A STUDY ON

ERI GUNMAM

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INTRODUCTION

‘Necesssity is the mother of invention’. Healthy living is essential for every human. Medical field evolved to fulfill the necessity of disease free living. Siddha Maruthuvam was invented by the spiritually enlightened siddhars to led a healthy and eternal living. ‘Siddhi’- the word itself implies ‘fulfilment of the needs’. Everybody needs eternity which was the plea of siddhars too, which made them to invent a system of medicine – SIDDHA MARUTHUVAM.

In this modern world, due to the irregular dietary habits and stressful life around 80% of the population suffers from peptic ulcer disease. Most of the population come across experiencing the gnawing symptoms of the disease atleast once in their life time.

Peptic ulcer disease had a tremendous effect on morbidity and mortality until the last decade of 20th century, when epidemiological trends started to point to an impressive fall in its incidence. Despite substantial advances, the disease remain an important clinical problem, largely because of the increasingly widespread range of NSAIDS, altered dietary habits.

Epidemiological data from India suggest that peptic ulcer is more common in the poor. The highest incidence (56.5%) of peptic ulcer was among the semiskilled workers and the lower (2.5%) in professional and
managerial group. The prevalence of peptic ulcer increased with age, with a peak prevalence of 28.8% in the 5th decade of life.

In Siddha, drugs are of 3 origin namely herbal, animal and mineral/metallc origin as insisted by the versus,

“இனுயந்து குறுகவன், மிததிகளை
பைப் பெருந்து பசிய”

The drug chosen was GUNMATHUKKU CHOORANAM – a herbometallic drug in reference with the text GUNAPADAM – MOOLIGAI VAGUPPU. The drug is chosen as such that it should eradicate the primary underlying cause of the disease and cure the pathological changes at the concerned site of disease.

The literary reviews on the cause, pathophysiology and management of the disease is done both in scientific and traditional ways. Diagnostic tools of both scientific and siddha methods are utilised for the diagnosis. Scientific evaluation of the drug such as biochemical, pharmacological analysis were done.

The clinical trial with the selection drug GUNMATHUKKU CHOORANAM is made on 20 IP and 20 OP patients. Patient selection was made as per the case sheet proforma. This is just a stone work and further large scale clinical evaluation should be done to get better healthy living quality.
AIM & OBJECTIVES

The aim of this dissertation work is to analyse the antiulcer effect of GUNMATHUKKU CHOORANAM in the management of ERIGUNMAM

Objectives

➢ To analyse the disease literally.

➢ To analyse the antispasmodic action of the selection drug (Gunmathukku chooranam).

➢ To analyse the biochemical properties of the trial drug.

➢ To collect the literary evidences of the ulcer protective and curative effect of the trial drug.

➢ To utilize both siddha and modern parameters in the diagnostic approach and to document them.

➢ To document the results of the randomised clinical trial using the trial drug GUNMATHUKKU CHOORANAM.
ABSTRACT

Peptic ulcer disease had a tremendous effect on morbidity and mortality until the last decades of 20th century, when epidemiological trends started to point to an impressive fall. Despite substantial advances, the disease remains an important clinical problem. Hence the author decided to focus on the role of the causatives of ulcer disease and conducted a randomized clinical trial in the OPD and IPD of Postgraduate Pothu Maruthuvam Department of Government siddha medical college, palayamkottai. The patients reporting to the OPD were scrutinized and 40 patients of either sex were diagnosed to have peptic ulcer disease of various degrees and included in the trial. Among the 40 patients, 20 patients were treated in OPD and 20 patients were treated in IPD. The treatment was given with traditional medicine gunmathukkku chooranam. The observation revealed promising results. Gunmathukku chooranam effectively manages the manifestation of peptic ulcer disease.
LITRARY REVIEW

SIDDHA ASPECT

Man always struggled with present and attempted for better tomorrow and this can be achieved with a better perspective when the errors of the past and difficulties of the present are solved and planned at proper time. The knowledge of the ancient helps in having a better future.

Diseases of GIT (Gastro intestinal tract) and related organs are described under the entity GUNMAM in our texts. Further Gunmam is classified into 8 different types, namely

1. Vatha gunmam
2. Pitha gunmam
3. Kaba gunmam
4. Vayu gunmam

5. ERI GUNMAM
6. Vali gunmam
7. Sathi gunmam
8. Sanni gunmam

as per the saint yugi.
<table>
<thead>
<tr>
<th>Tamil Term</th>
<th>English Translation</th>
</tr>
</thead>
<tbody>
<tr>
<td>கிளைவிலிசுகீச்சி</td>
<td>burning sensation in the upper abdomen</td>
</tr>
<tr>
<td>துடு குயந்தம்</td>
<td>bor boryg mus</td>
</tr>
<tr>
<td>மார்ப் விள்ள காத்தம்</td>
<td>ptylism associated with nausea.</td>
</tr>
<tr>
<td>குழுலாகங்குது</td>
<td>Headache</td>
</tr>
<tr>
<td>முதிர்ப்பி</td>
<td>indigestion, flatulence distension of abdomen.</td>
</tr>
<tr>
<td>கிளைவிலிசுகீச்சி கும்பாசாது</td>
<td>regurgitation, belching</td>
</tr>
<tr>
<td>பாலுக்காது பெரிகாகம்</td>
<td>autonomic stimulation</td>
</tr>
<tr>
<td>கொன்றாம் கனிகாகம்</td>
<td>due to the increased pain</td>
</tr>
<tr>
<td>மும்பார்பி மும்பிய குளிர்வைத்தகம்</td>
<td>Flatulence, diarrhoea due to indigestion.</td>
</tr>
<tr>
<td>உயிரியாகங்கு உயிரியாகங்கு கும்பாசாது</td>
<td>nutrition deficit due to poor absorption</td>
</tr>
<tr>
<td>முற்பாசாம் கும்பாசாது</td>
<td>loss of appetite</td>
</tr>
<tr>
<td>முறுப்பிய உயிரியாகங்குக்கு கும்பாசாது</td>
<td>burning sensation of the body due to increased pitham</td>
</tr>
<tr>
<td>குழுமமுடம்</td>
<td>cough</td>
</tr>
</tbody>
</table>
Erigunmam is a form of dyspepsia marked by the symptoms viz – burning sensation in the stomach, functional disturbance of large intestine unusual secretion of saliva, vertigo, distension of the abdomen, rumbling noise in the stomach, sour belching, perspiration, diarrhoea, emaciation, cough, loathing of food.
ERIGUNMAM IN VAIDHYA SARA SANGRAHAM :

- மரியா செம்பூச்சை விளக்கம்
- மரியா வெள்ளத்தியம்
- கூம்பு புரயிட்டு குச்சவரிக்காது
- குருகலை
- குழந்தையும் மரியாம், சூரையும்
- மதுராகால் மரியா நீர்க்காது

ERIGUNMAM IN SIKICHDHARATHNA DEEPAM :

- மரியா நீர்த்தக்கான், மரியா பூரிபியம், மரியா எஸ்டாக்கான்
- கூம் மர்ப்பே
- மாப்புரிக்கட்டு, மாப்புரியாம்
- பச்சிமப்பகத்
- காரங்கு வைனாய்வான், வாக்கான்
- வேலாடம் வேலாகம்
- திட்டாம்

ERIGUNMAM IN SEEVARAKCHAMIRTHAM :

- அம்மகறத்தியம் நார் சிக்கான்
- காலிக்கட்டம்
- மாப்புரிக்கட்ட
- காத்தக்காளம்
- மாப்புரியாம், விளக்கான்
- பச்சிமப்பகத்
- காரங்கு வைனாய்வான் வேலாடம் வேலாகம்
The symptoms are erigunmam were also discussed in other texts like

- YUGI MUNI VATHA KAVIYAM
- ANUBAVA VAIDHYA DEVARAGASIYAM
- SARABENDRAR – GUNMA ROGA SIKITCHAI.

**PATHOGENESIS OF ERIGUNMAM**

As per the aetiological aspects collected from various siddha literatures we conclude to know food habits and immoral behavioural changes can lead to increase of vatha humour in the pithasthanam namely stomach (அதிச). Hence the equilibrium maintained among the three humours (Vatha, Pitha, Kaba) were disturbed.

Vitiation of vatha causes decrease in pitha. Decreased pitha in stomach portrays that its components sadaragni and Samanan gets affected.

![Diagram]

- Sadaragni – gets decreased
- Samanagni – gets increased
- Dheekshanagni – gets increased
- Mandhagni – gets increased

Increased dheekshanagni causes pseudo appetite (ie excessive acid secretion, burning chest)

Increased Mandhagni causes indigestion. (Flattulence, abdominal distension).
Samanan affected \rightarrow Viyanan affected \rightarrow Epigastric pain

Increased Vatha + Mandhagni

\downarrow

Abanan affected (either increases/ decreases)

\downarrow

Diarrhoea/Constipation

In the pathogenesis of Eri Gunmam, the changes in three humours play major role in the development of diseases which causes changes in udal thathukkal affects the udal vanmai and these pathological changes can be seen by the eight types of examination that is Envagai thervugal.
## SYMPTOMATOLOGY [YUGI]

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Type of Gunmam</th>
<th>GIT</th>
<th>CNS</th>
<th>CVS</th>
<th>RS</th>
<th>Others</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Vatha Gunmam</td>
<td>Constipation, Loss of appetite, Dryness of the tongue</td>
<td>Sleepiness, Giddiness, Difficulty in walking, Paraesthesia, Headache, Burning sensation,</td>
<td>-</td>
<td>-</td>
<td>Pain all over the body, Restriction of walking, Heaviness of the body.</td>
</tr>
<tr>
<td>2</td>
<td>Pitha Gunmam</td>
<td>Vomitting, Excessive thirst, Constipation</td>
<td>Paraesthesia, Giddiness</td>
<td>-</td>
<td>Cough, Breathlessness</td>
<td>Yellowish discolouration of the face, Fever, Burning micturition</td>
</tr>
<tr>
<td>3</td>
<td>Silethuma Gunmam</td>
<td>Ptylism, Loss of appetite</td>
<td>Haeviness of the head</td>
<td>Gross pallor</td>
<td>Dry cough</td>
<td>Emaciation, Fatiguability, Rigor, Stupor</td>
</tr>
<tr>
<td>4</td>
<td>Sanni Gunmam</td>
<td>Loss of appetite, Borborygmus, Ptylism, Diarrhoea, Burning sensation in the stomach, Salty taste in the tongue</td>
<td>Giddiness, unconsciousness</td>
<td>-</td>
<td>Dry cough, Breathlessness</td>
<td>Rigor, Chillness</td>
</tr>
<tr>
<td>No.</td>
<td>Gunmam</td>
<td>Symptoms</td>
<td>Signs</td>
<td>Symptoms</td>
<td></td>
<td></td>
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<td>--------------------------------------------------------------------------</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Eri</td>
<td>Burning sensation in the Stomach, Ptylism, Flatutance, Belching, Diarrhoea, Nausea.</td>
<td>Headache, Giddiness, Perspiration</td>
<td>Emaciation, Burning sensation all over the body</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Vayu</td>
<td>Indigestion, Loss of appetite, Flatulence, Pain in lower abdomen</td>
<td>Paraesthesia</td>
<td>Fatiguability, dryness of the body, Restriction of walking</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Saththi</td>
<td>Burning sensation in the upper abdomen, Constipation, Loss of taste, Increased appetite</td>
<td>Giddiness, Unconsciousness</td>
<td>Fatiguability, Varicosity, Burning sensation, Restriction of walking</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Vali</td>
<td>Flatulance, Borborygmus, Loss of appetite, Hypochondric pain radiating to back, False appetite.</td>
<td>Disturbed sleep, Unconsciousness</td>
<td>Dryness of the skin, Body Pain, Back and hip pain, Fever, Stupor</td>
<td></td>
<td></td>
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</tbody>
</table>
**MUKKUTRA THEORY**

Generally the human body is divided into three portions namely, Vatha portion, Pitha portion and Kaba portion.

- **Vatha Portion**: From the foot to Umbilicus
- **Pitha Portion**: From the umbilicus to neck
- **Kaba Portion**: From the neck up to the vertex of the head

Five basic elements are essential for the formation of universe namely.

1. **Pirithivi** (Earth)
2. **Appu** (Water)
3. **Theyu** (Fire)
4. **Vayu** (Air)
5. **Akayam** (Ether)

This is called Pancha bootha principle. The Pancha bootha principle is also mingled with the Vatha, Pitha, Kaba kaalam. The six taste variation and the seven body elements were also related with Mukkutra theory. The three thathus and tastes are formed by the different combination of five elements.

The combination of five elements in three thathus are as follows.

- **Vatham**: $\rightarrow$ Vayu + Akayam
- **Pitham**: $\rightarrow$ Theyu
- **Kabam**: $\rightarrow$ Appu + Pirithivi
The elemental combination of taste is as follows.

Pirithivi + Appu - Sweet
Pirithivi + Theyu - Sour
Pirithivi + Vayu - Astringent
Appu + Theyu - Salt
Vayu + Theyu - Pungency
Aakayam + Vayu - Bitter

Knowledge of this combination will be helpful to know which dosha has been disturbed and which tastes should be given to correct the deranged dosha.

**GNANAENTHIRIYANGAL**

The five Gnanaenthiriyangal are.

1. Mei - Feels all types of somatic sensation
2. Vai - Sense of taste
3. Kann - Sense of vision
4. Mookku - Sense of smell
5. Sevi - Sense of hearing.

**KANMENTHIRIYANGAL**

The five Kanmenthiriyangal are,

1. Kai - Motor activities related to upper limbs
2. Kaal - Motor activities related to lower limbs
3. Vai - Speech
4. Eruvai - Defaecation
5. Karuvai - Reproductive function
VATHAM

The quality of vatham can be described as dry, light, mobile, expansible, quick, cold, rough, clear and astringent in taste.

Vatham is responsible for respiration and control of movements.

Classification of Vatham

It can be classified into ten types. They are,

1. Piraanan  6. Naagan
3. Viyaanan  8. Kirukaran
4. Uthaanan  9. Devathathan
5. Samaanan  10. Dhananjayan

1. Piraanan

It is responsible for respiration and digestion.

2. Abaanan

It lies below the umbilicus responsible for downward expulsion of stools, urine and constriction of anal sphincter.

3. Viyaanan

It is responsible for the action of all organs, sensation and absorption of food.

4. Uthaanan

It is responsible for the absorption and distribution of food.

5. Samaanan

It is responsible for the activities of other vayus, nutrition and water balance of the body.
6. Naagan
   It is responsible for the movements of eyelids.

7. Koorman
   It is responsible for the closing of eyelids, yawning and closure of mouth.

8. Kirukaran
   It is responsible for the secretions of mouth and nose, appetite, sneezing and cough.

9. Devathathan
   It aggravates the emotional behaviours like anger, fighting, frustration, quarreling, argument etc.

10. Dhananjayan
    It escapes from the head on the third day after death.

      In Eri Gunmam piraanan, abaanan, viyaanan, uthaan, samaanan and kirukaran are affected and the products symptoms as follows.

1. Affected piraanan produces Indigestion
2. Affected abaanan produces Diarrhoea.
3. Affected uthaan produces Nausea, Vomitting.
4. Affected viyaanan produces Abdominal pain
5. Affected samaanan produces Indigestion.
6. Affected kirukaran produces Loss of appetite.
PITHAM

The qualities of pitham are,

1. Hot
2. Penetrating
3. Slightly foul smelling
4. Liquid
5. Sour and pungent in taste

Pitham is responsible for maintenance of body heat.

The pitha thosham is divided into five types. They are,

1. Anar Pitham
2. Ranjaga Pitham
3. Saathaga Pitham
4. Aalosaga Pitham
5. Praasaga Pitham

1. Anar Pitham
   Its action is characteristics of theyu. This is responsible for dryness and digestion of food.

2. Ranjaga Pitham
   It is responsible for colour and contents of the blood.

3. Saathaga Pitham
   It lies in the heart. It is responsible for the action in accordance to our thinking.
4. Aalosaga pitham

It is responsible for the vision.

5. Praasaga pitham

It is responsible for the complexion of skin.

In Eri Gunnam Anarpitham and Ranjagam, are affected.

1. Affected Analapitham produces indigestion.

2. Affected Ranjagam produces anaemia.

**KABAM**

The qualities of kabam are,

- Greesy
- Dense
- Smooth
- Slow
- Soft
- Rigid
- Sweet
- Cold
- Stable
- Clear

Kabam is responsible for maintenance of body from and structure.

Kabam is classified is to five types. They are

1. Avalambagam
2. Kiletham
3. Pothagam
4. Tharpagam
5. Santhigam
1. **Avalambagam**

   Heart is the seat of Avalambagam. It controls all other Kabam.

2. **Kiletham**

   Stomach is the seat of Kiletham. It gives moisture and softness to the ingested food.

3. **Pothagam**

   Tongue is the seat of Pothagam and it is responsible for the sense of taste.

4. **Tharpagam**

   Head is the seat of Tharpagam. It cools the eyes.

5. **Santhigam**

   It lies in the joints and responsible for the action of joints.

   In Eri Gunmam, Kiletham is affected.

   Affected Kiletham produces Loss of appetite.

1. **Increased Vatham**

   Emaciation, desire to hot food, tremor, abdominal bloating, constipation, fatigue, sleeplessness, giddiness and laziness are the symptoms of increased vatham humour.

2. **Decreased Vatham**

   Pain all over the body, low voice, loss of motor function, decrease in IQ, unconsciousness and diseases of increased kabam are the symptoms of decreased vatham humour.
3. Increased Pitham

Yellowishness of eye, stools, urine and skin. Excessive thirst and appetite, burning sensation of the body and sleeplessness are the symptoms of increased pitham.

4. Decreased Pitham

Decrease in digestive fire, decreased body temperature, loss of skin complexion and pathological intervention during normal physiological increase of kabam are the symptoms of decreased pitham.

5. Increased Kabam

Decrease in digestive fire, increased salivation, inactiveness, heaviness of the body, dyspnoea, cough, increased sleep and separation of thathus due to defective cohesive force by increased kabam.

6. Decreased Kabam

Giddiness, flattening of chest, increased sweating, palpitation, loss of lubrication and protuberance of joints are the symptoms of decreased kabam.
Factors which promote Vatham

Diet Habits

“அழகும் இணையங்கள் காரணம் திகழ்கும் மதிக்கு விளக்கமும் புதுவாக மூழ் முகக்கு தந்தானிதய மாற்றிவழக்கமும் சாதிக்க பல்வேறு திருவிளைவுகார்த்து காரணமும் மண்டுரிக்க விட்டில்கு காரணமும்”

“நெந்தவை திறனில்லாமல் கருத்து முயற்சியும் கருத்துக்கள்

சுருக்கும் புதின்பொதுமான கைத்தன் மாற்றிவழக்கமும்

மருத்துவர் முடிய குறைவின் மக்களை உயர்த்திவருகின்ற காரணமும்”.

- புதுக்கோணமாறும்

Excessive intake of spicy, pungent, astringent, unhealthy food habits, sleeping in the day time, loss of sleep in the night, excessive food or starvation, excessive indulgence of sex and ego are raising the vatham.

“அழகும் இணையங்கள் காரணம் திகழ்கும் மதிக்கு விளக்கமும் புதுவாக மூழ் முகக்கு தந்தானிதய மாற்றிவழக்கமும் சாதிக்க பல்வேறு திருவிளைவுகார்த்து காரணமும்

சுருக்கும் புதின்பொதுமான கைத்தன் மாற்றிவழக்கமும

மருத்துவர் முடிய குறைவின் மக்களை உயர்த்திவருகின்ற காரணமும்”.

- புதுக்கோணமாறும்

Irregular diet habits, excessive in take of impure water, drug which increases vatham, sour and ghee promotes vatham

“புதின்பொதுமான கைத்தன் மாற்றிவழக்கமும்”

Sour and astringent taste holds its part in raising the Vatham.
Factors which promotes Pitham

"வின்மிக்கவும் வாழ்க்கை மாரு விவசாயம் வித்ருவது
வின்மிக்கவும் வாழ்க்கை பார்வையை வித்ருவது
வின்மிக்கவும் வாழ்க்கை வாழ்க்கை கொண்டு வாழ்க்கை
வின்மிக்கவும் வாழ்க்கை வாழ்க்கை கொண்டு வாழ்க்கை".

"பிரிவறுக்கு விளக்கமுிவரும் புனிதமான நகரம்
பிரிவறுக்கு விளக்கமுிவரும் முன்னெடுத்து புனிதமான
பிரிவறுக்கு விளக்கமுிவரும் புனிதமான
பிரிவறுக்கு விளக்கமுிவரும் முன்னெடுத்து புனிதமான".

- புரோபோரிசுகூ

Over exposure to sun, excessive appetite, insufficient intake of
ghee and milk, anger, excessive intake of pungent, excessive intake of
food which increases pitham, deep sorrow, loss of sleep and stressful
conditions promote Pitham.

"வின்மிக்கவும் வாழ்க்கை முடியாது"

- நெக்குண்டுடன் நெக்குண்டு நெக்குண்டு நெக்குண்டு -1

Excessive intake of salty and bitter taste, increases Pitham.

Factors which promotes Kabam

Sweet and pungent, the taste which promotes kaba kuttram.

In Eri Gunnam vatha kuttram and pitha kuttram are predominately
vitiated.

"குண்டுடன் குண்டு குண்டு வாழ்கு"
The vitiation of vatham and pitham are due to irregular food habits and physical activities etc. As a result of vitiated vatham and pitham, uthaan, abaanan, samaanan and anarpitham are vitiated.

The vitiation of the above resulted in indigestion, pain in the abdomen, bloating, increased peristalsis and vomiting etc. which are the signs and symptoms of Eri Gunmam. The persistance of the above results in debilitation of udal kattugal.

**SEVEN UDAL KATTUGAL**

There are seven primary tissues which constitute the entire human body and all the organs of the various systems.

1. **Saaram**

   It is the end product of digestive process. It gives strength to the body and mind.

2. **Senneer**

   The Saaram after absorption is converted into senneer. It is responsible for knowledge strength and healthy complexion.
3. Oon

It gives figure and shape to the body. It shapes the body according to a person’s work.

4. Kozhuppu

It lubricants the organs and facilitates their function.

5. Enbu

Gives shape to the body helps locomotion and protects vital organs.

6. Moolai

Present in side the bone and it gives strength maintains the normal condition of the bone.

7. Sukkilam / Suronitham

Responsible for reproduction.

In Eri Gunmam Saaram and Seneer are affected.

1. Affected Saaram produces Loss of appetite, Tiredness.

PINIYARI MURAIMEI [DIAGNOSTIC METHODS]

The diagnostic method to find out the disease in siddha system is known as ‘Piniyari muraimai’.

It is very important part of the treatment. It is helpful to select the correct line of the treatment and good prognosis.

It is based on the following principles.

1. Porial Arithal
2. Pulanal Arithal
3. Vinathal

I. Poriyal Arithal

Poriyal arithal means the art of perception five organs viz.

1. Skin
2. Tongue
3. Eyes
4. Nose
5. Ears

II. Pulanal Arithal

It is an art of knowing objective series viz.

1. Touch
2. Hearing
3. Vision
4. Taste
5. Smell.
III. Vinathal (Interrogation)

The Physician should interrogate about the patients name, age, sex, occupation, native, socio-economic status, dietary habits, prone to any allergens, complaints, history of previous illness, history of habits and frequency of attacks. If the patient is in the stage of inability to speak or a child, physician should interrogate the details with his immediate relatives who are taking care of him.

ENVAGAI THERVUGAL

The important method adopted to diagnose the disease is by means of Envagai thervugal. The value of Envagai thervugal is very important for diagnosing purpose, which is unique and special method describing in siddha system of medicine.

In Agasthiyar Vaidhya vallathi 600, Envagai thervugal has been mentioned as “Attavitha paritchai”

“நிகழ்வுத்துறு எல்லறு பரிசு காணல்
சுருக்குத்துறு பரிசுகள் நிகழ்வுத்துறு
பதைக் கற்குழு விளையாடி புகைப்படுத்து
பக்திநுட்பம் பார்க்கும் கருநகர்
மதுக்குசு விளையாடி இந்தும்பரு
மலரம் கர்க்கின் நிகழ்வுத்துறு
சகிகுசு மலர்காட்பர் கருநகர்
சக்கர் மின்னநோய் பார்க்கும் கருநகர்

- வகைகலையில் செய்தியில் மலர்காட்பர் 600
The Envagai thervugal are

“தோட்ட இந்துக்கர் நுருவே் நோர்பே்
சொந்த தாய்கைத்தை போர்த்துகை கொண்டு”

- ஒருத்தையன்

Envagai thervugal constitute

1. Naadi  5. Mozhi
2. Sparism  6. Vizhi
3. Naa  7. Malam

1. NAADI (PULSE)

The study of ‘Naadi’ is the important factor in Envagai Thervugal which gives almost correct diagnosis. The unique factor which is responsible for the soul in the body is known as ‘Naadi’. Naadi may be studied in ten places in the body, which are heel, genital organ, abdomen, chest, ear, nose, neck, hand, eyebrow and vertex. But the study of naadi at hand is the best because the radial artery is located superficially.

Naadi must be studied in right hand for men and left hand for women. The three uyir thathukkal are formed by the combination of

Edakalai + Abaan - Vatham
Pinkalai + Piraan - Pitham
Suzhumunai + Samaan - Kabam
They can be felt one inch below the wrist in the radial side by means of palpation and percussion with the tip of the index, middle and ring fingers, corresponding to Vatham, Pitham and Kabam respectively.

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

"அரங்களத்தாக வருந்துகின்ற Michael
நாட்டில் தான் பக்களின்
பார்வோபர்கள் வல்லாகின்
இம்மாதிக்கனவும் மாடு
மாகத்தின் புரோட்டின் வெளி
க்காணிச்சமையும் போன்று
செந்திகள் நெந்தள் விளக்கம்
செந்திகள் விளக்கும் குறிப்பிட்டு
செந்திகள் விளக்கும் குறிப்பிட்டு
அக்கத்தின் சிந்துமரம்

In the Gunma noi, following naadi can be felt, commonly Vatha Naadi, Pitha Vatha Naadi, Vatha Pitha Naadi.

Vatha Naadi.

"காளிேளியல் னேனுறல் வாக்களின்
சுவாமியையும் மும்பாயப்பட்டவதின் குருவியலனை
சுவாமியின் குருவியல் மும்பாயப்பட்டவதின்
குருவியலன்று குருவியல் மும்பாயப்பட்டவதின்
சுவாமியின் குருவியல் குருவியலன்று
சுவாமியின் குருவியலன்று குருவியலன்று
சுவாமியின் குருவியலன்று குருவியலன்று
சுவாமியின் குருவியலன்று குருவியலன்று
செந்திகள் விளக்கும் குறிப்பிட்டு
செந்திகள் விளக்கும் குறிப்பிட்டு
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செந்திகள் விளக்கும் குறிப்பிட்டு
ஆக்கத்தின் சிந்துமரம்

- குருவியலன்.
Pitha Vatha Naadi

“சிரூர்பார் வித்தியாவின் பகுதி
சிறியவற்றுடன் தருவியிருந்தான
tொருநேரத்தாக தரும்படி தமிழில்
புனையான சிக்கு வலிமையுள்ளது மட்டும்
அதிகமான வருடங்கள் புதிதம் விளக்கம்
அவ்வப்போது பொருளிட்டார் மூன்று வருடங்கள்
விளக்கக்கான விளைவிலே சுடுவிற்கு
முன்னதான தொன்மையம் விளையாடினார்”

- கிழக்கிராம.

Vatha Pitha Naadi

“வாத்து வீதியான கல்ச
மைக்கவை செறிவு பொருளாக
இருட்பது தமிழில்
சிக்கு வலிமையான மட்டும்
அதிகமான வருடங்கள் புதிதம் விளக்கம்
அவ்வப்போது விளையாடினார்
விளையாடினார் விளையாடினார்”

கிழக்கிராம.

பிற்பு பிள்ளியான வாத்து வீதியான செறிவு பொருளாக விளையாடினார்.

“துணைப்பார் வித்தியாவின் பகுதியாக
சமான அரச விளையாட்டு கதிரைக்கு
சிக்கு வலிமையான விளையாட்டு கதிரைக்கு
சமையல் வழிமுறையல் இடைவெளியை
விளையாட்டின் புதிதம் விளையாட்டு
சமையல் காலம் காண்க விளையாட்டின்
சிக்கு வலிமையான மட்டும்
அதிகமான வருடங்கள் புதிதம் விளக்கம்
விளையாடினார் விளையாடினார் விளையாடினார்”

- கிழக்கிராம.
2. SPARISAM (PALPATION)

By sparism the temperature of skin (heat and cold), smoothness or roughness, sweat, dryness, hard patches, swelling, growth of abdominal organs, tenderness and nourishment can be felt.

In Eri Gunmam, Tenderness is present in the epigastric region.
3. NAA (TONGUE)

By the examination of tongue its colour, coating, dryness, deviation, movements, variation in taste, ulcer and the condition of teeth and gums, ability to appreciate the taste can be noted.

In Eri Gunmam the tongue may be coated. If anaemia is present the tongue is pale.

4. NIRAM (COLOUR)

By the examination of niram the type of thegam (body), cyanosis, redness, pallor, yellowish discolouration can be noted.

Vatha Thegi → Dark colour
Pitha Thegi → Yellow or red colour
Kaba Thegi → White or yellow colour

5. MOZHI (SPEECH OR VOICE)

In the examination of mozhi, the pitch of voice (low or high), slurring and speech in hallucination can be noted.

6. VIZHI (EYE)

By the examination of vizhi, pallor, redness, yellowishness, dryness, lacrimation, sharpness of vision must be noted.

7. MALAM (STOOLS)

By the examination of malam its nature, colour, quantity, presence of blood or mucus can be noted.

In Eri Gunmam diarrhoea may be present.
8. MOOTHIRAM (URINE)

The examination of urine is classified into two types.

i. Neerkuri

ii. Neikuri

"அந்தாடி நரீர்குரி அகிலரே பயணம்
அந்தாடி அகிலரே கண்டுபிடித்து
நூற்றாண்டு முதல் இன்னும் உண்டாகலாசு
அடிகரை கொடும் கற்பிள்ளை கைகையும்
நூற்றாண்டு முதல் வருடமாண குழியிற்கு
நினைத்தேன் நூற்றாண்டு பிறிக்க அரங்காகாணாவின் நாலாகாணாம்."
- குறிப்பிட்டு கண்டுபிடித்து

Preparation of Patient

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

இப்பட்டு முதல் பிற்காணம்

"அந்தாடி பயணம் முதல் குறிப்பிட்டு விளக்காகியும்
கதவாக வரும் விளக்காக அரங்காகாணாம் நான் கண்டு

i. NEERKURI

1. Niram - Niram indicates the colour of urine voided.
2. Edai  - Edai indicates the amount of urine
3. Manam - Manam indicates the smell of the urine voided.
4. Nurai - Nurai indicates the frothy nature of the urine voided.
5. Enjal - Enjal indicates the quantity (increased or decreased) of urine voided.
In addition, frequency of micturition and sediments are noted.

ii. NEIKURI

"மிக்க ஒளி அதிகமாக விளக்கு விளிப்
ஒளியின் பகுதியிலும் பார்வீதியினும் விளிப்பிட்
சம்பந்தத் தினசரியிலிருந்து வரும் காலக்கு
நிலடி முறையில் பார்வீத விளிப்பிடும்
சம்பந்தத் பகுதியில் வேறுபாடுபட்டாக முற்பிடும்"

- குருதை

Method

Early morning urine is collected in a glass container and examined within 1½ hours. A drop of gingelly oil is added side of the vitreous without disturbing. The nature of the spread of oil should be noted in direct sunlight.

Observation:

If drops of oil,

Lengthens like a snake → Vatha neer
Spreads like a ring → Pitha neer
Appears like a pearl → Kaba neer

Spreads like,

Snake in ring
Ring in pearl → Thontha Neer
Snake in pearls etc
Beside Envagai Thervugal a disease can also be diagnosed by means of other methods namely kanmenthiriyangal, gnanaenthiriyangal, uyir thathukkal, ezhu udal thathukkal, paruva kalangal and thinaigal.

Hence a through knowledge about the disease can be studied out systematically and properly in siddha system of medicine.

**THINAIGAL**

Nilam is classified in to five types. They are,

1. **Kurinji**

   Mountain and its surroundings. Kaba noigal and liver diseases are common.

2. **Mullai**

   Forest and its surroundings. Pitha noigal, vatha noigal and liver diseases are common.
3. **Marutham**

Field and its surroundings. Safest place to maintain good health.

4. **Neithal**

Sea and its surroundings. Vatha diseases and liver enlargements are common.

5. **Paalai**

Desert and its surroundings. Vatha, Pitha, Kaba noigal are common.

Studies of five lands are very much needed as some diseases are common in the particular lands.

Each region has its own characters which influences the inhabitation, physical, mental, economic, occupational and cultural activities. In each region same ailments are endemic based on the climatic features. Prevention and curative measures for these ailments are stated in medical literatures.

Eri Gunmam is common in Mullai, Neithal and Paalai.
PARUVAKAALANGAL

A year is classified into six seasons each constituting two months.

They are

1. Kaarkaalam - Avani & Purattasi - Aug & Sep
2. Koothirkaalam - Iyppasi & Karthigai - Oct & Nov
3. Munpani Kaalam - Margazhi & Thai - Dec & Jan
4. Pinpani Kaalam - Masi & Panguni - Feb & Mar
5. ElavenilKaalam - Sithirai & Vaikasi - April & May
6. Muthuvenilkaalam - Aani & Aadi - June & July

Some of the diseases are commonly prevalent during a particular season and study of its will also be useful for diagnosis.

UDAL VANMAI

It means strength and Vitality of the body and classified into three types.

1. Eyarkkai Vanmai - Inherited immunity
2. Kala Vanmai - Age, season and time
3. Seyarkkai Vanmai - Improvements of 3 vitality obtained by diet, day to day habits and physical exercise.
KAALAM | AGE AND DISTRIBUTION |

In Siddha text, the normal human life is 100 years. It is divided into 3 stages based on dominant humours.

<table>
<thead>
<tr>
<th>Stage</th>
<th>Years</th>
<th>Dominant Humours</th>
</tr>
</thead>
<tbody>
<tr>
<td>First Stage</td>
<td>First 33 years and 4 Months</td>
<td>Vatha period</td>
</tr>
<tr>
<td>Second Stage</td>
<td>Second 33 years and 4 months</td>
<td>Pitha Period</td>
</tr>
<tr>
<td>Third Stage</td>
<td>Third 33 years and 4 months</td>
<td>Kaba Period</td>
</tr>
</tbody>
</table>

DIFFERENTIAL DIAGNOSIS

1. PITHA GUNMAM

“இருக்கும்போது கன்னக்கு தாம்பர் வட்டம்
என்றும் அதிர்வரப்படும் வேல்வுத்
மக்களின் மகிழ்ச்சிக்கு மேல் முருக்கு
மைக்கப்பட்டு நீர்த்துவமுடி விளக்கப்படும்
முன் நடுப்பானது கச்சியந்த வேல்வு
முன் நடுப்பானது கச்சியந்த வேல்வு
பிந்தைய கிளையை கிளையை கூட்ட வட்டம்
முருக்கும் முருக்கும் வேல்வு வாதிக்காலம்”.

- புரணுமாந்தியம் சிற்சாந்தனி
Yellowish discolouration of the face, nausea, vomiting, excessive sputum, hyperpyrexia, pain in the upper and lower limbs, giddiness, haematuria, excessive thirst, constipation and dyspnoea.

In Eri Gunmam there is no yellowish discolouration of the face, haematuria, hyperpyrexia and excessive sputum.

2. VAYU GUNMAM

"Vaayu gunmam mantakalvum maruthi mukkalum
mahayathum maruthikum mahapand.Inject
valayathum karuthum veeram maanattum.\n
valayathum lakshamulam kiliyamakam.

Aravananu yuranjanam nimmukam

Vavaayu gunmam malayum kathirum maan

kilakkomata nithintum veeram nithantakam.

- Maanikyanarayanan Venkateswaran

Indigestion, loss of appetite, borborygmus, malaise, tiredness, general debility, lower abdominal pain.

In erigunmam there is no lower abdominal pain.

3. VALI GUNMAM

"Vali gunmam maanikadal sukurum veerum

karuthum evamrutam karuthum kiliyamakam

maanikadal maanikadal karuthum maanattum

maanikadal maanikadal kiliyamakam

"
Abdominal bloating, dryness of the skin, mental confusion, disturbed sleep, loss of appetite, pain in the hypochondrium, pain in the vertebral column and hip, hyperpyrexia and false appetite.

In Eri Gunmam there is no pain in the vertebral column and hip, and hyperpyrexia.

**FINAL DIAGNOSIS**

After the confirmation of diagnosis as Gunmam, the type of the Gunmam is confirmed by comparing the identities and differences of the signs and symptoms and the results obtained by Envagai Thervugal, Naadi and Mukkutram.

**THEERUM, THEERA NILAI**

"According to Dhanvanthiri vaidhyam Eri Gunmam is a curable disease by the treatment."
“அந்தாந்தச் சமநித்து சாதானம்
உருது கது விலங்கடை கருநீகரம்
ஏற்றுமண்டல் கினியா பாணிதான் காசையால்
........................................
........................................ நிரந்தரமும் விளக்கும் வந்து
நிறக்குருதியும் வருமுறையாலும் நாகத்தைத் தரியும்”.
- சுகரிஜேஷ்

“நாகப்பிள்ளையான விளக்கமும் விளக்கும் இரண்டு
........................................
பிட்டார் கினியா கது காசையால்
மேல்நோக்கம் நிறக்குருதியும் வருமிடயும் காசையால்
வந்துருதியும் வருமுறையாலும் பாசிணியும்”.

“நந்திக்கார் பிள்ளையான வந்து
காசையா நிரியியும் காசையால்
........................................
நந்திக்கார் வந்து விளக்கும்
அன்றான் ஆண்டம் முறுக்கி காசையால்

“பாதமணையான அந்தாந்தச் சாதானம்
பிட்டார் கினியா பாதமணையான அந்தாந்தச் சாதானம்
காசையா நிரியியும் விளக்கத்தைத்
........................................
நிறக்குருதியும் வருமிடயாலும் பாசிணியும்”.
- சுகரிஜேஷ்

According to Sathaga Naadi, the Gunmam which is associated with oedema, colic pain, dysentery, hiccough, dyspnoea, unconsciousness are the signs of bad prognosis and leads to death.
TREATMENT (PINI NEEKAM / MANAGEMENT)

The aim of pini neekam is based on

1. To bring the thirithosha in equilibrium
2. Treatment of the disease signs and symptoms
3. Pathiyam.

Siddha system of medicine is based on the mukkutra theory and hence the treatment is mainly aimed to bring down the thirithosha to its equilibrium state and thereby restoring the physiological condition of various thathus.

"முதிர்ச்சூட்டின் வரத்து அம்பும்"
"முதிர்ச்சூட்டின் வீழ்வு குழுமம்"
"வதில் அதிர்ச்சூட்டின் குழுமம்".

- இந்திய ணோய் இந்திய முக்குட்டிய

Vatha disease can be brought down by viresanam, Pitha disease can be brought down by vamanam, Kaba disease can be brought down by nasiyam and anjanam.

"தைத்துக்காட்டு புதுமையை தன்மை வந்து" - இந்திய ணோய்
"தைத்துக்காட்டு தன்மையை விட்டுத்தேன்
இதுத்துக்காட்டு விட்டுத்தேன் தன்மையை விட்டுத்தேன்" - கிருஷ்ணம்

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Since the Eri Gunnam occurs due to the vitiation of vatham and pitham, it can be set right by giving viresanam and vamanam.

For viresanam strong purgatives containing nervalam are usually avoided and laxatives like Nilavagai choornam – 5 to 10 gm with hot water at bed time is given for this study.

For vamanam and viresanam any one of the following may also be given.

1. Sanjeevi Mathirai - 1 to 2 pills with sufficient amount of honey and Illai Kalli Juice early in the morning.

2. Vasambu decoation - 15 to 30ml early in the morning.

3. Vamana Kashayam - 30 to 60ml early in the morning.

4. Kumatti ennai - 10 to 15ml early in the morning

5. Siddhathi ennai - 5 drops early in the morning

6. Merugulli ennai - 8 to 15ml early in the morning.
According to the patient’s body built and severity of the disease the selection of the medicine and dosage may be altered.

**TREATMENT OF DISEASE**

After the thirthosha are brought down to its equilibrium state the signs and symptoms of disease should be treated properly for this study.

- **Manimanthirathy choornam**: 2mgs BD with hot water
- **Guduchiyathy Kashayam**: 90ml BD.

**PREVENTION OF DISEASE**

Thiruvalluvar says that when a patient approaches a physician for a disease, the physician should follow some important points.

1. Diagnosis of disease
2. Causes of disease
3. Treatment of disease.

> “திருவள்ளுவர் உபயோகிதை வந்தவரை ஆர்வும். கொண்டுள்ள இலங்கையில் முற்பாடு பணி செய்து.”

-Thiruvalluvar

Thiruvalluvar also says some preventive measures

> “சென்றிகள் வைத்தாலோம் வாசகத் தனியுடன் அளிக்கவே ஆர்வு விக்ரத்தியும்”

> “ஆர்வு விக்ரத்தியும் கல்விப்பாடு வாழ்க்கை தடுப்பாய முற்பாடு மறித்து”

> “வைத்தால் வாழ்வை சுற்றியல்லோ வாழ்வை அடைத்தால் வழிப்பெற்று பயிர்”.
During the course of the treatment all the patient were given uniform hospital diet. The patients also advised to follow certain precaution and physical activities. Advised to get rid off spicy foods, alcohol, stress and strainful condition, roughage diet, semi cooked and unhygienic diet. Patients were advised to avoid non – vegetarian diet. Advised to take regular meals.

HABITS

Patients were advised to get rid off the smoking, alcohol, chewing tobacco etc., advised to have timely diet.

YOGASANA TREATMENT

Yogasana according to Thirumanthiram is basic principle science for achieving salvation during life itself. As the body is said to be the residence of divinity the saint Thirumoolar has advised each and every individual who aspires for self realization to build up his physical body and mind to practice yogasana.
In Yogam, asanam is the first step in practice. By practicing yogasana the physical body and the mind are brought under control aiding. Perfect meditation and concentration which will enable to achieve vivegam, essential for self realization. The concise aim for yogam is to possess sound body and sound mind to achieve longevity for attaining salvation, if the body falls pray to several diseases, constantly the mind gets perverted leading to last prejudice misunderstanding or ignorance.

Asanas are nothing but a sort of yogic exercise, which differs from physical exercise. Thirumoolar in his Thirumanthiram describes the uses of yogasana under the heading “Attanga Yoga”.

The asanas are strongly advocated for controlling Eri Gunnam. The technique of practicing it is to be learnt under the guidance of a yogasana specialist who has the knowledge of disease process.

The following asanas are useful to treat the abdominal disorders.

- Uthana Padhmasanam
- Bhujangaasanam
- Salabasanam
- Patchimoathasanam,
- Pavanamukthasanam
- Savaasanam.

- கிருந்துப் பதவகாசம்
MODERN ASPECTS

ANATOMY

Anatomy of the Stomach

The stomach is a muscular bag. It is the most dilated part of the gastrointestinal system. It has both digestive and not digestive functions. It’s development is in the foregut. It is situated in the upper abdomen, left hypochondriac, epigastric and umbilical regions.

It is normally J shaped.

Capacity

New born  →  30 ml
At puberty  →  1000 ml
Adult       →  1500 to 2000 ml

Shape

When empty the stomach is somewhat J shaped. When partially distended it becomes piriform in shape. In obese persons it is more horizontal.

Size

It is about 10 inches long and the mean capacity is one Ounce (30 ml) at birth, one litre at puberty and 1.5 - 2 litres or more in adults.
External Features

The stomach has

1. 2 openings or ends (orifices)
2. 2 borders.
3. 2 surfaces
4. 2 peritoneal sacs are related to it.
5. 2 omenta are attached to it.

Openings of the Stomach

Cardiac end

This is the upper opening of the stomach. This is not an anatomical sphincter. The oesophagus opens into the stomach at the level of T_{11} vertebra.

Pyloric end

This is the lower opening of the stomach. It is situated 1.25 cm to the right of the midline at the transpyloric plane. It opens into the duodenum. It has a well-defined anatomical pyloric sphincter. Pyloric groove separates it from the duodenum. The pyloric end is greenish as it is stained by the bile.

Borders of the stomach

It has 2 borders

1. Lesser Curvature.
2. Greater Curvature.
Lesser Curvature

It is the right upper border. It is the direct continuation of the right border of angularis. Lesser curvature gives attachment to the lesser omentum. A peptic ulcer commonly occurs along or nearer to the lesser curvature.

Greater Curvature

It is the lower and left border of the stomach. It is 5 times longer than the lesser curvature. Between the oesophagus and greater curvature the cardiac notch is situated.

To the greater curvature the following peritoneal folds are attached,

1. Gastrophrenic ligament.
2. Gastro Splenic ligament.
3. Greater Omentum

Surface of the Stomach

It has two surfaces,

1. The antero superior surface.
2. The postero inferior surface.

Structures forming the stomach bed

1. The diaphragm (left crus)
2. The left kidney.
3. The left supra renal gland.
4. The splenic artery and spleen.
5. Body of the Pancreas.
6. The transverse Mesocolen.
7. The left colic flexure.

**Parts of the Stomach (Fig.1)**

1. Fundus
2. Body
3. Pyloric Antrum
4. Pyloric canal.

**Fundus**

It is the highest part of the stomach. Usually it is filled with gas.

**Body**

It is situated below the fundus.

**Pylorus**

It is situated along the right side of the body of the stomach.

**BLOOD SUPPLY**

**ARTERIAL SUPPLY**

**Along the lesser Curvature**

1. Left gastric artery from coeliac artery.
2. Right gastric artery from hepatic artery.

**Along the greater Curvature**

1. Right gastroepiploic artery from the gastroduodenal artery.
2. Left gastroepiploic artery from the splenic artery.

**Fundus of the stomach**

5-6 short gastric arteries from splenic artery.
Venous Drainage

Among the lesser Curvature

1. Left gastric vein.
2. Right gastric vein – into portal vein.

Among the greater Curvature

1. Left gastroepiploic vein into splenic vein.
2. Right gastroepiploic vein into superior mesentric vein.

Fundus of the Stomach

5-6 short gastric veins into splenic vein.

Nerve supply

Parasympathetic supply

1. Right and left vagus nerves via anterior and posterior gastric nerves.
2. Oesophageal plexus.

Sympathetic Supply

The greater splanchnic nerve (T₅ – T₉) joins the coeliac ganglion. From the ganglion post – ganglionic fibres continues to form the coeliac flexus.

STRUCTURE OF THE STOMACH

1. Serosa or Peritoneum which envelops the stomach completely except along the greater and lesser curvatures.
2. Musculosa of stomach are arranged as follows;
   a. Outer longitudinal
   b. Intermediate circular.
   c. Inner Oblique.
3. The submucous layer has only loose connective tissue.
4. The Mucosa is the innermost layer.
   The glands of the stomach are situated in the mucous membrane.
   a. The gastric glands are mainly mucous secreting.
   b. The glands of the fundus and most parts of the body contain 3 types of cells.
      ✷ The mucous neck cells.
      ✷ The chief cells of zymogenic of peptic cells.
      ✷ The parietal or oxyntic cells.

**LYMPHATIC DRAINAGE**

The stomach can be divided into 4 lymphatic territories.
1. Area A or pancreatosplenic nodes lying along the splenic artery.
2. Area B drains into the left gastric nodes.
3. Area C drains into the right gastroepiploic nodes.
4. Area D drains in different directions into the pyloric, hepatic and left gastric nodes.

**ANATOMY OF THE DUODENUM**

The duodenum is the shortest, widest, thickest, most fixed, supra umbilical, infra hepatic, posterior abdominal, proximal part of small intestine. It is developed from the foregut and midgut. Its length is about
25 cm. It commences at the continuation of the pyloric end of the stomach at the level of L₁ vertebra.

**Course**

The duodenum passes upwards, backwards and to the right side to the level of the neck of gall bladder. It forms the superior duodenal flexure. It then runs vertically downwards along the right side of the lumbar vertebral column, to the level of lower border of the L₃ vertebra. It terminates by becoming the jejunum at the duodenojejunal flexure at the level of body L₂ vertebra.

**Parts of the duodenum (Fig.2)**

It is divided into 4 parts,

1. First part or the superior part  5cm long
2. Second part or the descending part 7.5cm long.
3. Third part or the horizontal part 10cm long.
4. Fourth part or the ascending part 2.5cm long.

**First part of duodenum (Superior part)**

Its length is 5 cm. It is situated at the pyloric end of stomach to the superior duodenal flexure, on the right side of body of L₁ vertebra. It is greenish due to bile staining.

**Second part of duodenum (Descending part)**

Its length is 7.5 to 8 cm. It extends from superior duodenal flexure to the inferior duodenal flexure in the right side of the lumbar vertebral column from the lower border of L₁ to the lower border of L₃ Vertebra. It is slightly convex to the right side.
Third part of Duodenum

This is the longest part of the organ. It crosses the midline just above the umbilicus. Its length is about 10 cm. It extends from right surface of body of L₃ vertebra to the left surface of the body of L₃ vertebra.

Fourth part of duodenum

Its length is 2.5 cm. It extends from the level of anterior surface of abdominal aorta to the duodenojejunal flexure at the left surface of L₂ Vertebra.

Blood Supply

I. Part

1. Supra Duodenal artery of Wilkie
2. Retro duodenal artery

These both are branches of the gastro duodenal artery.

1. Infra duodenal artery – branch of right gastroepiploic artery.

II, III & IV parts

1. Superior Pancreatico duodenal Artery.
2. Inferior Pancreatico duodenal Artery.

Venous drainage

Veins accompany the arteries and ends in the superior mesenteric vein.
Sympathetic drainage

I part

1. Hepatic nodes.
2. Sub pyloric nodes.

II, III & IV parts

Pancreatico Splenic lymph nodes.

Nerve Supply

I part

Sympathetic Supply

By greater splanchnic nerve through the coeliac plexus.

Parasympathetic Supply

Posterior gastric nerve.

II, III & IV parts

Sympathetic Supply

Superior mesentric plexus.

Parasympathetic Supply

Vagus.
PHYSIOLOGY

Gastro intestinal functions are ingestion, digestion and absorption of food. Food provides necessary materials for tissue growth and repair and energy for doing work.

Food consists of carbohydrates, proteins, fats, vitamins, minerals and water. Most of these are made up of molecules, which cannot be utilized as such by our body cells.

Digestion is the process by which more complex food substances are broken down into simpler forms which are easily absorbed and assimilated by the cells.

The digestion can be classified as

1. Chemical digestion

2. Mechanical digestion.

The chemical digestion is effected by the enzymes present in the digestive juices secreted by the digestive glands namely,

a. Salivary glands - saliva

b. Gastric glands - gastric juice

c. Intestinal glands - intestinal juice

d. Pancreas - pancreatic juice

e. Liver - bile

GASTRO INTESTINAL SECRETION

Gastro intestinal secretion has both exocrine and endocrine
secretions. The endocrine cells have a wide spread heterogenous distribution in the mucosa of the digestive tract. Secretion is effected by active transport against electro chemical gradient.

The mechanical digestion is effected by the movement of the alimentary canal. The movements are

a. Mastication or chewing occurring in the mouth
b. Deglutition
c. Gastric movement
d. Small intestinal movements and movements of villi
e. Large intestinal movements
f. Defaecation

**DIGESTION IN THE MOUTH SALIVARY GLANDS**

Digestion in the mouth is carried out by the digestive juice saliva which is secreted by the salivary glands.

**SALIVA**

The volume of saliva secreted in 24 hours is 1000 – 1500ml during meal time the secretary rate is highest. During sleep it is less. It is colourless, cloudy and slimy. Reaction is slightly acidic. pH varies from 5.75 to 7.05. The pH of saliva is dependent on the relative concentration of free and combined CO₂

Forced breathing causes a decrease in the CO₂ and increased pH. Specific gravity of the mixed saliva is between 1.002 and 1.012.
COMPOSITION OF THE MIXED SALIVA

<table>
<thead>
<tr>
<th>Component</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water</td>
<td>99 to 99.5%</td>
</tr>
<tr>
<td>Solids</td>
<td>0.5 to 1.1%</td>
</tr>
<tr>
<td>Inorganic Salts</td>
<td>0.4 to 0.6%</td>
</tr>
<tr>
<td>Organic Substances</td>
<td>0.1 to 0.4%</td>
</tr>
</tbody>
</table>

Ptyalin is the salivary amylase. The optimum pH for amylase activity is 6.97 lingual lipase secreted by lingual glands initiates fat digestion. Immuno globulins founds in the saliva are IgA, IgG & IgM.

These act as antibodies against normal and abnormal organisms found in the mouth and the lumen of the gut.

Parotin is a hormone secreted by parotid and submaxillary gland.

Other organic substances present in the saliva are kallikrein. It has lubricating function, solvent and cleaning action. Mercury, Potassium, Iodide and Lead are excreted in the saliva. Morphine, Penicillin, Streptomycin and Chlortetracycline are also excreted in the Saliva. Ptyalin acts on boiled starch and converts it into maltose.

Digestion in the mouth is helped by the mechanical process namely mastication or chewing. This enables proper mixing of food with saliva and facilitates enzyme activity. The muscles of mastication are Masseter, Temporalis and Pterygoid muscles. These are supplied by the mandibular division of the trigeminal nerve.
Deglutition or swallowing movements occur about 600 times during the day. Deglutition takes place in three stages, the first stage in the mouth, second stage in the pharynx, and the third stage in the oesophagus.

FIRST OR ORAL STAGE

During the first stage, the food passes from the mouth into the pharynx. By the act of mastication, the food is softened and lubricated and the food bolus is placed over the dorsal surface of the tongue. The back of the tongue is elevated and retracted against the hard palate. The movement forces the food into the pharynx.

SECOND OR PHARYNGEAL STAGE

It begins as a reflex and is completed in a second. The food bolus is transmitted into the pharynx by the downward and backward movement of the base of the tongue. The entrance of food bolus into the pharynx gives rise to a strong peristaltic pushing the food into oesophagus.

THIRD OR OESOPHAGEAL STAGE

This is reflux in nature. The primary peristaltic waves arriving at the oesophagus from the pharynx continue into the oesophagus sweeping the bolus downward into the stomach. During the third stage these are pressure variations in the oesophagus.

The pressure pattern consists of an initial negative wave followed by the three positive pressure components. The 3 positive waves are due
to subsequent increase in the intra oesophageal pressure due to secondary peristaltic contractions and presence of food contents.

**LOWER OESOPHAGEAL SPHINCTER**

At the junction of oesophagus with the stomach, the musculature is well organized and constitutes the lower oesophageal sphincter. This is made up of three components.

- The oesophageal Stomach
- Gural part of diaphragmatic skeletal muscle
- Oblique or sling fibres of the stomach

The lower oesophageal sphincter remains tonically contracted during the period in between meals and relax upon swallowing. The LES is under neural control. Vagal stimulation and release of acetyl choloric causes contraction of the intrinsic sphincter.

**RECEPTIVE RELAXATION OF THE STOMACH**

As the oesophageal peristaltic wave passes towards the stomach, a wave of relaxation preceeds the constriction. Further the entire stomach and to a less extent duodenum becomes relaxed as this wave reaches the lower end of the Oesophagus.

**DIGESTION IN THE STOMACH AND DUODENUM**

Digestive juice in the stomach is the gastric juice, secreted by the gastric glands.
GASTRIC GLANDS

Tubular glands which extend from the bottom of the gastric foveola to the muscularis mucosa. On the basis of their location, the gastric glands are divided into cardiac glands which are short and tortuous and the fundic glands which are straight slender glands with narrow lumen and made up of Mucous cells, pepsinogen or chief cells and parietal or exyntic cells. The pyloric glands in the pyloric region of the stomach are short and tortuous.

Stimulation of parasympathetic vagus gives rise to secretion of the gastric juice rich in acid and enzymes. It also increases gastric secretion. The secretion is mediated through release of acetylchloine.

GASTRIC JUICE AND THE SECRETION

The gastric juice is the product of surface epithelium and the various glands. The volume of the gastric juice secreted in man is 1200 – 1500ml per day, pH become 2-3 when the gastric juice mixes with the food. Specific gravity is 1.002 – 1.004.

The major constituents are water, HCl, enzymes – pepsin, rennin, gastric lipase, gelatinase and mucus, electrolytes as sodium, potassium, calcium, phosphate, bicarbonate and sulphate.

HCl SECRETIONS

Hydrochloric acid is secreted by oxyntic cells parietal cells or secreting cells. These contain small channels called canaliculi which
communicate with the lumen of the gastric gland. The HCl is secreted by
the membrane of these canaliculi. It is an active process involving
expenditure of energy, O$_2$ utilization, CO$_2$ evolution and enzymes
systems participation. Secretion of 1gm molecular weight of HCl requires
expenditure of 10,000 gram calories of energy. The source for hydrogen
ions is water and the source for chloride ions is Nacl of blood. Hydrogen
ions are formed by dissociation of water into hydrogen and Hydroxyl
ions. This is the main source of hydrogen ions. The hydrogen ions
combines with OH ions H$_2$O and HCO$_3$ ions are released into the
interstitial fluid and blood.

In a simple way, the reactions involved are,

$$CO_2 + H_2O + NaCl \rightarrow HCl + NaHCO_3$$

**CONTROL OF GASTRIC SECRETION**

There are 3 Phases in gastric secretion – Cephalic, gastric and
intestinal phase; the gastric secretion is regulated by both nervous and
hormonal mechanism. The Parasympathetic vagus promotes gastric
secretion. The hormone gastrin stimulates gastric secretion and the
hormone entero gastrone inhibits gastric secretion.
CEPHALIC PHASE

Sight, smell, taste of food and even the thought of food brings about gastric secretion. Both conditional and unconditional reflexes are involved. This is also called psychic phase.

GASTRIC PHASE

The entry of food into the stomach brings about secretion of gastric juice. Distension of the stomach wall initiates local reflexes and brings about release of gastrin from ‘G’ cells. This phase accounts for more than 2/3 of the total gastric secretion and it lasts for several hours.

INTESTINAL PHASE

Entry of food into the duodenum brings about gastric secretion. This is mainly through the release of gastric hormone from the duodenal mucosa. There is only small quantity of secretion during this phase.

INHIBITION OF GASTRIC SECRETION

The entry of food into the small intestine initiates an enterogastric reflex through intrinsic nerve plexuses. This reflex inhibits gastric secretion. The inhibitory hormones of gastric secretion are enterogastrone, secretin and cholecystokinin, gastric inhibitory peptide (GIP) and vasoactive intestinal peptide (VIP).

GASTRIC DIGESTION

Inactive pepsinogen is converted into active pepsin by HCl. This acts on proteins and polypeptides and cleave peptide bonds adjacent to
aromatic aminoacids. Fats in the emulsified state are digested and converted into fatty acids and glycerol, For example egg fat.

**FUNCTIONS OF THE STOMACH**

1. Secretion of HCl – Kills many of the ingested bacteria and maintains sterility in the stomach.
2. Stomach as a storage organ – Resting volume is 50 -100ml. In the filled state the volume is 1500ml.
3. The parietal cells of gastric mucosa secrete intrinsic factor, promoting absorption of vitamin B$_{12}$ from the small intestine.
PEPTIC ULCER

DEFINITION

The term peptic ulcer refers to an ulcer in the lower oesophagus, stomach or duodenum, in the jejunum after surgical anastomosis to the stomach or rarely in the ileum adjacent to a Meckel’s diverticulum.

Ulcers in the stomach or duodenum may be acute or chronic, both penetrate the muscularis mucosa but acute ulcer shows no evidence of fibrosis, erosions do not penetrate the muscularis mucosa. (Fig. 4)

EPIDEMIOLOGY

The incidence of peptic ulcer is decreasing in many western communities, Asian countries, it still affects, at sametime approximately 10% of all adult males. The male to female ratio for duodenal ulcer varies from 5:1 to 2:1 in different communities whilst that for gastric ulcer is 2:1 or less. Variations in the incidence of gastric and duodenal ulcer occur between different countries and between different parts of the same country; the incidence of peptic ulcer is becoming more common in many developing countries. There is growing evidence that cigarette smoking prevents healing of gastric and duodenal ulcers and may be a factor contributing to their development.

The male to female ratio varies geographically, for example from 1:1 in USA, to 18:1 in India. The duodenal ulcer ratio varies widely from
place to place for example from 0:8 in Japan to 19:1 in Africa and 32:1 in India.

The incidence is reportedly high in Calcutta and low in Punjab, the incidence of peptic ulcer is recorded high in South India.

**AETIOLOGY - ETIOPATHOGENESIS**

**HEREDITY**

Patients with peptic ulcer often have a family history of the disease. This is particularly in the case with duodenal ulcers which develop below the age of 20 yrs.

**ACID – PEPSIN THEORY : VERSUS MUCOSAL RESISTANCE**

The gastric mucosa has an extraordinary capacity to secrete acid. Peptic cells (or) chief cells which present in fundus of the stomach secrete pepsin. Parietal cells scattered along the course of body and fundus secrete HCl by a process involving oxidative phosphorylation.

The estimated concentration of HCl secreted by parietal cells is approximately 160ml. Each secreted hydrogen ion (H⁺) is accompanied by a chloride ion (Cl⁻). For each hydrogen ion secreted into the gastric lumen, one bicarbonate ion is released into the gastric venous circulation, accounting for so called alkaline tide, bicarbonate is released from carbonic acid generated from carbon dioxide by parietal cell carbonic anhydrase.
Several mechanisms protect the gastric mucosa from hydrogen ions secreted into the lumen of the stomach. The surface epithelial cells secrete bicarbonate which creates an alkaline tale at the surface of the mucosa. This bicarbonate secretion is under the influence of mucosal prostaglandins. The tight junctions between the epithelial cells and their surface lipoprotein layer provide a mechanical barrier. The normal turnover of epithelial cells and gastric mucus also has a protective function. Collectively all these mechanisms can be described as the ‘Gastric mucosal barrier’.

Peptic ulcer disease is thought to result from an imbalance between gastric acid, pepsin and protective factors (mucosal barrier).

“NO ACID NO ULCER”

FACTORS REDUCING MUCOSAL RESISTANCE & NSAID’s

Several drugs, particularly those used in rheumatoid arthritis, will disrupt the gastric mucosal barrier. When as a pH below 3.5 it is undissociated and fat soluble, so that it is absorbed through the lipoprotein membrane of the surface epithelial cells, during absorption it damages the membrane and the tight junctions. It also inhibits prostaglandin shynthesis thus reducing bicarbonate secretion by the surface epithelial cells. Aspirin has been shown to be an important etiological factor in gastric ulcer in Australia, and this may also be so in other countries where is a high consumption of aspirin.
HELICOBACTER PYLORI INFECTION IN PEPTIC ULCER
(Fig.3)

In 1979 Robin Warren, an Australian pathologist, accidentally invented the curved spiral shaped bacteria that invades the gastric mucosa and causes ulcer. He named it as *Campylobacter pyloridis*. Later it was renamed as *Helicobacter pylori*. *H. pylori* is found primarily in deep portion of the mucous gel layer.

The *Helicobacter pylori* infection is strongly associated with chronic superficial gastritis leading to peptic ulcer. *H. pylori* reduces the resistance of gastric mucosa against acid and gastric ulcer result. It stimulates the gastrin secretion which in turn stimulates the acid production leading to the exposure of first part of duodenum to the excessive acidity producing duodenal ulcer. The formation of gastric metaplasia may also occur in the first part of the duodenum in response to the excessive acid. This gastric metaplasia allows the conclusion of *H. pylori* in the duodenum.

**OCCUPATIONAL FACTOR**

Peptic ulcer is common in South Indian agriculturists. It is also common in executives, doctors and industrialists.
SOCIO – ECONOMIC FACTORS

Poor socio-economical factor may be one of the factors in incidence of duodenal and gastric ulcers. In South India, duodenal ulcer is particularly prevalent among the poor people.

DIET

Peptic ulcer is associated with high consumption of refined, as compared with unrefined cereal and carbohydrate. The lack of protein deficient diet and untimely meals in these refined food resulting in a failure to buffer gastric acid. Mr.Henry jones has described that ingestion of refined cereals is the promino factor in the increased incidence of duodenal ulcer.

SMOKING, ALCOHOL AND DRUGS

Incidence of peptic ulcer is high among smokers than in among non smokers. Gastric ulcers tend to heal more rapidly in patients who stop smoking than in those who do not. Gastric ulcer commonly occurs in association with alcoholic cirrhosis. There is much suggestive evidence that and treatment with aspirin, phenylbutazone etc., may aggravate peptic ulcer incidence.

CONSTITUTIONAL FACTORS

Sex incidence male to female ratio for duodenal ulcer varies from 5:1 to 2:1 in different communities whilst that for gastric ulcer in 2:1 or less.
BLOOD GROUPS

Peptic ulcer tends to be more common in people with blood group “O”.

ASSOCIATION WITH ANXIETY AND PERSONALITY

Chronic anxiety, frustration, physical fatigue are personality traits.

ASSOCIATION WITH OTHER DISEASES

Peptic ulcers in association with almost all diseases, the incidents is noted in patient with achlorhydria namely pernicious anaemia and atrophic gastritis, gastric carcinoma, duodenal stasis, emphysema, corpulmonale, rheumatoid disease, cirrhosis of liver and tuberculosis.

PATHOLOGY

Chronic gastric ulcer is nearly always single, 90% are situated on the lesser curvature within the antrum or at the junction between body and antral mucosa.

Chronic duodenal ulcer is usually situated in the first part of the duodenum just distal to the junction of pyloric and duodenal mucosa 50% are on the anterior wall. More than one peptic ulcer is found in 10-15% of case. Acute ulcers or erosions are frequently multiple and are more widely distributed.

Types of peptic ulcer

1. Acute peptic ulcer
2. Chronic peptic ulcer
ACUTE PEPTIC ULCER

Acute peptic ulcers developing after head injury, burns, severe sepsis, surgery or trauma are termed stress ulcers. Gastric hyper secretion is the usual cause of acute ulcer after head injury, while the reflux of duodenal contents and mucosal ischemia may be responsible factors after burns or shock.

CHRONIC PEPTIC ULCER

1. Chronic gastric ulcer (GU)

2. Chronic duodenal ulcer (DU)

GASTRIC ULCER (GU)

Incidence of GU peaks in the 6th decade, approximately 10 yrs later than for DU. Slightly more than half of GUs occurs in males. The precise incidence of GU is not known, since many GUs are asymptomatic. Although DU is identified clinically more frequently than GU, most autopsy studies show an equal or greater proportion of GUs.

GUs is deep, penetrating beyond the mucosa of the stomach and are similar histologically to DUs, but usually with more extensive gastritis surrounding the ulcer. Almost all benign GUs are found immediately distal to the junction of the antral mucosa and the acid secreting mucosa of the body of the stomach. The location of this junction is variable. In general, antral mucosa extends approximately two thirds of the way up the lesser curvature and one-third of the way up the
greater curvature of the stomach. Benign GUs is rare in the fundus of the stomach.

**DUODENAL ULCER**

Duodenal ulcer is characteristically a chronic and recurrent disease. It is usually deep and sharply demarcated. More than 95% of DUs occur in the first portion of the duodenum and approximately 90% of those are located within 3 cm of the junction of the pyloric and duodenal mucosa.

DUs are usually less than 1 cm in diameter, rarely they are extremely large 3-6 cm in diameter (giant DUs).

DUs now appear to be approximately as common in males.

**CLINICAL FEATURES**

**DUODENAL ULCER – SYMPTOMS**

**1. EPIGASTRIC PAIN**

Epigastic pain is the most frequent symptom in duodenal ulcer. The pain is often described as sharp burning or gnawing. However, it may be ill defined, boring or aching or may be perceived as abdominal pressure or fullness or as a hunger sensation.

In approximately 10% of patients the pain is located to the right of the epigastrium. The pain of DU characteristically occurs 90 min to 3 hrs after taking food and frequently awakens the patient at night. It is usually relieved within a few minutes by food (hunger pain) or antacids.
Episodes of pain may persist for periods of several days to weeks or months.

Pain is aggravated by coarse foods, alcohol, nervous tension and undue fatigue.

Pain is episodic in nature occurring regularly each day for days of week at a time, then disappearing to recur weeks or months later. Between attacks, the patient feels perfectly well, and may eat and drink with impurity. Bouts of pain may at first last only a day or so at a time, and occur only once or twice a year. As the natural history evolves, however episodes begin to last longer and occur more frequently, so that in severe cases remissions of pain may be short lived and pain or discomfort becomes more or less persistent. The cause for those relapses is difficult to establish.

2. DISTENSION

Such individuals may complain of other symptoms such as a feeling of distension in the epigastrium or a poorly defined sense of unease after eating.

3. OTHER COMPLAINTS INCLUDE EPISODIC

Nausea, anorexia always relieves pain and when it is persistent may result in weight loss. Persistent vomiting in an ulcer subject usually indicates some degree of gastric out flow obstruction.
SIGNS

1. POINTING SIGN

    Ulcer pain is typically referred to the epigastrium, in the midline or to the right, it is usually localised so that the patient can indicate the site with one finger known as the “pointing sign”.

2. MUSCLE GUARDING OR RIGIDITY

    May be present with active ulcer or deeply penetrating ulcer.

3. PERISTALTIC WAVES

    May be observed in presence of obstruction gastric splash may suggest gastric retention due to duodenal ulcer near pylorus.

        Obstruction due to,

        a. Inflammation.

        b. Scarring due to surgeries.

4. OCCULT BLOOD IN STOOLS

    GASTRIC ULCER

1. EPIGASTRIC PAIN

    As with duodenal ulcer, epigastric pain is the most common symptom, but the pattern is less characteristics. The pain may be precipitated or accenuated by food and symptom relief with food or antacids is less consistent than with duodenal ulcer.
2. NAUSEA & VOMITING

In duodenal ulcer patient nausea and vomiting almost always indicate gastric outlet obstruction; in patients with GU they may occur in the absence of mechanical obstruction.

3. WEIGHT LOSS

Weight loss may occur due to anorexia or aversion to food developing from the discomfort produced by eating.

GUs tends to heal but then recur, often in the same location.

COMPLICATIONS

Complications of peptic ulcer are haemorrhage, perforation and gastric outlet obstruction and cancer.

1. GASTRO DUODENAL HAEMORRHAGE

2. ACUTE PERFORATION OF A PEPTIC ULCER

3. GASTRIC OUTLET OBSTRUCTION

4. DUMPING SYNDROME

5. TEA -POT DEFORMITY / “HANDBAG STOMACH”

6. HOURGLASS CONTRACTURE OF STOMACH

7. PENETRATION INTO PANCREAS

8. CARCINOMA OF THE STOMACH
DIFFERENTIAL DIAGNOSIS

1. CHRONIC INTESTINAL AMEBOIASIS

There is history of recurrent dysentery, caecum and pelvic colon are tender and cord like liver may be palpate and tender. Stool may show cysts of entamoeba histolytica.

2. CHRONIC CHOLECYSTITIS

There may be history of biliary colic and jaundice in the past murphy’s sign is positive. Rarely gall bladder may be palpating cholecystography settles the diagnosis by showing dysfunction of the gall bladder with or without store.

3. CHRONIC APPENDICITIS

There may be history of acute appendicitis in the past, mcburney’s point is tender, FTM and barium meal X-ray of stomach show normal finding but barium meal X-ray of appendix may show irregularity or no filling.

4. CHRONIC GASTRITIS

There is anorexia, discomfort in the upper abdomen without any definite tenderness, FTM shows low acid but excess of mucus in all samples, barrium meal X-ray shows coarse or fine gastric rugae.

5. CHRONIC PANCREATITIS

There may be history of acute pancreatitis in the past, pain radiating to the back may be present without definite relation with food,
steatorrhoea and diabetes mellitus may be present. Straight X-ray of the abdomen may reveal pancreatic classification.

6. ZOLLINGER- ELLISON SYNDROME

This is a rare disorder in which severe peptic ulceration occurs due to usually an adenoma or hyperplasia of the islets of the pancreas secreting large amounts of gastrin which simulates the parietal cells of the stomach excessively. The acid output may be so great that the acid tide may reach the upper small intestine, reducing the luminal pH to 2 or less, at this pH, pancreatic lipase is inactivated and bile acid may be precipitated, causing diarrhoea and steatorrhoea. Excessive gastric secretion results in large volumes on aspiration under ‘basal’ conditions. Pentagastrin does not increase the secretary rate much above basal values. Since the stomach is already continuously secreting at or near maximal rates.

The ulcer are often multiple and severe and may occur in unusual sites such as the jejunum or the oesophagus. The history is usually short and bleeding and perforations are common. The syndrome may present in the form of severe recurrent ulceration following a standard operation for peptic ulcer, the underlying cause not having been recognised. The diagnosis should be suspected in all patients with unusual or severe peptic ulceration, especially course barium meal examination shows abnormally course gastric mucosal folds. It may be confirmed by finding very high level of gastrin in the circulation.
INVESTIGATIONS

1. ENDOSCOPY IN GASTRO–ENTEROLOGY

Kusmaul who had witnessed sword swallowers at country fairs, felt that it should be possible to pass a tube down the oesophagus for direct visualisation of the interior of the oesophagus and stomach. Mucouliez studied gastro scope in 1881. By 1911, elsmer reported the use of gastroscope. In 1928, Schindler decided to build a flexible instrument. In about four years with help of optical from be devised the flexible gastro scope which was first demonstrated in may 1932. This flexible instrument may be said to have revolutionised gastroscopy. Benedict, tomenius and others added biopsy forceps or suction cups.

In recent years endoscopic photography still and motion, has become possible and gives excellent pictures. The flexible fibroscope now enables one to examine the oesophagus, stomach and duodenum and at the same time obtain biopsies and material for cytological examination.

It is used diagnosis purpose for the oesophagitis, oesophageal ulcer, gastric ulcer, duodenal ulcer, duodenitis, malignant cancer, biopsy can also be obtained to find out the gastric ulcer is benign or malignant.

FRACTIONAL TEST MEAL

The patient who was on starvation during the previous night is asked to swallow the ryles tube at 5 a.m and the entire stomach contents a fasting juice are aspired with a 20 ml record syringe. The patient is then
given a pint of warm gruel to drink. The gruel is prepared by boiling two table spoonfuls of the oatmeal in two pints of water until the quantity is reduced to one pint. Every 15 minutes not more than 15 ml of gastric content is now aspirated until 2½ hours have elapsed or until such time as 15ml can no longer be aspirated. These samples are examined for,

1. Total activity
2. Free HCL
3. Bile
4. Blood
5. Mucus
6. Starch and sugar
7. Lactic acid
8. Combined activity
9. Presence of pepsin
10. Total chloride

In a gastric ulcer, the curves of free HCl, and total activity are highly normal or just above the normal limit. Blood may be present in some of the specimen. The climbing curve is due to pyloric spasm which prevents regurgitation of bile or allows the acidity to rise continuously. Besides carcinoma, achlorhydria is found in pernicious anaemia, gastritis, chronic appendicitis etc., but association of blood in all the specimens is strongly suggestive of a carcinoma. Sometimes cancer cells and be demonstrated into washing after gastric levage.

This test is no more needed to make correct diagnosis of peptic ulcer except to exclude the role of vagotomy during surgical management.
EXAMINATION OF STOOL

Black and tarry stool (Melaena) is well known in peptic ulcer when the haemorrhage is large. Small haemorrhage need special chemical test for deduction (Motion for occult blood).

RADIOLOGICAL FEATURES OF PEPTIC ULCER (BARIUM MEAL SERIES) (Fig. 5)

Peptic ulceration only occurs in those parts of the alimentary canal which are bathed in the acid and pepsin secretions. The radiological features of peptic ulcer vary from a mild mucosal erosion to a malignant ulcer.

a. Sites of gastro duodenal ulcers – Acute gastric ulcer.

b. Acute duodenal ulcer.

c. Benign ulcers.

d. Malignant.

Although in clinical experience duodenal ulcer are far more frequent than gastric ulcer in the ratio of 10 or 20:1 they are approximately equal.

ROENTGEN SIGNS OF ULCERATION

The presence of a ‘fleck’ or crater. This sign represents the presence of barium and is regarded as essential for the diagnosis.
CHANGES IN THE NEIGHBOURING RUGAE

These are oedema, irregularity and the cart wheel appearance in which the rugae radiate from the fleck or crater.

Functional changes such as spasm, increase in peristalsis or irritability are common.

CHARACTERISTICS ASSOCIATED WITH THE SITE OR ULCERATION

Ulcers in the body of the stomach are more prevalent along the lesser curvature. Ulcers of the greater curvature are rare.

MUCOSAL RELIEF WITH SMALL AMOUNT OF BARIUM SHOWS

1. Barium sport or fleck.
2. Edematous mucosa at base.
3. Radiating rugae.
4. Coarse rugae often there.
5. When seen in profile it is an out pouching with a broad base. Most often on lesser curvature. But requires flourscopy in every degree of obliquity for demonstration.

RADIOLOGICAL FEATURES OF MALIGNANT GASTRIC ULCER

1. Irregularity in mucosa adjoining ulcer niche.
2. No peristalsis here.
3. The niche does not extend beyond line of stomach.

4. Associated duodenal ulcer usually indicated the gastric ulcer is benign.

5. Ulceration of greater curvature is usually malignant.

A less common site for ulcers is the pyloric but ever here it tends to occur along the lesser curvature. This ulcer produces a gastric stasis.

**DUODENAL ULCER**

The common site for duodenal ulcer is in the duodenal cap and they may occur on either anterior or posterior walls. Less frequently postbulbar area.

**Radiological features are**

**A. Acute penetrating or erosive stage**

1. Ulcer niche.

2. Edematous mucosal halo.

3. Thick pyloric rugae.

4. Spastic.

**B. Begining scar formation**

1. Ulcer niche.

2. Thickened surrounding mucosa.

3. Rugae converging like chart wheel spokes.

4. Pseudo diverticulum formation.

5. Bulb may appear fragmented on compression.
C. Late scarring stage

1. Niche or pseudo diverticulum.
2. Contracted deformed fibrotic bulb rigid walls.
3. Thick pyloric rugae.

Post bulbar ulcers shows deformed bulb.
MATERIALS AND METHODS

Clinical Study:

The Clinical study of Erigunamam was undertaken in post Graduate department of pothumaruthuvam, Govt Siddha Medical College, Palayamkottai.

20 patients were admitted for study period. According to their severity they were admitted as In-Patients and followed up as Out-patients.

The medicine was also subjected to trial with 20 Out-patients.

Selection of patients:

The patients were selected on the basis of the clinical findings of Epigastric pain, burning chest, nausea, vomiting, belching, flatulence, loss of appetite, diarrhoea.

Detailed history of the patient contains past, personal and family histories, diet, habits, occupational history, socio-economic status, smoking, Alcoholism, prolonged exposure to NSAID.

Siddha Diagnosis:

Siddha method of diagnosis with the following parameters, such as Thegam, Kaalam, Gunam, Mukkutram nilaigal, Envagai thervugal, UdalKattugal, poriyal arithal, Pulanal arithal, Vinathal etc.
The diagnosis of Erigunnam which correlates with peptic ulcer disease also made by physical examination of the patients as well as laboratory and radiological investigation.

**Investigations:**

All cases were subjected to investigations that include TC, DC, ESR, Hb, Blood Sugar, urea, cholesterol serum bilirubin, serum creatinine. Urine analysis for Albumin, Sugar, Deposits in the laboratory of Govt. Siddha Medical College Hospital.

Upper GI endoscopy was performed in Aarthi Scans, Palayamkottai.

**Management:**

According to tridhosa theory, laxatives are given first. So for this, “Nilavagai Chooranam” is recommended, 10gm with hot water at bed time was given before starting the specific treatment.

**Treatment:**

The trial medicine used in the present clinical study is Gunmathuku Chooranam 2gm (twice daily with water, before meals). All the patients were advised to follow the pathiyam (Dietary regimen) and best recovery of “Erigunnam”.

**Reference:**

Gunapadam mooligai vaguppu.
**Evaluation of trial medicine:**

The trial medicine was subjected to biochemical and pharmacological analysis in the respective laboratories of Govt. Siddha Medical College, Palayamkottai.

The observations were made for all In-patients and Out-patients. This results and observations were recorded properly in profoma.

At the time of discharge all were advised to follow further treatment in Out-patients department of Pothu Maruthuvam. Then they were advised to follow the personal hygiene, regular diet, adequate intake of water and mental relaxation by meditation and yoga etc.
RESULTS AND OBSERVATION

The results were observed in the following criteria by clinical study on 20 Inpatients and 20 Out patients.

1. Sex Distribution
2. Age Distribution
3. Kaalam
4. Constitution of body
5. Gunam
6. Religion
7. Socio-economic status
8. Aetiological Factors
9. Food habits
10. Family history
11. Clinical Manifestation
12. Mode of onset
13. Kosam
14. Kanmenthiriyam
15. Mukkutram
   a. Derangement of vatham
   b. Derangement of Pitham
   c. Derangement of Kabam
16. Ezhu udal kattugal
17. Envagai Thervugal
18. Neer Kuri
19. Nei Kuri
20. Examination of the Abdomen
21. Blood grouping
22. Gradation of Results.
1. SEX DISTRIBUTION.

Table 1 illustrates the distribution of sex

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Sex</th>
<th>No. of Cases</th>
<th>Percentage%</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>OP</td>
<td>IP</td>
</tr>
<tr>
<td>1.</td>
<td>Male</td>
<td>13</td>
<td>8</td>
</tr>
<tr>
<td>2.</td>
<td>Female</td>
<td>7</td>
<td>12</td>
</tr>
</tbody>
</table>

Males were affected more in OP study (65%)
Females were affected more in IP study (60%)

2. AGE DISTRIBUTION. (Fig A)

Table 2 illustrates the distribution of age.

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Age groups in years</th>
<th>No. of cases</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>OP</td>
<td>IP</td>
</tr>
<tr>
<td>1.</td>
<td>20 to 30</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>2.</td>
<td>31 to 40</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>3.</td>
<td>41 to 50</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>4.</td>
<td>51 to 60</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>5.</td>
<td>61 to 70</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>6.</td>
<td>71 to 80</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>7.</td>
<td>81 to 90</td>
<td>-</td>
<td>1</td>
</tr>
</tbody>
</table>

35% of OP patients were between age 41 to 50.
20% of OP patients were between age 31 to 40 and 51 to 60.
40% of IP patients were between 41 to 50 and 51 to 60 age.
3. KAALAM (Fig B)

Table 3 illustrates the distribution of Kaalam

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Kaalam</th>
<th>No. of cases</th>
<th>Percentage %</th>
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</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>OP</td>
<td>IP</td>
</tr>
<tr>
<td>1.</td>
<td>Vathakalam</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>(0-33 yrs)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Pithakalam</td>
<td>17</td>
<td>18</td>
</tr>
<tr>
<td>(34-67 yrs)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Kabakalam</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>(68-99 yrs)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Patients in pitha kaalam of age 34 to 66 was affected both in OP (85%) and IP (90%) trial groups.

4. CONSTITUTION OF BODY

Table 4 illustrates the distribution of Thegi

<table>
<thead>
<tr>
<th>Sl. No</th>
<th>Constitution of body</th>
<th>No. of cases</th>
<th>Percentage %</th>
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<tbody>
<tr>
<td></td>
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<td>OP</td>
<td>IP</td>
</tr>
<tr>
<td>1.</td>
<td>Vatha thegi</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>2.</td>
<td>Pitha thegi</td>
<td>10</td>
<td>11</td>
</tr>
<tr>
<td>3.</td>
<td>Kaba thegi</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>4.</td>
<td>Thontha thegi</td>
<td>5</td>
<td>6</td>
</tr>
</tbody>
</table>

Pitha thegi contributed 50% of OP and 55% of IP study group.
Vatha thegi contributed 15% of OP and 10% of IP study group.
Thontha thegi contributed 25% of OP and 30% of IP study group.
5. GUNAM

Table 5 illustrates the distribution of gunam

**TABLE 5**

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Gunam</th>
<th>No. of cases</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
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<td></td>
<td>OP</td>
<td>IP</td>
</tr>
<tr>
<td>1.</td>
<td>Sathuva Gunam</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2.</td>
<td>Rajo Gunam</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>3.</td>
<td>Thamo Gunam</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

All 100% cases of OP and IP trial group had Rajo gunam.

6. RELIGION

Table 6 illustrates the distribution of Religion

**Table 6**

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Religion</th>
<th>No. of Cases</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>OP</td>
<td>IP</td>
</tr>
<tr>
<td>1.</td>
<td>Hindu</td>
<td>16</td>
<td>18</td>
</tr>
<tr>
<td>2.</td>
<td>Christian</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>3.</td>
<td>Muslim</td>
<td>1</td>
<td>0</td>
</tr>
</tbody>
</table>

Hindus were affected 80% in OP study and 90% in IP study.
7. SOCIO-ECONOMIC STATUS. (Fig C)

Table 7 illustrates the socio economic status of the patients.

**TABLE 7**

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Socio- Economic Status</th>
<th>No. of cases</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>OP</td>
<td>IP</td>
</tr>
<tr>
<td>1.</td>
<td>Poor</td>
<td>6</td>
<td>10</td>
</tr>
<tr>
<td>2.</td>
<td>Middle class</td>
<td>12</td>
<td>10</td>
</tr>
<tr>
<td>3.</td>
<td>Rich</td>
<td>2</td>
<td>-</td>
</tr>
</tbody>
</table>

In OP trial group 60% of trial group belong to middle socio economic status, and 30% belong to poor socio economic group. In IP trial group poor and middle socio economic status accounted 50% age.

8. AETIOLOGICAL FACTORS. (Fig D)

Table 8 illustrates the Aetiological factors for disease.

**TABLE 8**

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Aetiological Factors</th>
<th>No. of cases</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>OP</td>
<td>IP</td>
</tr>
<tr>
<td>1.</td>
<td>Alcohol</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>2.</td>
<td>Smoking</td>
<td>8</td>
<td>6</td>
</tr>
<tr>
<td>3.</td>
<td>Irregular diet</td>
<td>15</td>
<td>16</td>
</tr>
<tr>
<td>4.</td>
<td>Psychological(stress and strain)</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>5.</td>
<td>Hereditary</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td>6.</td>
<td>Drug (NSAID)</td>
<td>10</td>
<td>13</td>
</tr>
</tbody>
</table>

40% of OP patients had history of alcoholism, smoking and stress.

75% of OP trial group had irregular dietary habit history.
80% of IP trial group had irregular dietary habit history.

50% of OP and 65% of IP trial group had history of extensive NSAIDS usage.

9. FOOD HABITS. (Fig E)

Table 9 illustrates the distribution of diet among the patients.

**TABLE 9**

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Food habits</th>
<th>No. of cases</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>OP</td>
<td>IP</td>
</tr>
<tr>
<td>1.</td>
<td>Vegetarian diet</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>2.</td>
<td>Mixed diet</td>
<td>19</td>
<td>19</td>
</tr>
</tbody>
</table>

95% of both IP and OP trial group had mixed diet.

10. FAMILY HISTORY

Table 10 illustrates the distribution of family history.

**TABLE 10**

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Family History</th>
<th>No. of cases</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>OP</td>
<td>IP</td>
</tr>
<tr>
<td>1.</td>
<td>Positive</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>2.</td>
<td>Negative</td>
<td>19</td>
<td>20</td>
</tr>
</tbody>
</table>

No positive family history is observed in IP patients.

5% of OP patients had positive family history.
11. CLINICAL MANIFESTATION:

Table 11 illustrates the distribution of clinical manifestation

**TABLE 11**

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Symptoms</th>
<th>No. of cases</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>OP</td>
<td>IP</td>
</tr>
<tr>
<td>1.</td>
<td>Epigastric pain</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>2.</td>
<td>Indigestion</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>3.</td>
<td>Nausea</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>4.</td>
<td>Vomiting</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>5.</td>
<td>Loss of appetite</td>
<td>7</td>
<td>10</td>
</tr>
<tr>
<td>6.</td>
<td>Heart burn</td>
<td>17</td>
<td>18</td>
</tr>
<tr>
<td>7.</td>
<td>Abdominal discomfort</td>
<td>10</td>
<td>12</td>
</tr>
<tr>
<td>8.</td>
<td>Nocturnal pain</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>9.</td>
<td>Altered Bowel habits</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>10.</td>
<td>Weakness/Tiredness</td>
<td>2</td>
<td>4</td>
</tr>
</tbody>
</table>

Epigastric pain is present in 100% of both OP and IP trial group.

Indigestion is present in 60% of OP and 65% IP trial group.

Heart burn is present 85% of OP and 90% of IP trial group.

Nocturnal pain is present in 40% of OP and 50% of IP trial group.

Abdominal discomfort is present in 50% OP and 60% IP Trial Group.
12. MODE OF ONSET

Table 12 illustrates the distribution of Mode of onset of the disease.

**TABLE 12**

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Mode of onset</th>
<th>No. of cases</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>OP</td>
<td>IP</td>
</tr>
<tr>
<td>1.</td>
<td>Acute</td>
<td>3</td>
<td>1</td>
</tr>
<tr>
<td>2.</td>
<td>Gradual</td>
<td>17</td>
<td>19</td>
</tr>
</tbody>
</table>

Gradual onset is found in 85% OP trial group and 95% of IP trial group.

13. KOSAM

Table 13 illustrates the distribution of kosam.

**TABLE 13**

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Kosam</th>
<th>No. of cases</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>OP</td>
<td>IP</td>
</tr>
<tr>
<td>1.</td>
<td>Annamaya kosam</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>2.</td>
<td>Piraanamaya kosam</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>3.</td>
<td>Manomaya kosam</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>4.</td>
<td>Vingnanamaya Kosam</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>5.</td>
<td>Aananthamaya kosam</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Annamayakosam was affected in 100% cases of both IP and OP trial group.

Piranamayakosam was affected in 25% of OP and 30% of IP trial group.

Manomayamkosam was affected in 40% of OP and 45% of IP trial group.
14. KANMENTHIRIYAM

Table 14 illustrates the distribution of disease with Kanmenthiriyam.

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Kanmenthiriyam</th>
<th>No. of cases</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>OP</td>
<td>IP</td>
</tr>
<tr>
<td>1.</td>
<td>Kai</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2.</td>
<td>Kaal</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3.</td>
<td>Vai</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>4.</td>
<td>Eruvai</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>5.</td>
<td>Karuvai</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Eruvai was affected in 25% of OP trial group and 30% IP trial group.

15. MUKKUTRAM

15.a Derangement of vatham.

Table 15.a illustrates the distribution of vatham.

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Vatham</th>
<th>No. of cases</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>OP</td>
<td>IP</td>
</tr>
<tr>
<td>1.</td>
<td>Piraanan</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>2.</td>
<td>Abaanan</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>3.</td>
<td>Viyaanan</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>4.</td>
<td>Uthaanan</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>5.</td>
<td>Samaanan</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>6.</td>
<td>Naagan</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>7.</td>
<td>Koorman</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>8.</td>
<td>Kirukaran</td>
<td>5</td>
<td>8</td>
</tr>
<tr>
<td>9.</td>
<td>Devaththan</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>10.</td>
<td>Dhananjayan</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
Viyaanan was affected in 100% of both OP and IP trial groups.

Samanan was affected in 100% of both OP and IP trial groups.

15. b. Derangement of pitham.

Table 15. b illustrates the distribution of pitham.

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Pitham</th>
<th>No. of cases</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>OP</td>
<td>IP</td>
</tr>
<tr>
<td>1.</td>
<td>Analapitham</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>2.</td>
<td>Ranjagam</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>3.</td>
<td>Sathagam</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>4.</td>
<td>Prasagam</td>
<td>-</td>
<td>2</td>
</tr>
<tr>
<td>5.</td>
<td>Aalosagam</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Analapitham was affected in 100% cases of both IP and OP trial groups.

15.c. Derangement of Kabam.

Table 15.c. illustrates the distribution of Kabam.

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Kabam</th>
<th>No. of cases</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>OP</td>
<td>IP</td>
</tr>
<tr>
<td>1.</td>
<td>Avalambagam</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2.</td>
<td>Kiletham</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>3.</td>
<td>Pothagam</td>
<td>6</td>
<td>8</td>
</tr>
<tr>
<td>4.</td>
<td>Tharpagam</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>5.</td>
<td>Santhigam</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Kiletham was affected in 100% of both OP and IP trial groups. Pothagam was affected in 30% of OP and 40% of IP trial group.
16. Ezhu udal kattugal

Table 16 illustrates the distribution of derangement of ezhu udal kattugal.

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Udal kattugal</th>
<th>No. of cases</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>OP</td>
<td>IP</td>
</tr>
<tr>
<td>1.</td>
<td>Saaram</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>2.</td>
<td>Senneer</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>3.</td>
<td>Oon</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>4.</td>
<td>Kozhuppu</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>5.</td>
<td>Enbu</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>6.</td>
<td>Moolai</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>7.</td>
<td>Sukkilam/suronitham</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Saaram was affected in 100% of both IP and OP trial groups.
Senneer was affected in 5% of OP and 20% of IP group.

17. ENVAGAI THERVUAL

Table 17 illustrates the distribution of envagai thervugal.

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Envagai thervugal</th>
<th>No. of cases</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>OP</td>
<td>IP</td>
</tr>
<tr>
<td>1.</td>
<td>Naadi (Thontha Naadi)</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>2.</td>
<td>Sparisam</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>3.</td>
<td>Naa</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>4.</td>
<td>Niram</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>5.</td>
<td>Mozhi</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>6.</td>
<td>Vizhi</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>7.</td>
<td>Malam</td>
<td>5</td>
<td>6</td>
</tr>
<tr>
<td>8.</td>
<td>Moothiram</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
Naadi was affected in 100% of IP and OP trial groups.
Sparisam was affected in 100% of IP and OP trial groups.

18. NEER KURI

Table 18 illustrates the distribution of Neer kuri.

Table 18

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Neer kuri</th>
<th>No. of cases</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>OP</td>
<td>IP</td>
</tr>
<tr>
<td>1.</td>
<td>Niram</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2.</td>
<td>Manam</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3.</td>
<td>Edai</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>4.</td>
<td>Nurai</td>
<td>1</td>
<td>-</td>
</tr>
<tr>
<td>5.</td>
<td>Enjal</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Nurai was present in 5% of OP trial groups each.

19. NEI KURI

Table 19 illustrates the distribution of Nei kuri.

Table 19

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Nei Kuri</th>
<th>No. of cases</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>OP</td>
<td>IP</td>
</tr>
<tr>
<td>1.</td>
<td>Vatha Neer</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>2.</td>
<td>Pitha Neer</td>
<td>6</td>
<td>4</td>
</tr>
<tr>
<td>3.</td>
<td>Kaba Neer</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>4.</td>
<td>Thontha Neer</td>
<td>2</td>
<td>4</td>
</tr>
</tbody>
</table>

Pitha neer was found in 30% of OP trial group and 20% of IP trial group.
Vatha neer was found in 60% of OP trial group and IP trial group each.
20. EXAMINATION OF THE ABDOMEN

Table 20 illustrates the Examination of the abdomen.

**Table 20**

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Examination of the abdomen</th>
<th>No. of cases</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>OP</td>
<td>IP</td>
</tr>
<tr>
<td>1.</td>
<td>Epigastric tenderness</td>
<td>18</td>
<td>20</td>
</tr>
<tr>
<td>2.</td>
<td>Pointing sign</td>
<td>20</td>
<td>20</td>
</tr>
<tr>
<td>3.</td>
<td>Rigidity of Rectus abdominis</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>4.</td>
<td>Visible gastric peristalsis</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>5.</td>
<td>Palpable Mass</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Epigastric tenderness was present in 90% OP and 100% of IP trial group.

Pointing sign was present in 100% of both OP and IP group.

21. Blood Grouping (Fig F)

Table 21 illustrates the blood grouping.

**Table 21**

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Blood Group &amp; Rh type</th>
<th>No. of cases</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>OP</td>
<td>IP</td>
</tr>
<tr>
<td>1.</td>
<td>O positive</td>
<td>13</td>
<td>11</td>
</tr>
<tr>
<td>2.</td>
<td>A₁ positive</td>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>3.</td>
<td>B positive</td>
<td>3</td>
<td>5</td>
</tr>
<tr>
<td>4.</td>
<td>A₁B Positive</td>
<td>3</td>
<td>4</td>
</tr>
</tbody>
</table>

65% OP trial group and 55% of IP trial group had O positive blood group.
22. GRADATION OF RESULTS. (Fig H)

Table 22 illustrates the Gradation of Results

<table>
<thead>
<tr>
<th>Sl. No.</th>
<th>Gradation of Results</th>
<th>No. of cases</th>
<th>Percentage %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>OP</td>
<td>IP</td>
</tr>
<tr>
<td>1.</td>
<td>Good Response</td>
<td>18</td>
<td>20</td>
</tr>
<tr>
<td>2.</td>
<td>Moderate Response</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td>3.</td>
<td>Poor Response</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

In Op study 90% had good response and 10% had moderate response.

In IP study 100% had good response.
DISCUSSION

The entity selected for clinical trial ERIGUNMAM, as explained in the text YUGI VAIDHYA CHINTHAMANI-800 was supposed to indicate peptic ulcer disease with concerned symptoms.

The trial drug GUNMATHUKKU CHOORANAM was subjected to scientific analysis for its anti ulcer activity. The trial drug had fruitful results in preclinical studies.

In clinical study, 40 patients were selected for the study. Among them 20 were treated as out patients and 20 were inpatients. The study was carried out as a randomised clinical study under the supervision of Professor, Reader, Assistant Lecturer of Post Graduate Pothu Maruthuvam Department, Government Siddha Medical College, Palayamkottai. The study was carried out in the outpatient and inpatient ward of P.G Pothu Maruthuvam department of Government Siddha Medical College, Palayamkottai. Laboratory investigations were carried out in the concern department of Government Siddha Medical College, Palayamkottai. Upper GI- Endoscopy was performed at Aarthi Scans, Palayamkottai.

All of the patients were selected as per the selection proforma and separate case sheets were maintained for all throughout the course of study.
As per the observations the following results are postulated.

1. **Sex variation:**
   
   In OP trial group male distribution was predominant contributing 65%. In IP trial group female distribution was predominant 60%.

2. **Age:**
   
   Regarding age distribution of the disease in IP trial group, age group between 40 to 60 was predominating. 41 to 50 in 40% and 51 to 60 is 40%. In OP trial group age group between 30 to 60 were predominating 31 to 40 is 20%, 41 to 50 is 35%, 51 to 60 is 20%.

3. **KAALAM:**
   
   The observational results reveals that in OP trial group about 85% of the patients were belonging to pitha kalam between age 34 to 66. In IP trial group, about 90% patients were affected at pitha kaalam.

4. **CONSTITUTION OF BODY:**
   
   From the IP trial group it was inferred that 55% of the patients affected were pitha thegi. In OP trial group 50% of the patients were pitha thegi. Hence pitha thegi patients were affected predominantly.

5. **GUNAM:**
   
   Observations reveals that 100% of both IP and OP trial group had Rajo gunam.
6. RELIGION:

Hindu patients in IP trial group dominated the distribution 90% and also in OP trial group 80%.

7. SOCIO ECONOMIC STATUS:

In OP study, 60% of trial group belong to middle socio economic status.

In IP study the distribution was equal 50% each of poor and middle socio economic status.

8. AETIOLOGICAL FACTORS:

In OP study observations reveal 75% of trial group had irregular dietary habit and in IP study 80% of trial group had irregular dietary habit.

The second predominating aetiological factor is NSAIDS usage which was 50% in OP trial group and 65% in IP trial group.

9. FOOD HABITS:

Both IP and OP trial reveals 5% each group had vegetarian diet. 95% of each group had mixed diet.

10. FAMILY HISTORY:

In OP trial group 5% patients had positive family history. In IP trial group no positive family history is reported.
12. CLINICAL MANIFESTATIONS:

   Epigastric pain was present in 100% of both IP and OP trial group.

   Heart burn was present in 85% of IP and 90% of OP trial group.

13. MODE OF ONSET:

   In OP trial group, 15% had Acute onset, 85% had gradual onset.

   In IP trial group 5% had acute onset and 95% had gradual onset.

14. KOSAM:

   In OP and IP study, annamayakosam was affected predominantly 100% each. Others like pirasamayakosam and manomayakosam were affected to a smaller extent.

15. KANMETHIRIYAM:

   Eruvai is affected in 25% of OP trial group and 30% of IP trial group.

16. MUKKUTRAM:

16(a). Derangement of vatham:

   Viyaanan was affected in 100% in OP and IP trial group. Viyaanan is affected due to epigastric pain.

16(b). Derangement of pitham:

   Analapirtham was affected (digestion was affected) in 100% cases of both OP and IP trial group. Ranjagam and prasagan were affected to some extent.
16(c). Derangement of kabam:

Kiletham was affected in 100% cases of both OP and IP trial group. Pothagam (excessive salivation) is also affected to some extent in both the OP and IP trial groups.

17.CHANGES IN UDAL THATHUKKAL:

Saaram was affected (weakness) in 100% cases of both OP and IP trial group. Senneer was affected (due to anaemia) in 5% OP and 20% IP trial groups.

18.CHANGES IN ENVAGAI THERVUGAL:

In both OP and IP trial group 100% had affected Naadi. They had elevated levels of Vatham and Pitha in Naadi.

Sparisam was affected in 100% of both OP and IP trial groups. (Epigastric tenderness was present).

Naa was affected 5% in OP group and 20% of IP group. (Pallor tongue)

5% of OP and 10% of IP group had affected Niram (Pallor skin)

5% of OP and 20% of IP group had affected Vizhi (Paleness of conjuctiva).

25% of OP and 30% of IP trial group had affected malam (Constipation /diarrhea).

19.CHANGES IN NEER KURI:

5% of OP trial group had presence of nurai in urine (albuminuria).
20. CHANGES IN NEIKURI:

In OP study revealed Vatha neer pattern of neikuri in 60%. Pitha neer pattern in 30% and thontha neer pattern in 10%. In IP study, vatha neer pattern was found in 60% of the group, Pitha neer pattern was found in 20% of the group, Thontha neer pattern was found in 20% of the group.

Observation:

Hence, Erigunmam patients mostly has vatha neer pattern in neikuri.

Abdominal examination revealed 90% of cases OP group had epigastric tenderness 100% of cases of IP group had epigastric tenderness. Pointing sign is positive is 100% cases of both OP and IP trial group.

In OP trial group 90% of patients had good response and 10% had moderate response.

In IP trial group 100% of patients had good response.

21. POSITIVE FINDINGS ON EXAMINATION:

Tenderness of epigastric region was found in 95% of cases and pointing sign present in 100% cases of trial group.
22. SIGNIFICANCE OF BLOOD GROUPING:

- 60% of the total trial group had O+ve blood group.
- 20% of the total trial group had B+ve blood group.
- 17.5% of the total trial group had A,B+ve blood group.
- 2.5% of the total trial group had A+ve blood group.

23. UGI – ENDOSCOPE:

Upper GI – Endoscopy was done in 1 IP patient and 4 OP patient and confirmed to have ulcer in GIT. (Annexure – II).

24. BIOCHEMICAL ANALYSIS OF TRIAL DRUG:

Biochemical analysis of trial drug showed the presence of calcium, sulphate, starch, chloride, ferrous iron, phosphate (Annexure III).

25. PHARMACOLOGICAL ANALYSIS OF TRIAL DRUG:

Pharmacological analysis revealed that the trial drug GUNMATHUKKU CHOORANAM had significant anti-ulcer activity and significant antispasmodic action (Annexure IV).

The symptoms of erigunmam as described by Yugi vaidhya chinthami-800 well resembled the symptoms in peptic ulcer disease as described in modern texts. The aetiological factors of erigunmam were more elaborate in our literature rather than that in modern text which has to be subjected to a scientific evaluation.
Regarding envagai thervugal, Naadi in erigunnam patients is observed as increase in vatham and pitham parts. This was well brought to normal levels at the end of the trial.

It is also observed that the haemoglobin content of the selected individuals was increased at a range of 0-1 gm. of their existed level during the course of the trial.

It was observed that in some patients who had increased sour taste in their diet suffered from giddiness. And advised to withdraw sour taste in the diet and found out to be relieved from the giddiness.

The selected subjects were advised to have regular diet, to avoid alcohol, coffee, tea, oily food, to avoid smoking.

The trial medicine **Gunmathukku chooranam has kaarppu and thuvarppu suvai** as dealt in our literatures.

The literature describes the properties and actions of kaarppu suvai as

"துவம் தானட்பெருள் சூடையில் தொட்டியாக
தாரா சிகிச்சை தொட்டியாக
திசையும் புளிகத்தரம் புராணம்"

- (ம.க.பர)

"துவம் புளியும் தடுக்கும் நிலையில்
துவம் புளியும் காலமுறி புளிகாட்டு
துவம் புளியும் நிலையில் காலமுறி
துவம் புளியும் புளிகாட்டு நிலையில்தான்

Thuvarppu suvai is described to have
Hence trial drug possess activities of relieving flatulence, abdominal distension, indigestion, normalizing acid secretion, ulcer healing, appetizing actions.

It is inferred from the analysis that iron contented in the trial drug has not produced abdominal discomfort or any irritation which normally occurs, despite iron absorption is enhanced in the trial subjects.
SUMMARY

Erigunmam was analysed elaborately in its aetiological, pathophysiological symptomatical views both literally and scientifically. Resemblances among erigunmam and peptic ulcer diseases were pointed out through literary reviews and confirmed that erigunmam can be very well correlated with peptic ulcer disease.

The trial drug was selected from Gunapadam Mooligai vaguppu and prepared in traditional way as said in the literatures. The trial drug was subjected to preclinical studies and then used for the clinical study.

40 patients of both sexes were diagnosed to have erigunmam using both siddha and modern parameters. Among them 20 patients were treated in out patient ward and 20 patients were treated in inpatient ward.

All of the patients were subjected to both physical examinations and laboratory investigations. Physical examination was carried out with the help of envagai thervugal. Laboratory investigations were made in the study place and also in private clinical pathology laboratories. Trial drug Gunmathukku chooranam was administered 2 gms two times a day with water before food. No complications or adverse effects are observed during the study period.

The observations were tabulated. The study reveals that male population (52.5%) is more prone to develop erigunmam. Likely female population is also increasingly affected. Socio economic status plays a
considerable role in developing erigunnam. Dietary factors, O blood group, excessive smoking, excessive usage of NSAIDS contribute to majority of causing erigunnam.

Along with dietary management, proper and continous intake of the trial drug Gunmathukku chooranam gave good improvement in the trial patients. The symptoms of erigunnam relieved completely at the end of the trial.

Meditation and Yogasanas were taught to the trial patients and proper diet is advised.

Scientific evaluation revealed Gunmathukku chooranam have effective antiulcer property and it plays effective role in management of erigunnam.
CONCLUSION

- The trial group had good prognosis at the end of the treatment course.

- The trial medicine **Gunmathukku chooranam** yielded promising results in managing **erigunmam**.

- The trial drug posses **alkaline pH(9.0)(ANNEXUREIII)**.

- The probable mode of action of Gunmathukku chooranam on erigunmam could be due to its alkaline pH.

- Gunmathukku chooranam has **significant antispasmodic activity** and **anti ulcer activity**(annexureIV).

- Literary evidences reveals **kaarppu** and **thuvarppu suvai**(annexureI) has significant action on the disease of Gastrointestinal tract.

- In peptic ulcer disease, there would be a spasm in the smooth muscles probably because of this similar feature under the term gunmam might have been included in our classics.

- In order to design a drug which could act on the above stated condition our siddhars might have studied in depth and made it possible by their high intuitive powers. This shows their high scientific and rational thinking.

- Marketing the trial drug will do favour in economical issues and patient palatability.
ANNEXURE I

DRUG REVIEW

The selected trial drug is Gunmathukku chooranam from the reference book Gunapadam mooligai vaguppu pg.no.:

MATERIALS AND METHOD:

The raw drugs used are

1. Piper nigrum (milagu)
2. Pimpinella anisum (sombu)
3. Achyranthes aspera (nayuruvi)
4. Ferrous ferric oxide (iron rust, impure of iron)

(mandooram).

PREPARATION OF GUNMATHUKKU CHOORANAM:

(1) Piper nigrum seeds were roasted slightly and powdered,

(2) Pimpinella anisum seeds were roasted slightly for purification and powdered.

(3) Achyranthes aspera is collected as whole plant and dried and burnt into ashes. The ash is collected.

(4) Ferrous ferric oxide is subjected to oxidation and the process is carried out in traditional way as said in literature (Gunapadam Thathu Vaguppu Pg.No.:198)
Then all the end products of (1), (2), (3) and (4) are taken equal quantity and mixed well.

(1) PIPER NIGRUM:

**Family** : Piperaceae  
**Common Name** : Milagu (Tamil)  
Black pepper (English)  
**Parts used** : Seeds  
**Suvai** : Kaippu, Kaarppu  
**Thanmai** : Veppam  
**Pirivu** : Karppu

**Actions:**

Carminative, stimulant, Antidote, antivadha, anti-tumourogenic, anticholesterolemic.

**Chemical constituents:**

Piperine, coumaperine, β-sitosterol, piperic acid, pinene, sesqueterpine.

**Medicinal Uses:**

"வியிருவியாண்டு பற்றுப் பயிற்சி குழுக்கட்டு
நடைமுடிகள் 迚ியானிலே நடைமுடிகள் - கதரமிக
நடைமுடிகள் சுருக்குக்கள் கனடை முறுக்கையுடை
நடைமுடிகள் காய்கொண்டிருக்கும்.

- விதாந்த கர்த்திகாதாரம்
Piper nigrum is used to inhibit the gastric acid secretion or to boost the mucous defense.

-ncbi.com

(2) **PIMPINELLA ANISUM:**

**Family:** Apiaceae

**Common Name:** Anise, Aniseed (English)

Sombu (Tamil)

**Parts Used:** Flower, seed, root

**Suvai:** Kaarppu, Inippu

**Thanmai:** Veppam

**Pirivu:** Kaarppu

**Actions:** Carminative, stomachic

**Chemical Constituents:** Estragol, anethole, Flavanoid, methyl carvicol, furano coumarins, sesquiterpenes.

**Medicinal Uses:**

"இன்னும்  சூழ்ச்சரிய வெட்டும் ரோஜிளும் மூவையாக்கும் 
வெட்டுவது கொலும்பெட்டுக் கொத்தங்கள்

சுக்கத்தில்பொருள் மேலும் வேறுபாடு 
சூழ்ச்சியில் மூவையாக்கும் 

இன்னும் வெட்டும் வேறுபாடு"

- பல்லாய வேலுநாயால்
Aniseed alcoholic extracts exerted a relaxing effect on in vitro pre-contracted smooth muscles from different organs (tracheal and ileal) by antagonising several contraction inducing agents.

-London: 12 June 2008

(3) ACHYRANTHES ASPERA:

Family: Amaranthaceae
Common Name: Devil’s horse worship (English)
Nayuruvi (Tamil)
Parts Used: Whole Plant
Suvai: Kaippu, Thuvarppu, Kaarppu
Thanmai: Veppam
Pirivu: Kaarppu

Actions: Astringent, diuretic, alterative

Chemical constituents: Oleanolic acid, oleanoic acid, achyranthine, saponins A and B, eugenol, phytosterol.

Medicinal Uses:

“

- Njud; Fzthrlk;

- இன்ப பலமாக்கம்

- இன்ப பலமாக்கம்
Saponins A and B, free oleanolic acid are most active ones. They have antifungal, anto-oedematic, **anti-ulcerogenic**, anti-inflammatory, **anti-diarrhoeic actions.**

- Achyranthes aspera

(4) **Ferrousferric Oxide:**

Commonly - Impure iron rust.

Suva - Thuvarru

Veeriyam - Veppam

Ferrousferric oxide is a black magnetic iron oxide Fe3O4 found in nature as magnetite, also obtained synthetically (from iron by heating in steam or from a ferrous salt and an alkali by precipitation and oxidation).

**Actions:**

Alterative, Haematinic, Tonic, Stomachic.

**Medicinal Used:**

“அச்சிரண்டேள் குருவை குழண்டுகளுக்கு வருப்பதற்கு உயர்வு செய்யப்படும். குறைந்த வேதிச் சுருக்கப்பட்டு வரும்போது பெரும் தோற்றமையும் காரணமாய் உயரும்போது காணும்.”
## ANNEXURE II
### ENDOSCOPIC FINDINGS

<table>
<thead>
<tr>
<th>S.No</th>
<th>Name</th>
<th>Age/Sex</th>
<th>Impression for UGI Endoscopy</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Mrs. Petchiammal</td>
<td>60/F</td>
<td>Moderate pangastritis and bulbar ulcers</td>
</tr>
<tr>
<td>2.</td>
<td>Mr. Benni</td>
<td>46/M</td>
<td>Grade II distal esophagitis moderate antral gastritis</td>
</tr>
<tr>
<td>3.</td>
<td>Mr. Velmurugan</td>
<td>35/M</td>
<td>Grade II Distal esophagitis severe erosive pangastritis</td>
</tr>
<tr>
<td>4.</td>
<td>Mrs. Shanthi</td>
<td>50/F</td>
<td>Grade II Distal esophagitis, moderate antral gastritis. Active gastric ulcer</td>
</tr>
<tr>
<td>5.</td>
<td>Mr. Sudalaimuthu</td>
<td>65/M</td>
<td>Grade II Distal esophagitis, moderate Antral Gastritis. Pyloric canal ulcers</td>
</tr>
<tr>
<td>6.</td>
<td>Mr. Muthukumar</td>
<td>51/M</td>
<td>Grade II distal esophagitis, severe pangastritis, active Duodenal Ulcer, Active stomach Ulcer</td>
</tr>
</tbody>
</table>
ANNEXURE III

BIO CHEMICAL ANALYSIS

OF

GUNMATHUKKU CHOORANAM

Preparation of the Extract:

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

Qualitative Analysis:

<table>
<thead>
<tr>
<th>Sl.No.</th>
<th>Experiment</th>
<th>Observation</th>
<th>Inference</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>TEST FOR CALCIUM:</strong></td>
<td>A white precipitate formed</td>
<td>It indicates the presence of Calcium</td>
</tr>
<tr>
<td></td>
<td>2ml of the above prepared extract is taken in a clean test tube. 2ml of 4% Ammonium oxalate solution is added to it.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2</td>
<td><strong>TEST FOR SULPHATE:</strong></td>
<td>A white precipitate formed</td>
<td>It indicates the presence of Sulphate</td>
</tr>
<tr>
<td></td>
<td>2ml of the extract is added to 5% Barium chloride solution.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3</td>
<td><strong>TEST FOR CHLORIDE:</strong></td>
<td>A white precipitate formed</td>
<td>It indicates the presence of Chloride</td>
</tr>
<tr>
<td></td>
<td>The extract is treated with silver nitrate solution.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No.</td>
<td>Test Description</td>
<td>Observation</td>
<td>Conclusion</td>
</tr>
<tr>
<td>-----</td>
<td>-------------------------------------------------------</td>
<td>--------------------------------------------------</td>
<td>---------------------------------</td>
</tr>
<tr>
<td>4</td>
<td><strong>TEST FOR CARBONATE:</strong> The substance is treated with concentrated HCL.</td>
<td>No brisk effervescence is formed</td>
<td>Absence of Carbonate</td>
</tr>
<tr>
<td>5</td>
<td><strong>TEST FOR STARCH:</strong> The extract is added with weak iodine solution.</td>
<td>Blue colour is formed</td>
<td>Presence of Starch</td>
</tr>
<tr>
<td>6</td>
<td><strong>TEST FOR IRON FERRIC:</strong> The extract is treated with glacial acetic acid and potassium ferro cyanide.</td>
<td>No blue colour is formed</td>
<td>Absence of Ferric iron.</td>
</tr>
<tr>
<td>7</td>
<td><strong>TEST OF IRON FERROUS:</strong> The extract is treated with concentrated nitric acid and ammonium thio cyanate.</td>
<td>Blood red colour is formed</td>
<td>Indicates the presence of Ferrous iron</td>
</tr>
<tr>
<td>8</td>
<td><strong>TEST FOR PHOSPHATE:</strong> The extract is treated with Ammonium Molybdate and concentrated nitric acid.</td>
<td>No yellow precipitate is formed</td>
<td>Absence of Phosphate</td>
</tr>
<tr>
<td>9</td>
<td><strong>TEST FOR ALBUMIN:</strong> The extract is treated with Esbach’s reagent.</td>
<td>No yellow precipitate is formed</td>
<td>Absence of Albumin.</td>
</tr>
<tr>
<td>10</td>
<td><strong>TEST FOR TANNIC ACID:</strong> The extract is treated with ferric chloride.</td>
<td>No blue black precipitate is formed</td>
<td>Indicates the Absence of Tannic acid</td>
</tr>
<tr>
<td></td>
<td><strong>TEST FOR UNSATURATION:</strong></td>
<td>It gets decolourised</td>
<td>Indicates the presence of Unsaturated compound</td>
</tr>
<tr>
<td>---</td>
<td>----------------------------</td>
<td>---------------------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td></td>
<td>Potassium permanganate solution is added to the extract.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td><strong>TEST FOR THE REDUCING SUGAR:</strong></td>
<td>No colour change occurs</td>
<td>Absence of Reducing sugar</td>
</tr>
<tr>
<td></td>
<td>5ml of Benedict’s qualitative solution is taken in a test tube and allowed to boil for 2 mts and added 8-10 drops of the extract and again boil it for 2 mts.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13</td>
<td><strong>TEST FOR AMINO ACIDS:</strong></td>
<td>No violet colour is formed</td>
<td>Indicates the Absence of Amino acid.</td>
</tr>
<tr>
<td></td>
<td>One (or) two drops of the extract is placed on a filter paper and dried it well. After drying, 1% Ninhydrin is sprayed over the same and dried well.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>14</td>
<td><strong>TEST FOR ZINC:</strong></td>
<td>No white precipitate is formed</td>
<td>Absence of zinc</td>
</tr>
<tr>
<td></td>
<td>The extract is treated with potassium Ferrocyanide.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**pH of Gunmathuku Chooranam is 9.0 (Alkaline)**
ANNEXURE IV

PHARMACOLOGICAL ANALYSIS

(a) Anti Ulcer Activity of the Gunmathukku Chooranam

Aim

To study the anti ulcer activity of the Gunmathukku chooranam by Pyloric ligation method.

Instruments

Syringe, Needles, scissors, forceps, cork board, 10 ml pipette, 500 ml volumetric flask, suturing thread, medicine.

Preparation of the test medicine

1 gm of the Gunmathukku Chooranam was dissolved in 10 ml of water. 1 ml contains 100 mgs.

Procedure

Six adult female albino rat weighing 100 gms each were taken. It was fasted for about 48 hours. Then the abdomen was opened under the ether anesthesia and the pylorus of the stomach was ligated. At the time of ligation 2 rats were given 2 ml of the prepared test medicine solution directly into the stomach, another 2 rats were given distilled water at the same dose in the same manner. The incision was closed and the rats were allowed to recover. Then they were sacrificed 18 hours after the pylorus ligation and the stomach contents were collected. The stomach was opened by cutting along the greater curvature and mounted on a moist
cork board. The ulcers were examined and graded as follows. The free acid, and total acid level of gastric juice were also analysed by using 0.01N Sodium hydroxide with Toffer’s reagent as indicator.

The results of the above experiments are shown in the table. Effects of Gunmathukku Chooranam on gastric acid secretion are as follows.

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Control (water)</td>
<td>1 ml</td>
<td>7 ml</td>
<td>87</td>
<td>205</td>
<td>100%</td>
</tr>
<tr>
<td>2</td>
<td>Standard (Ranitidine)</td>
<td>20 mg/1 ml</td>
<td>8 ml</td>
<td>10</td>
<td>20</td>
<td>5%</td>
</tr>
<tr>
<td>3</td>
<td>Medicine (Gunmathukku Chooranam)</td>
<td>100 mg/1 ml</td>
<td>4.5 ml</td>
<td>52</td>
<td>95</td>
<td>20%</td>
</tr>
</tbody>
</table>

**Ulcer grades**

0 Grade – Normal.

I Grade – Scattered haemorrhagic spots.

II Grade – Deeper haemorrhagic spots.

III Grade – Hemorrhagic spots and ulcers.

IV Grade – Restoration spots and ulcers.
Inference

From the above tabulation the degree of ulceration has shown in the photographs. We came to know that the medicine Gunmathukku Chooranam protects the gastric mucosa by neutralizing the excessive gastric acid and the **Gunmathukku Chooranam** has got a **significant anti ulcer** activity.
(b) Anti Spasmodic effect on “Gunmathukku Chooranam”

Aim

To study the Anti Spasmodic effect on “Gunmathukku Chooranam”.

Preparation of the trial medicine

1 gm of the Gunmathukku Choornam was dissolved in 10 ml of water. 1 ml contains 100 mgs.

Procedure

A rabbit weighing about 350 gm was starved for 48 hours and only water is given.

It was killed by stunning with a sharp blow on the head and cutting its throat to bleed to death. The abdomen was quickly opened and the viscera inspected and loops of intestine identified using the patch as a landmark. Then the ileum was removed and placed in a shallow dish containing warm tyrode solution (37°C) and continuously aerated. The contents of the lumen of the ileum were washed and utmost care was taken to avoid any damage. It was cut into segments of 4 cm in a fully relaxed state and sutures were made with needle and tied on either side and the segment was suspended in an isolated organ bath. It was aerated by an oxygen tube immersed in tyrode solution. Drugs were given to study the inhibitory effect of acetyl choline.

Inference

The test drug “Gunmathukku Chooranam” had more significant antispasmodic effect.
C. ANTI – HISTAMINIC ACTIVITY ON GUNMATHUKKU CHOORANAM

Aim

To study the anti-histaminic effect of Gunmathukku Choornam.

Preparation of the Trail Medicine

1 gm of Gunmathukku Choornam was taken and mixed with 10 ml of water and filtered.

Procedure

A guinea pig weighing about 350 gm was starvated for 48 hours and only water is allowed.

It was killed by stunning with a sharp blow on the head and cutting its throat to bleed to death. The abdomen was quickly opened and the vicera inspected and loops of the intestine identified using the patch as a landmark. Then the ileum was removed and placed in a shallow dish containing warm tyrode solution (30°C) and continuously aerated. The contents of the lumen of the ileum were washed and utmost care was taken to avoid any damage. It was cut in to segments of 4 cm in a fully relaxed state and sutures were made with needle and tied on either side and the segment was suspended in an isolated organ bath. It was aerated by an oxygen tube immersed in tyrode solution. Drugs were given to study the inhibitory effect of histamine induced contractions.

Inference

The test drug Gunmathukku Choornam had Moderate effect.
ANNEXURE - V
PROFORMA OF CASE SHEET
GOVERNMENT SIDDHA MEDICAL COLLEGE AND HOSPITAL
DEPARTMENT OF POST GRADUATE POTHU MARUTHUVAM
PALAYAMKOTTAI - TIRUNELVELI - 627002
CASE SHEET PROFORMA FOR “ERI GUNMAM” – O.P

Case No : Occupation : 
O.P. No : Income : 
Name : Treatment Starting Date : 
Age/sex : End of the Treatment Date : 
Address : Total No.of Days Treated : 
Result : Good response/Moderate response/Poor response

Nationality : Diagnosis : “Eri Gunmam”
Religion : Medical Officer :

Complaints and Duration

1. Pain :
   a. Epigastric region :
   b. Rt hypochondrium :
2. Indigestion :
3. Flatulence :
4. Nausea :
5. Vomiting :
6. Heart burn :
7. Belching :
8. Loss of appetite :
9. Diarrhoea :
10. Constipation :
11. Insomnia :  
12. Abdominal Discomfort :  
13. Weakness :  
14. Nocturnal Pain :  
15. Other symptoms :  

**DURATION OF ILLNESS**

**PAST HISTORY**

**GENERAL EXAMINATION**

Consiousness : Temperature :
Decubitus : Pulse rate :
Nutrition : Heart rate :
Anaemia : Respiratory rate :
Cyanosis : Blood Pressure :
Jaundice :
JVP :
Pedal oedema :
Lymphadenopathy :
Koilonychia :
Clubbing :

**ENVAGAI THERVUGAL**

Naadi :
Sparisam :
Naa :
Niram :
Mozhi :
Vizhi
Malam
Moothiram

a) Neerkuri
   i. Niram
   ii. Manam
   iii. Edai
   iv. Nurai
   v. Enjal

b) Neikuri

EXAMINATION OF ABDOMEN

Inspection
Palpation
Percussion
Auscultation

RELEVANT OTHER SYSTEMIC EXAMINATION

- Cardio Vascular system
- Respiratory system
- Central Nervous system
<table>
<thead>
<tr>
<th>Blood:</th>
<th>BT</th>
<th>AT</th>
</tr>
</thead>
<tbody>
<tr>
<td>TC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>DC</td>
<td></td>
<td></td>
</tr>
<tr>
<td>ESR</td>
<td>½ hr</td>
<td>1 hr</td>
</tr>
<tr>
<td>Hb</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blood Sugar (R)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blood Urea</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Serum Cholesterol</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Urine:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Albumin</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sugar</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deposit</td>
<td></td>
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</tr>
<tr>
<td>Motion:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ova</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cyst</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Occult Blood</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blood Group</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
OTHER INVESTIGATIONS

UGI Endoscopy

TREATMENT

<table>
<thead>
<tr>
<th>No</th>
<th>Medicine</th>
<th>Dose</th>
<th>Adjuvant</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Gunmathukku Chooranam</td>
<td>2 gms.B.D</td>
<td>Water</td>
</tr>
</tbody>
</table>

DIET

தொழிக்கு வையன்றுத்தொலை

- காய்வர்கள் முதலியும் புகழ்பெறும்.
- மிக்களும் கொன்று புகழ்பெறும்.
- புத்தியார் பெருமான், முதலியும் புகழ்பெறும்.
- பொரு புகழ்பெறும்.
- முருள், கீழியா், முதலியும், கீழியா், புத்தியார், கீழியா், புத்தியா், புத்தியா்.

சரியாக வையன்றுத்தொலை

- காட்டில் பொருள்கள் காரம் முதலியும் புகழ்பெறும்.
- பொருள் முதலியும் பொருள்கள் புகழ்பெறும் காரணம்.
- பொருள் கருப்பநிலை.

சுருக்கிய அளிப்பு

- பொருள்பந்துகள் காரணம்.
- அறிவியல் சேர்ப்பெரியா், கைகைக் காரணம்.
- கற்றுப் பருட்பகர் நூற்று இரண்டாம் தொலை.
- கைகையறர்கள் இரண்டாம் இரண்டாம் தொலை.
Ward : Nationality :
I.P. No : Religion :
Bed No : Date of admission :
Name : Date of discharge :
Age/Sex : Result : Good response/Moderate response/Poor response
Address : Diagnosis : ‘ERI GUNMAM’

Medical officer :

Occupation:
Income :

Complaints and Duration

History of Present Illness

History of Past Illness

Personal History

Family History
Habits

Veg / Non- veg / Mixed diet / irregular diet /
Smoker / Alcoholic / Tobacco – Chewer.

GENERAL EXAMINATION

Consciousness : VITAL SIGNS
Decubitus : Temperature :
Nutrition : Pulse Rate :
Anaemia : Heart Rate :
Cyanosis : Respiratory Rate :
Jaundice : Blood Pressure :
JVP :
Pedal Oedema :
Lymphadenopathy :
Koilonychia :
Clubbing :

IN SIDDHA ASPECTS

MUKKUNAM THEGI
Sathuvam : Vatham :
Rajogunam : Pitham :
Thamogunam: Kabam :
Thontham:
IMPORIGAL & IMPULANGAL
Mei :
Vai :
Kann :
Mookku:
Sevi :

KANMENTHIRIYAM & KANMAVIDAYAM
Kai :
Kal :
Vai :
Eruvai:
Karuvai:

KOSAM
Annamayakosam:
   (Ezhu udal kattugal)
Praanamayakosam:
   (Praanan & Kanmenthiriyam)
Manomayakosam:
   (Manam & Gnanenthiriyam)
Gnanamayakosam :
   (Puththi & Gnanenthiriyam)
Aananthamayakosam:
   (Praanan & Suluthi)

UYIR THATHUKKAL
VATHAM
Praanan :
Abaanan :
Viyaanan :
Uthaanan :
Samaanan:
Nagan:
Koorman:
Kirugaran:
Devathathan:
Dhananjayan:

**PITHAM**

Analapitham:
Ranjagam:
Sathagam:
Alosagam:
Prasagam:

**KABAM**

Avalambagam:
Kiletham:
Tharpagam:
Pothagam:
Santhigam:

**UDAL KATTUGAL**

Saram:
Senneer:
Oon:
Kozhuppu:
Enbu:
Moolai:
Sukkilam / Suronitham:

**ENVAGAI THERVUGAL**

Naadi:
Sparisam:
Naa :
Niram :
Mozhi :
Vizhi :
Malam :
Moothiram :

(a) Neerkuri
1. Niram :
2. Manam :
3. Edai :
4. Nurai :
5. Engal :

(b) Neikuri

IN MODERN ASPECTS
SYSTEMIC EXAMINATION
1. Cardio Vascular System :
2. Respiratory System :
3. Central Nervous System :

ANY OTHER ASSOCIATED DISEASE WITH SPECIAL REFERENCE TO
- Cirrhosis
- Chronic Renal failure
- Hyper Parathyrodism
- Renal Stones
- Chronic Pancreatitis.
### ALIMENTARY SYSTEM
### SYMPTOMS AND SIGNS

<table>
<thead>
<tr>
<th>Symptoms</th>
<th>Before Treatment</th>
<th>Duration</th>
<th>After Treatment Days</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>7th</td>
<td>14th</td>
</tr>
<tr>
<td>I. PAIN: RELATED TO FOOD</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>A. Any Gastric discomfort</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Before Meals</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. 1-2 hrs after meals</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. 2-4 hrs after meals</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Constant</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>B. Pain Occasional</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. Before Meals</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. 1-2 hrs after meals</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. 2-4 hrs after meals</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Constant</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>C. Burning Sensation</td>
<td></td>
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</tr>
<tr>
<td>1. Before Meals</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>2. 1-2 hrs after meals</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. 2-4 hrs after meals</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Constant</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>D. Radiation of Pain</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1. No Radiation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Left shoulder</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>3. Back</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4. Sides of chest</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>E. Pain Nocturnal</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>-------------------------</td>
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<td>---</td>
<td>---</td>
</tr>
<tr>
<td>1. 10 – 12 pm</td>
<td></td>
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</tr>
<tr>
<td>2. 1 – 3 pm</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>3. 2 – 4 am</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>F. Pain relieved by</th>
<th></th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>1. Food</td>
<td></td>
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</tr>
<tr>
<td>2. Antacids</td>
<td></td>
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</tr>
<tr>
<td>3. Bed rest</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>4. Siddha drugs</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>5. Vomiting</td>
<td></td>
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</tr>
<tr>
<td>6. Not relieved by any</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>of the above.</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>G. Nausea</th>
<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>1. Frequent:</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Occasional</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Associated with</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Vomiting</td>
<td></td>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>H. Vomiting</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Frequent</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Occasional</td>
<td></td>
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<td></td>
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</tr>
<tr>
<td>3. Stained with blood</td>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>II. HEART BURN</th>
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</thead>
<tbody>
<tr>
<td>1. Occasional</td>
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</tr>
<tr>
<td>2. Constant</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3. Before Meals</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>4. After and Before</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Meals</td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
### III. EXCESSIVE SALIVATION

1. Occasional
2. With or between meals
3. Often
4. Constant

### IV. APPETITE

1. Very poor
2. Moderate
3. Normal

---

<table>
<thead>
<tr>
<th>Signs</th>
<th>Examination of Abdomen</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Inspection:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Palpation:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Percussion:</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Auscultation:</strong></td>
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</table>
**LAB INVESTIGATION**

<table>
<thead>
<tr>
<th>Blood:</th>
<th>BT</th>
<th>AT</th>
</tr>
</thead>
<tbody>
<tr>
<td>TC :</td>
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</tr>
<tr>
<td>DC :</td>
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<td></td>
<td>L:</td>
<td></td>
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<tr>
<td></td>
<td>E:</td>
<td></td>
</tr>
<tr>
<td>ESR</td>
<td>½ hr</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1 hr</td>
<td></td>
</tr>
<tr>
<td>Hb:</td>
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<td></td>
</tr>
<tr>
<td>Blood Sugar (R):</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blood Urea:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Serum Cholesterol:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Serum creatinine:</td>
<td></td>
<td></td>
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<tr>
<td>Urine :</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Albumin</td>
<td>:</td>
<td></td>
</tr>
<tr>
<td>Sugar :</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Deposit :</td>
<td></td>
<td></td>
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<tr>
<td>Motion:</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ova :</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cyst :</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Occult Blood :</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Blood Group :</td>
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</tbody>
</table>
UGI Endoscopy:

TREATMENT

<table>
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<tr>
<th>No</th>
<th>Medicine</th>
<th>Dose</th>
<th>Adjuvant</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Gunmathukku Chooranam</td>
<td>2 gms.B.D</td>
<td>Water</td>
</tr>
</tbody>
</table>

DIET

1. கரும்பான் ஆசைப்பெயர்க்கல்.
2. மசையன் உருளை ஆசைப்பெயர்க்கல்.
3. புதிப்பால் ஆசைப்பெயர்க்கல்.
4. மும்பி பசராக்கல்.
5. பெட்ர, கிளையோ, மசையப்பெயர், தோலிரி, புதிப்பால், காண்டை, பண்ணா போன்றாக.

சுத்தக்கால பெயர்க்கல்

1. செஞ்சிய முசருக்கற ஆசைப்பெயர்க்கல்.
2. செஞ்சிய முசருக்கற பசராக்கல் முசருக்கறக் காண்டை.
3. பண்ணா பசராக்கல்.

சுத்தக்கால அமைப்பு

1. பாசுப்பிழைக்கு காண்டை.
2. அலமேகா பசராக்கல், குமாரமேகா காண்டை.
3. குற்றப்பட்ட பவுன்பெயர் சுத்தக்கால காண்டை.
4. குற்றப்பட்ட பம்பா சுத்தக்கால காண்டை.
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## BLOOD INVESTIGATIONS REPORT - IP

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Neikuri pattern distribution

- Percentage

- Vatha Neer: 60%
- Pitha Neer: 30%
- Kaba Neer: 0%
- Thontha Neer: 10%

Legend:
- OP
- IP
Gradation of Results

- Good Response: 90% (OP), 100% (IP)
- Moderate Response: 10% (OP)
- Poor Response: 0% (OP), 0% (IP)

Percentage
Name: Mrs. Santhi  
Age: 50/f  
Date: 22.08.2012  
Ref. by: Dr. Baby Malathi M.D(siddha) P.G

Esophagus: OGJ at 38cms. Grade II inflammation seen over distal 5cms.

Stomach: Antrum moderately inflamed. Clean Based ulcer seen over distal Anturm.

Duodenum: Bulb and D2 appear normal.

Impression: Grade II distal esophagitis. Moderate antral gastritis.

Active gastric ulcer.

Dr. E. Kandasamy @ Kumar, M.D.D.M.
Antispasmodic Action of Trial drug
Gunmathukku Chooranam

Antispasmodic Action
Drug - Gunmathukku Chooranam

Dose 0.1 ML
Ach

Dose 1 ML
Dose 0.1 ML
Ach
Esophagus: OGJ at 38cms. GRR inflammation seen over distal 5cms.

Stomach: Antrum moderately inflamed. Multiple clean based ulcers seen over pyloric channel. Biopsy taken.

Duodenum: posterior wall Bulb and D2 appear normal.

Impression: GRR distal esophagitis.
Moderate antral Gastritis
Pyloric Channel ulcers. forrest III.

Dr.E.Kandasamy @ Kumar, M.D.D.M.
Esophagus: OGJ at 38cms. GrII inflammation seen over distal 5cms.

Stomach: Entire stomach severely inflamed. GJ stoma seen. Both loops entered normal.

Duodenum: Superficial ulcer seen over posterior wall of Bulb and D2 appear normal.

Impression: GrII distal esophagitis. Severe pangastritis. Normal Status GJ

Active DU Forrest III.
YOGASANAS

Bhujanga Asanam  Salabhasanam

Pavanamukthasana  Patchimoathasana

Uthana Padmasanam  Savasana
Fig : 1 Part of Stomach

Fig : 2 Part of the duodenum
Fig : 3 Helicobacter pylori

Fig : 4 Peptic Ulcer
ANTI ULCER ACTIVITY
CONTROL

MANIMANTHIRATHY CHOORNAM

GUDUCHIYATHY KASHAYAM
கொண்டாட்டை
மகளுக்கு

பறு நிக்க
Dr. E. Kandasamy @ Kumar, M.D.D.M.
Consultant Gastroenterologist and Hepatologist
Aarthi scans - vannarpettai
Tirunelveli-2 Ph: 9443323100

Name: Mrs. Petchiammal
Date: 07.08.2012

Age: 60/f

Esophagus: OGJ at 38cms. Grl1 inflammation seen over distal 5cms.

Stomach: Entire stomach Moderately inflamed.

Duodenum: Superficial ulcers seen over Bulb and D2 appear normal.

Impression: Moderate Pangasistritis and Bulbar ulcers.

Dr. E. Kandasamy @ Kumar, M.D.D.M.
GASTROSCOPY REPORT

INDICATION: GERD

PREMEDICATION: Xylocaine spray

FINDINGS

OESOPHAGUS: Normal, No ulcer / stricture / web.

O-G JUNCTION: At 38 cm, Lax LES,
Gastric mucosal prolapse+

STOMACH:

FUNDUS: Normal

BODY: Normal

ANTRUM: Normal, No ulcer / erosion.

PYLORUS: Normal

DUODENUM
FIRST PART: Normal
SECOND PART: Normal

IMPRESSION: INCOMPETENT LES,
GASTRIC MUCOSAL PROLAPSE.

BIOPSIES: Not taken

Dr.R.SELVASEKARAN,M.D.,D.M.,(Gastro)
We thank you for your kind reference

Reference from Dr Hospital
Name of the Patient
Age
Gender
Nature of Specimen
Sample Received on
Fixed in
Gross Description

Microscopic Description
Section studied shows colonic mucosa with focal erosion of the lining and chronic non specific inflammatory cell infiltration with areas of haemorrhage and congestion

Impression
Chronic Nonspecific Colitis

Date: 12 07 12

Kindly correlate this report with clinical parameters of the patient.

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Consultant Pathologist

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Consultant Pathologist

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Name: Penni
Age - Sex: 46m
I.P. No: OP
M.E. OP No: 1729/12

Oesophagus: Digital 5 cm u. inflamed
OG Junction: At 38 cm
Stomach:

Funds: 
Body:
Antrum: Inflamed
Pylorus: 

Duodenum:
D1: 
D2: 

Impression: Grade II distal esophagitis

Dr. E. Kanaseamy @ 10.03.19
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Name: Mr. Velmuzhan
Age: 35 m

Date: 04.09.2012

Esophagus: GrII inflammation seen over distal 5cms.

Stomach: Entire stomach severely inflamed.

Duodenum: Erosions seen over Bulb and D2 appear normal.

Impression: GrII distal esophagitis. Severe erosive Pangastritis.

Dr.E.Kandasamy @ Kumar,M.D.D.M.