARD GUAIAC METHOD

HAEMOGRAM

BLOOD – HAEMATOLOGY

Ganesan

Mrs. Malini Parsuraman M.Sc., Chief Biochemist | Dr. Radhi Lawrence AB (Path) Chief Pathologist | Dr. R. Rani MBBS, DCP, DNB Hemato Pathologist | Dr. Sp. Ganesan MBBS, DCP Medical Director

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Patient : P0020769 **Mrs.RAMA LAKSHMI (38/F)**
SID .No : 005651
Branch : **Palayamkottai**
Address :

STD Date : 13/09/2012
Rpt Time : 10:24:21
Rpt Date : 16/09/2012
Rpt Time : 18:18:28
Page # : 1
Final Report

Referrer : **Dr.S.K.SASI MD. (S)**

Test	Result	Reference Value

TEST REPORT

BLOOD – HAEMATOLOGY

SMEAR STUDY
Method : Microscopy

: RBCs : Microcytic hypochromic RBCs. No Nucleated RBCs seen. No Sickle Cells. No Target cells seen No inclusion bodies seen.

WBCs : Count normal. Distribution and Morphology normal. No immature cells seen.

PLATELETS: Appears adequate. Morphology and distribution normal

PAARASITES: No blood Parasites seen.

CLINICAL PATHOLOGY:

STOOL – MOTION ANALYSIS

Method : Conc.Method (Saturated saline flotation) & Iodine

Color	:	Brown
Consistency	:	Semisolid
Muscus	:	Present
Blood	:	Absent
Microscopy		
Ova	:	Nil
Cysts	:	Present
Trophozites	:	Nil
RBCs	:	Nil
Leukocytes	:	0-2

OCCULT BLOOD : Positive

Method : STANDARD GUAIAC METHOD

HAEMOGRAM

BLOOD – HAEMATOLOGY

Ganesan

Mrs. Malini Parsuraman M.Sc., Chief Biochemist | Dr. Radhi Lawrence AB (Path) Chief Pathologist | Dr. R. Rani MBBS, DCP, DNB Hemato Pathologist | Dr. Sp. Ganesan MBBS, DCP Medical Director

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Patient : P0020770 **Mrs.VEERA LAKSHMI (38/F)**
SID .No : 006109
Branch : **Palayamkottai**
Address :

STD Date : 02/10/2012
Rpt Time : 10:24:21
Rpt Date : 08/10/2012
Rpt Time : 18:18:28
Page # : 1
Final Report

Referrer : **Dr.S.K.SASI MD. (S)**

Test	Result	Reference Value

TEST REPORT

BLOOD – HAEMATOLOGY

SMEAR STUDY
Method : Microscopy

: RBCs : Microcytic hypochromic RBCs. No Nucleated RBCs seen. No Sickle Cells. No Target cells seen No inclusion bodies seen.

WBCs : Count normal. Distribution and Morphology normal. No immature cells seen.

PLATELETS: Appears adequate. Morphology and distribution normal

PAARASITES: No blood Parasites seen.

CLINICAL PATHOLOGY:

STOOL – MOTION ANALYSIS

Method : Conc.Method (Saturated saline flotation) & Iodine

Color	:	Brown
Consistency	:	Semisolid
Muscus	:	Present
Blood	:	Absent
Microscopy		
Ova	:	Nil
Cysts	:	Present
Trophozites	:	Nil
RBCs	:	Nil
Leukocytes	:	0-2

OCCULT BLOOD : Positive

Method : STANDARD GUAIAC METHOD

HAEMOGRAM

BLOOD – HAEMATOLOGY

Ganesan

Mrs. Malini Parsuraman M.Sc., Chief Biochemist | Dr. Radhi Lawrence AB (Path) Chief Pathologist | Dr. R. Rani MBBS, DCP, DNB Hemato Pathologist | Dr. Sp. Ganesan MBBS, DCP Medical Director

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Patient	: P0012476 **Mrs.VEERA LAKSHMI (29/F)**	STD Date	: 01/10/2012
SID .No	: 006079	Rpt Time	: 10:40:43
Branch	: Palayamkottai		
Referrer	: GOVERNMENT SIDDHA HOSPITAL.		
Address	: PALAYAMKOTTAI TIRUNELVELI	Rpt Date	: 02/10/2012
		Rpt Time	: 12:27:16
		Page #	: 1
		Final Report	
Source	: **Dr.KANIMOZHI**	**Final Report**	

Test	Result	Reference Value

TEST REPORT

Sample collected and sent

HAEMOGRAM

BLOOD – HAEMATOLOGY

CBC

Method : Automated – Flowcytometry, SLS Hb & Abs cytometry

RBC Count	:	4.29 Millions /cmm	MALE : 4.6 - 6.0
			FEMALE: 4.2 – 5.4
Haemoglobin	:	6.7 gm/dl	Male : 13.5 – 17.0
			Female : 12.0 – 15.5
Haematocrit (PCV)	:	24.8 %	Male : 40-52%
			Female : 38-45%
MCV	:	57.8	76 – 96 fl
MCH	:	15.6	27-31 pg
MCHC	:	27.0	32- 36%
Total WBC Count	:	6200 Cells/ cmm	4000 – 11000
Differential Count			
Neutrophilis	:	43 %	40 – 65 %
Lymphocytes	:	50 %	30- 50 %
Eosinophils	:	4 %	2- 8 %
Monocytes	:	3 %	2 – 4 %
Basophils	:	0 %	0 – 1 %
Platelets Count	:	3.17 Lakhs/Cmm	1.5 - 4.0

ESR

Method : Westergren

1 Hour	:	40 mm	Male : 5 - 15 mm
			Female : 5 - 20 mm

Ganesan

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Patient	: P0012476 **Mrs.RAMA LAKSHMI (38/F)**	STD Date	: 12/09/2012
SID .No	: 006079	Rpt Time	: 11:53:37
Branch	: Palayamkottai		
Referrer	: GOVERNMENT SIDDHA HOSPITAL.		
Address	: PALAYAMKOTTAI TIRUNELVELI	Rpt Date	: 12/09/2012
		Rpt Time	: 16:20:43
		Page #	: 1
		Final Report	
Referrer	: **Dr.KANIMOZHI**	**Final Report**	

Test	Result	Reference Value

TEST REPORT

Sample collected and sent

HAEMOGRAM

BLOOD – HAEMATOLOGY

CBC

Method : Automated – Flowcytometry, SLS Hb & Abs cytometry

RBC Count	:	4.04 Millions /cmm	MALE : 4.6 - 6.0
			FEMALE: 4.2 – 5.4
Haemoglobin	:	7.4 gm/dl	Male : 13.5 – 17.0
			Female : 12.0 – 15.5
Haematocrit (PCV)	:	27.4 %	Male : 40-52%
			Female : 38-45%
MCV	:	67.8	76 – 96 fl
MCH	:	18.3	27-31 pg
MCHC	:	27.0	32- 36%
Total WBC Count	:	6900 Cells/ cmm	4000 – 11000
Differential Count			
Neutrophilis	:	52 %	40 – 65 %
Lymphocytes	:	42 %	30- 50 %
Eosinophils	:	4 %	2- 8 %
Monocytes	:	2 %	2 – 4 %
Basophils	:	0 %	0 – 1 %
Platelets Count	:	4.33 Lakhs/Cmm	1.5 - 4.0

ESR

Method : Westergren

1 Hour	:	60 mm	Male : 5 - 15 mm
			Female : 5 - 20 mm

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Patient	: P0012476 **Mrs.MARGARET (38/F)**	STD Date	: 02/10/2012
SID .No	: 006079	Rpt Time	: 12:20:38
Branch	: Palayamkottai		
Referrer	: GOVERNMENT SIDDHA HOSPITAL.		
Address	:	Rpt Date	: 02/10/2012
	PALAYAMKOTTAI	Rpt Time	: 16:47:23
	TIRUNELVELI	Page #	: 1
		Final Report	
Referrer	: **Dr.KANIMOZHI**	**Final Report**	

Test	Result	Reference Value

TEST REPORT

Sample collected and sent

HAEMOGRAM

BLOOD – HAEMATOLOGY

CBC

Method : Automated – Flowcytometry, SLS Hb & Abs cytometry

RBC Count	:	3.43 Millions /cmm	MALE : 4.6 - 6.0
			FEMALE: 4.2 – 5.4
Haemoglobin	:	4.8 gm/dl	Male : 13.5 – 17.0
			Female : 12.0 – 15.5
Haematocrit (PCV)	:	20.1 %	Male : 40-52%
			Female : 38-45%
MCV	:	58.6	76 – 96 fl
MCH	:	14.0	27-31 pg
MCHC	:	23.9	32- 36%
Total WBC Count	:	4700 Cells/ cmm	4000 – 11000
Differential Count			
Neutrophilis	:	55 %	40 – 65 %
Lymphocytes	:	41 %	30- 50 %
Eosinophils	:	4 %	2- 8 %
Monocytes	:	2 %	2 – 4 %
Basophils	:	0 %	0 – 1 %
Platelets Count	:	3.82 Lakhs/Cmm	1.5 - 4.0

ESR

Method : Westergren

1 Hour	:	30 mm	Male : 5 - 15 mm
			Female : 5 - 20 mm

Ganesan

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Patient	: P0012476	**Mrs.PARVATHY (65/F)**	STD Date	: 17/10/2012
SID .No	: 007556		Rpt Time	: 12:41:30
Branch	: Palayamkottai			
Referrer	: GOVERNMENT SIDDHA HOSPITAL.			
Address	:		Rpt Date	:19/10/2012
	PALAYAMKOTTAI		Rpt Time	: 17:50:20
	TIRUNELVELI		Page #	: 1
			Final Report	
Referrer	: **Dr.KANIMOZHI**		**Final Report**	

Test	Result	Reference Value

TEST REPORT

Sample collected and sent

HAEMOGRAM

BLOOD – HAEMATOLOGY

CBC

Method : Automated – Flowcytometry, SLS Hb & Abs cytometry

RBC Count	:	3.12 Millions /cmm	MALE : 4.6 - 6.0 FEMALE: 4.2 – 5.4
Haemoglobin	:	5.0 gm/dl	Male : 13.5 – 17.0 Female : 12.0 – 15.5
Haematocrit (PCV)	:	18.0 %	Male : 40-52% Female : 38-45%
MCV	:	57.7	76 – 96 fl
MCH	:	16.0	27-31 pg
MCHC	:	27.8	32- 36%
Total WBC Count	:	7900 Cells/ cmm	4000 – 11000
Differential Count			
Neutrophilis	:	75 %	40 – 65 %
Lymphocytes	:	20 %	30- 50 %
Eosinophils	:	3 %	2- 8 %
Monocytes	:	2 %	2 – 4 %
Basophils	:	0 %	0 – 1 %
Platelets Count	:	3.47 Lakhs/Cmm	1.5 - 4.0

ESR

Method : FERROZINE : 18.5 Microgm/dl Seum (Adult)

Male : 59-158 Microgm/dl
Female : 37-145 Microgm/dl
New Born
Female : 32-112 Microgm/dl
Male : 29-127 Microgm/dl
Children
Male 4-12 yrs : 28-115 Microgm/dl
Female 4-12 yrs : 28-104 Microgm/**dl**

Ganesan

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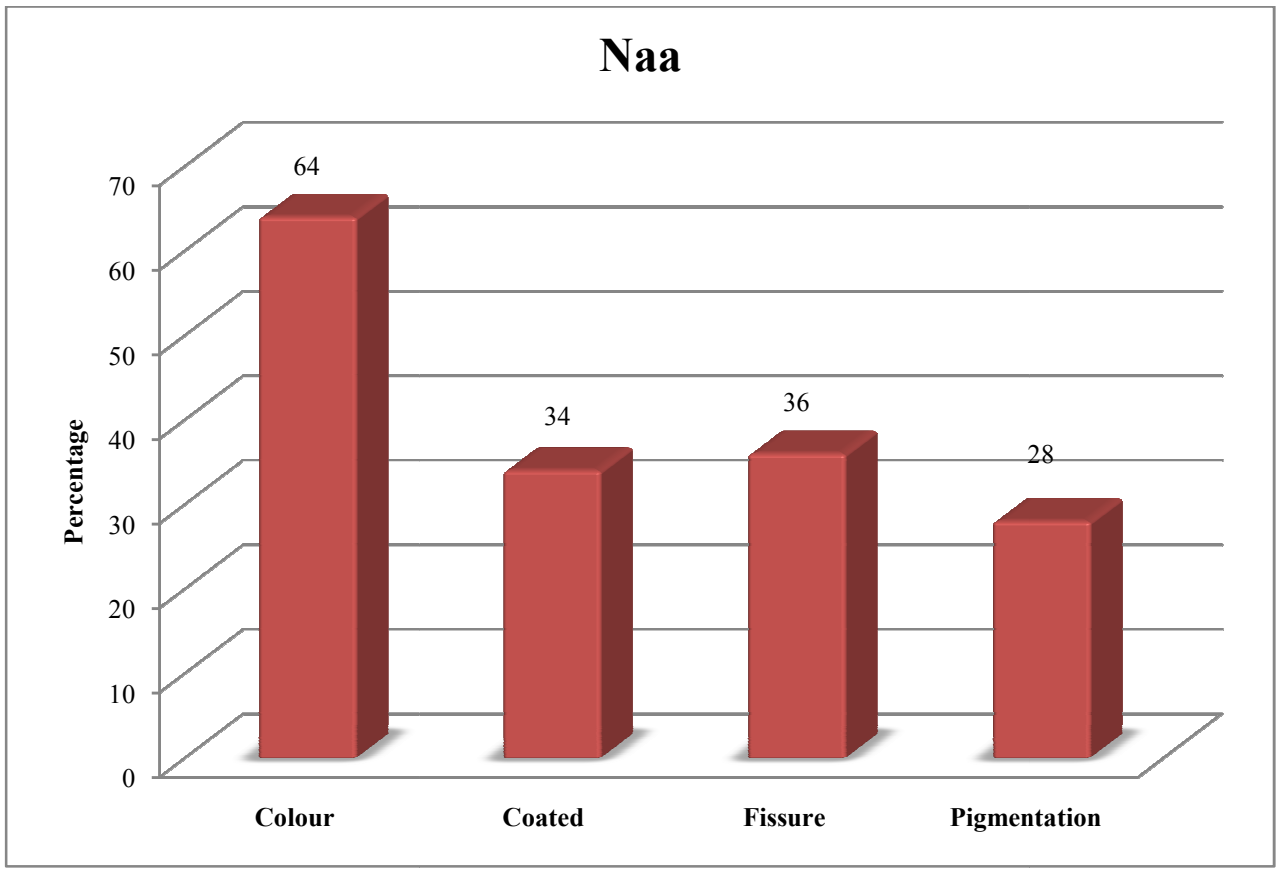
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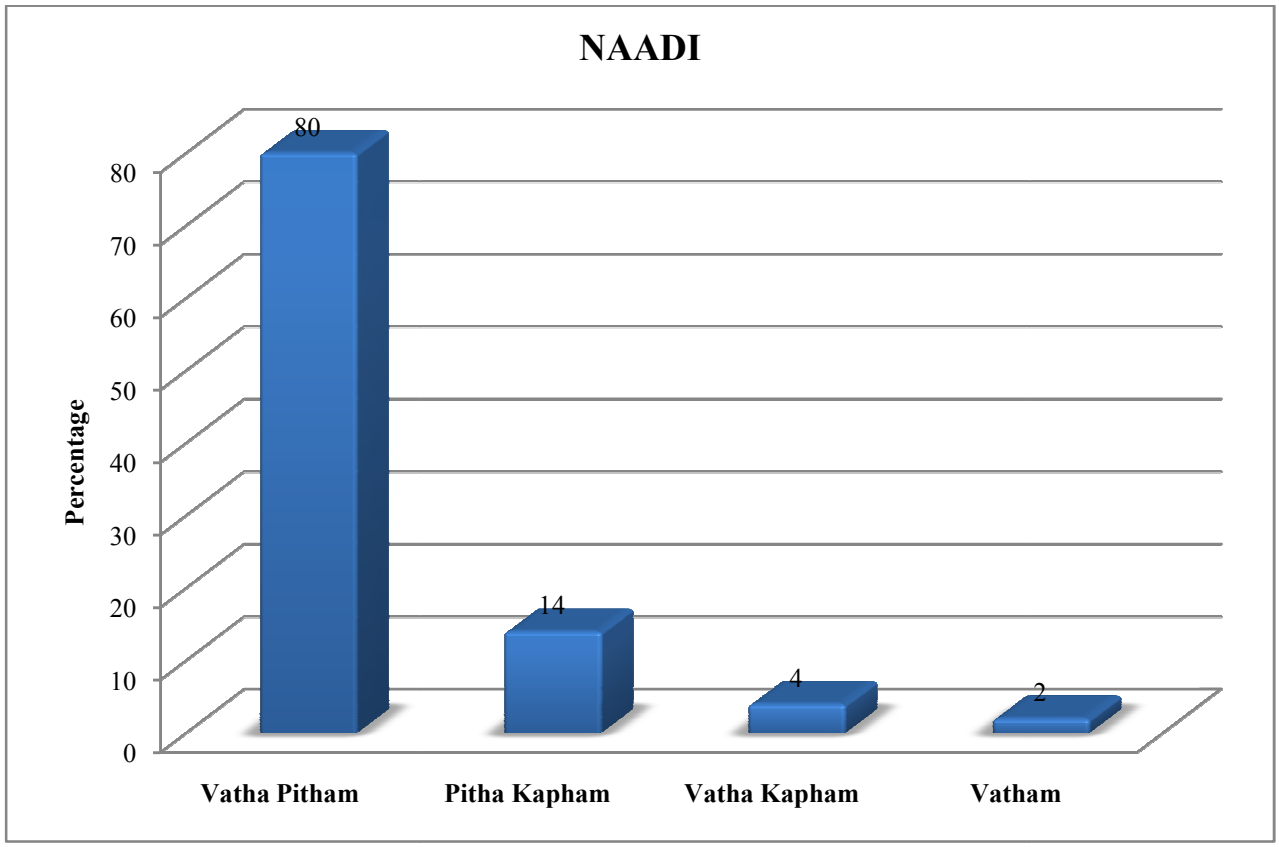
Fissure
Pigmentation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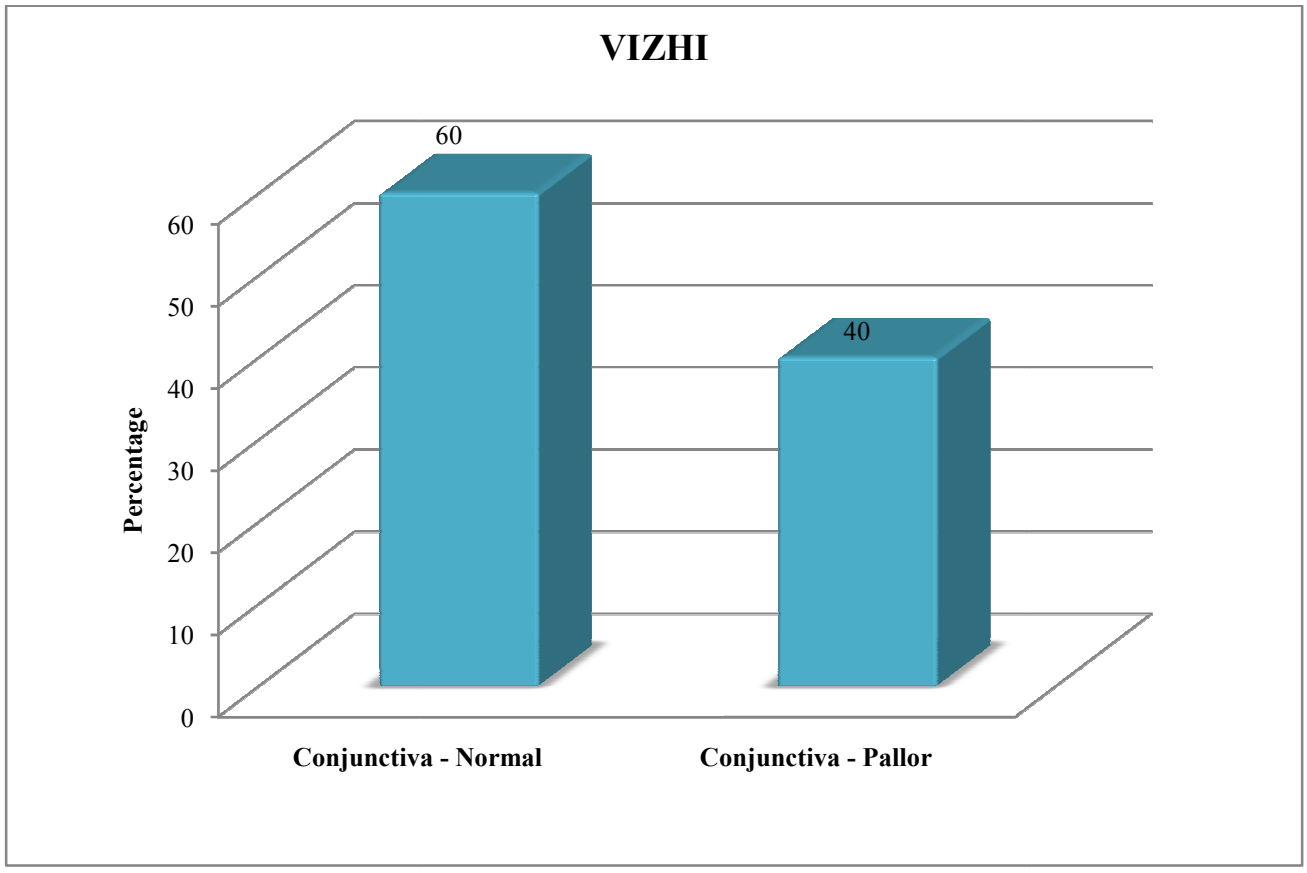
Vatham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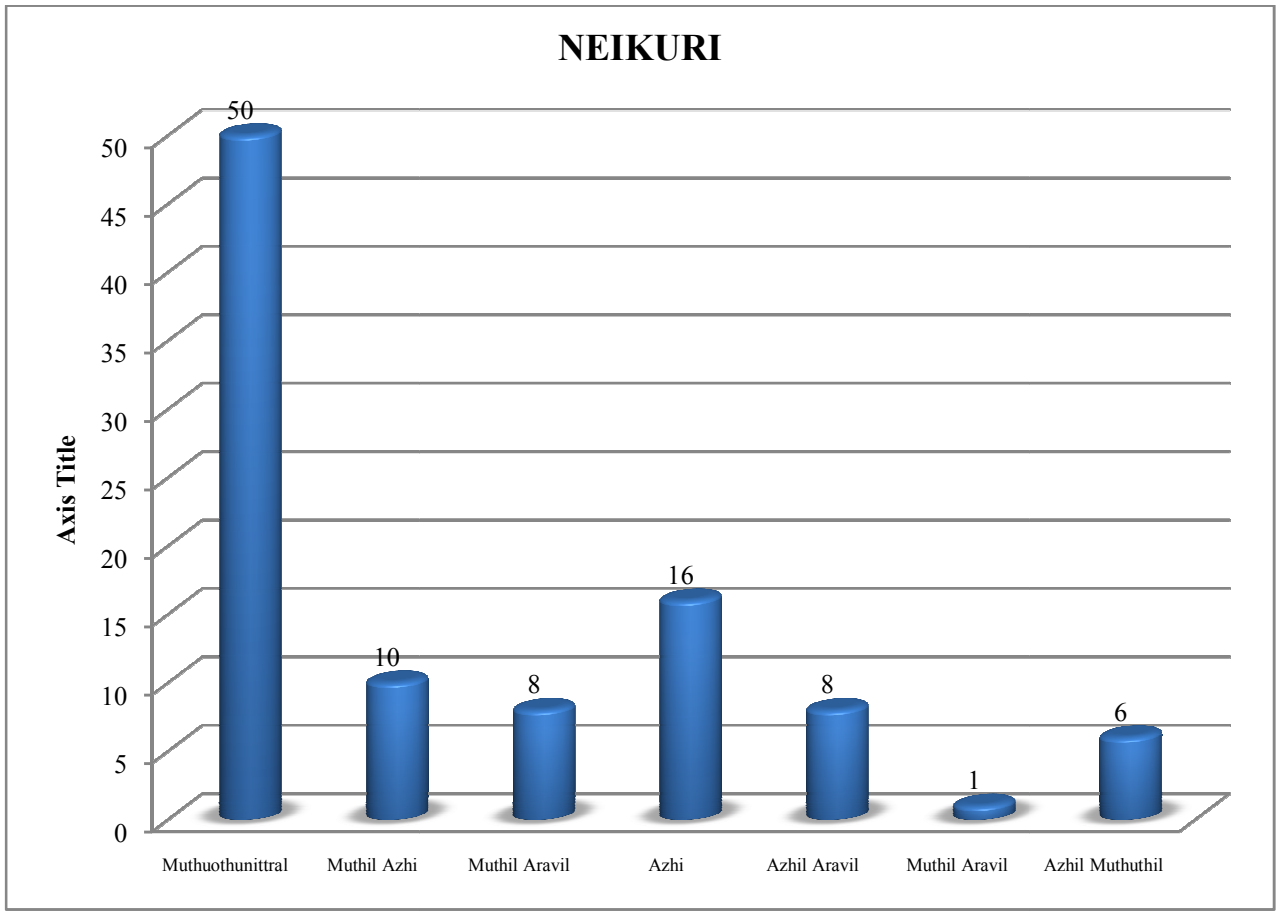
Conjunctiva - Pallor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Muthuothunittral
Muthil Azhi
Muthil Aravil
Azhi
Azhil Aravil
Muthil Aravil
Azhil Muthuthil