A STUDY ON

“SEETHA KAZHICHAL”

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INTRODUCTION

“Siddha is the divine gift of nature to mankind”

Greatest religions, Peerless culture, glorious history celebrated sages, reputed philosophers, immense natural wealth. The list goes on endless. So many years ago, some people with enormous and supernatural power in themselves lived. They are named as siddhars. The great scientist of the past provided an indigenous system called ‘Siddha system of Medicine’

Siddha system, has curative, preventive Rehabilitation and rejuvenation aspects of its own kind which were absent in other systems.

Siddha or Tamil system of medicine evolved not from the laboratories but from the medical experiences of man right from the first homosapien to the present.

The concepts of this system is exactly co-incidental with the present man needs. For e.g WHO defines health as ‘health is a state of complete physical, mental & social well being and not merely an absence of disease’.

Siddhars treated the body as well as mind and have also formulated the ways for the prevention of diseases. Siddhars defined medicine as follows,

“இயற்புரை எல்லாம் மன்னியாக காணும்

மூன்று எழுதியம் மன்னியாக காணும்

மூன்று எழுதியம் ஆருகிலும்

மூன்று எழுதியம் பாதுகாக்கும்”

- கிருஷ்ணன்
“Childrens are the feature citizens” Hence their health is of paramount Importance to our nation. Care of children is different in many aspects from that of adults and so a separate branch of medicine “Balar Maruthuvam” or “pillai pini maruthuvam” or “Bala Vagadam” has been dealt by our ancient saints, siddhars.

**Balavagadam** is a branch of medical science of siddhars, which deals with the diseases and treatment of the child.

In **Balavagadam**, the diseases of children are broadly classified in to Aga Karana Noigal and Pura Karana Noigal.

Among the Purakarana Noigal **“Seetha Kazhichal”** is a commonly occurring disease in infants and children. It is a disorder of gastro intestinal tract caused by micro organism due to poor personal hygiene and sanitation, ultimately leads to derangements in Tridosas and disease manifestation.

It has been clearly depicted in “Gurunadi Nool” (Shanmuga Velu 1987) that seetha Kazhichal is caused by Kirumigal (micro organisms) and explained the pathogenesis of the disease. The aetiological factors, pathogenesis, clinical features of the diseases explained in siddha literature are more or less related to amoebic and bacillary dysentery described in modern system of medicine.
This dissertation is a thorough study of the disease “seetha kazhichal” in 20 patients admitted in the post graduate department of “kuzhanthai maruthuvam” at government siddha medical college, palayamkottai.

Although a large number of single and compound drugs for the treatment of seethakazhichal are invariably found in siddha literatures. I have selected “Seethapethy chooranam” for this study.

All the 20 patients were treated with this drug and the results will be discussed.
AIM AND OBJECTIVES

Seetha kazhichal in children is a major health hazard in the developing countries like India. It forms one of the major causes of sickness among infants and children, which causes a heavy economic burden on health services.

India is a country, having large population in the world, where people of different socio economic status are found. Poor children who live in densely areas with poor sanitary facilities, lack of personal and environmental hygiene are the common victims of this disease. If proper attention has not been given, it may even lead to fatal condition. So immediate care should be taken as soon as the outbreak of this disease is noticed in children.

Objectives:

➢ To explore most efficacious drug for seetha kazhichal with less adverse effects.
➢ To have a clinical trial on seetha kazhichal affected children with Seethapethy chooranam.
➢ To evaluate the disease seetha kazhichal clinically by careful examination on etiology, clinical features, differential
diagnosis, investigations, diagnosis, treatment, diet, prognosis, complications etc.

➢ To collect the literal evidences regarding the disease seetha kazhichal as per siddha system.

➢ To make comparative study of this disease with morden aspects.

➢ To evaluate biochemical and pharmalogical analysis of the drug.

➢ To evaluate efficacy of trial medicine on anti microbial activity by invitro studies.

➢ To made awareness among the parents regarding this disease and its prevention.
REVIEW OF SIDDHA LITERATURE

திசை (Definition):

சீதா கழிச்சல் அவ்விடம் ரியின் ரிய்ஸிறவுமா அல்லும் அகிலம்
குப்பம் அவியலும் ஆலுக் குறிப்பிட்டம், சுக்காற்றிய துளைப்பெட்
குறிப்பிட்டம் குப்பம் விளர்ந்து.

Seetha kazhichal means the dysentery due to specific inflammation and ulceration of the mucus lining of large intestine resulting in evacuation of stools mixed with mucus and blood.

(T.V. sambasivam pillai. 1978).

இவ்விளப்பாகம் (synonyms):

- Amakazhichal,
- Seethapethy (Balavagadam)
- Kaddupu kazhichal,
- Seethapethy
- Seetharathapethy (Siddha maruthuvam)
- Vayettru kaduppu,
- Vayettrulaivu (Para raja Sekaram Balaroga Nidhanam)
Seetha ratha Kazhichal
Seetha Kaduppu
Ratha Kaduppu
Ama pethy
Amaratha pethy
Giragani
Girani
Seetha atisaram
Seetha ratha girani
Kuzhanthai seetha pethy
Vayettru kottal (T.V.Sambasivam Pillai Dictionary)
Aama atisaram (Vaidya Raja Balavagadam)
Vayettru Kaduppu
Vayettru kothippu (Noi Nidhanankan)

 كاليا (Classification):

“Seetha Kazhichal” is a disease which occurs both in children and adults. It has been described as one of the Kazhichal noi in various Siddha literatures.
In **Balavagadam** it is classified under Kazhichal vaguppu, where as it has been described separately in siddha maruthuvam.

Various classifications of kazhichal noi, which have been described in several siddha texts, are given below,

1. In **Balavagadam** three types of Kazhichal noikal have been described

   1. Mantha Kazhichal
   2. Kana Kazhichal
   3. Ama Kazhichal (Seetha Pethy)

At the same time,

1. Veppu Kazhichal
2. Ratha Kazhichal
3. Athisara Kazhichal
4. Kaduppu Kazhichal
5. Porumal Kazhichal
6. Pachilai Kazhichal
7. Vidaa Kazhichal

have also been mentioned in the treatment of Kazhichal noikal in **Balavagadam**.

2. In **Jeeva Rakshamirtham**, the following Kazhichal noikal are given

   1. Ratha Kazhichal
   2. Sala Kazhichal
3. Two types of “Kazhichal” have been described in *pararaja sekaram balaroga nidhanam*

1. Vayettru Kaduppu
2. Vayettrulaivu

4. In *T.V.Sambasivam pillai dictionary*, the following Kazhichal noikal have been mentioned.

1. Seetha Kazhichal
2. Ratha Kazhichal
3. Sala Kazhichal
4. Soba Kazhichal (Diarrhoea with great weakness and exhaustion)
5. Veeludai Kazhichal (white diarrhoea)
6. Vayettu Kazhichal (gastrogenic diarrhoea)
7. Sangara Kazhichal (diarrhoea with various symptoms)

5. In *Athma rakshamirutham* also called *Vaidya Sara Sangirakam* fifteen types of Kazhichal noikal have been classified.
1. Suzhimantha Kazhichal
2. Paal Kazhichal
3. Varat Kazhichal
4. Vaanthi Kazhichal
5. Kana Kazhichal
6. Maantha Kazhichal
7. Ama Kazhichal
8. Sala Kazhichal
9. Vethuppu Kazhichal
10. Ratha Kazhichal
11. Athisara Kazhichal
12. Porumal Kazhichal
13. Ratha Kaduppu
14. Pachilai Kazhichal
15. Vida Kazhichal

6. In *Noi nidhanankal*, ten types of Kazhichal noikal are given

   1. Moola Kazhichal
   2. Vata girani
   3. Pitta girani
   4. Seetha girani
   5. Vatha pitta girani
   6. Pitta Slethuma girani
   7. Vatha Seethma girani
   8. Thontha girani
   9. Vayettru Kaduppu
  10. Vayettru Kothippu

7. According to *Agathiyar vaidya Kaavium* 1500, Kazhichal is classified in to six types.

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“குளிடக்கல்வி கிராண்டிப்பின் விதிகளம்
கால பிள்ளிய ஆன்ம கங்கே அம்பாடும்
அப்பிள்ளியும் சுப்பிரமணியும்
அம்பாடு சுப்பிரமண் மாதவான் மூன்று
சுப்பிரமணி மாதவான் மூன்றும்
மாதவான சுப்பிரமணி மூன்றும்
சுப்பிரமணி மாதவான் மூன்றும்
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1. Vatha Kazhical
2. Pittha Kazhical
3. Kaba Kazhical
4. Moola Kazhical
5. Sangana Kazhical
6. Mega Kazhical

8. Same classification has been given in *Thirumoolar Vaidhyam*”

*Karukkidai 600.*

From the above, many authors describe the types of Kazhical noikal. But the dissertation topic “Seetha Kazhichal” had selected from *Balavagadam.*
Noi varum Vazhi (Etiology):

The causes for seethakazhichal mentioned in various siddha texts are follows,

1. Intake of food stuffs which are not easily digestable.
2. Intake of excessive pungent and sour tested food stuffs.
3. Taking sweets, mutton and improperly cooked foodstuffs.
4. Taking medicines which are having poisonous effects (Karamarundhugal)
5. Drinking impure water like sunaineer and karchunna neer.
6. Wandering in hotsun and exposure to cold air.
7. Living in over crowded areas.
8. Suffering from seetha suram.
9. Improper treatment for “Athisara Noi”

The above mentioned causes are stated in the following verses.

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"நாம் அறிகள் மூத்திருளே மத்தியிட்டு செய்யாதா

தேவான்மூ முகுந்தே மூழ்க செய்யாதா

அவள் மத்தியிட்டு மூழ்கப்பெறாதா

2. அல்லாஹ் கியாரான் மய்க்கும் படி காச்சாப்பு காச்சாபு"

- பாலியத் கோஸ்னுத்
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"நாம் கை பலாவே கைது கைது கென்பு

குளிரிக்கிறே கொரியிற் பிப்பே நீய்த்தே கென்பு
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13
"Gurunaadi Nool" explains the causative organism and the pathogenesis of the disease.

Due to excessive heat the pathogenic micro organisms (Kirumigal) multiplies in large numbers in the intestine. They make the stools dry, decomposed and producing foul smelling gases (vayu). Then it produces Kazhichal.
Murkuri Gunangal (premonitory symptoms):

Head ache, nausea and pain in the abdomen, burning sensation in the anus, tenesmus due to increased peristaltic movement are the symptoms produced in the initial stage of the disease.

Pothukuri Gunangal (General Signs and Symptoms):

Following the premonitory symptoms, there is passing of loose stools containing small amounts of mucus and blood, pain in the abdomen and burning sensation in the anal region are aggravated.

Besides passing of mucus and blood, frequent scanty stools are present. During that time intense abdominal pain is observed. Due to severe pain, the patient will be always in sitting posture. The patient may pass loose stools many times in a day. If it is not controlled by proper treatment the patient gets severe discomfort, naadi appears weak and perspiration is seen. Eyes will be sunken, tongue becomes dry, and symptoms of muppini will occur and may be fatal.

The above mentioned features are stated in ‘siddha maruthuvam’.

General symptoms and signs of “Seetha Kazhichal” are also mentioned in ‘Agasthiyar gunavagadam’.

“சேதையு காசிசால ஆசத்தியர் புரணவாடம்
குரியல்கள் கைகளை காலெரியமாக பாட்டை
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15
Initially there is dysfunction in the colon followed by frequency of motion. Fatigue and weakness of the body will also be seen.

The following symptoms and signs occur in vayettru kaduppu.

Patient have gripping pain in the lower abdomen, with irritation in and around the anal region, rectal tenesmus with loose stools, poor appetite and weakness of the body due to excessive blood loss in stools.

The same features have been described in Agathiyar 2000.

The following Kurigunangal have been described for “Vayettru ulaivu”
Patient is having fever with abdominal pain, loss of appetite, loose motion with mucus, general weakness and shivering.

In chronic stage, there is regurgitation of milk and anaemia, fever, chillness of extremities are observed.

“என்று ஓர்வினித்து என்று போற்று கூட்டம் காணிக்க
காணிக்க ரு஫ு வாதம் குரியித்துத்து செய்யி
காணிக்க போற்றும் கட்டு காணிக்க கூட்டம் செய்யி
நிகைப் பார்வோ விண்பெட்டு பார்வோ காணிக்க”

- ராங்கைகை

MUKKUTRA VERUPADUGAL (PATHOLOGY)

According to siddha system of medicine, diseases are produced due to derangements in Thridoshas (i.e) Vatham, pitham and kabam.

The siddha concepts of pathology of Seetha kzhichal have been described in Thirumoolar Vaidhyam karukkidai 600.
In “Seetha Kazhichal” due to various causes stated above, the pitha kuttram is vitiated from its normal condition. This is turn stimulates Abanan, a type vatha. Also, chenner (blood) and kaba kuttram are affected.

Vitated pitham along with kabam causes ulceration in the intestine and produces passage of loose stools with blood and mucus

Pain in the abdomen and tenesemus are produced mainly due to vitiated vayu.

Finally all the trithathus are deranged from their normal positions and produces “Muppini Noi”

**Piniyari Muraimai (Diagnosis):**

In siddha medicine, diagnosis of a disease is made up on the following principles.

1. Poriyaal arithal (Inspection)
2. Vinaathal (Interrogation)
3. Pulanaal arithal (Palpation)
Pori are the five organs of perception namely nose, tongue, eyes, ears and skin.

Pulan are the five objects of senses namely smell, taste, sight, sensation and sound.

Poriyaal arithal and pulanaal arithal goes hand in hand with concept of examining the patient’s pori and pulan with that of the physician’s pori and pulan.

By Vinaathal, the physician knows about the patient’s name, age, native place, socio economic status, family history, dietetic habits etc. If it is infant or child or unable to talk (deaf and dumb and in other diseased conditions) the particulars are obtained from his/her relatives or parents i.e, informer.

Poriyaalarithal, pulanaalarithal and vinaathal are effected through eight special methods of investigation (Envagai Thervugal)

**Envagai Thervugal:**

Envagai Thervugal is considered to be physician’s instruments.

“தந்த புரிமா தா பிளமா முன் கி கி

மாம் புரிமா மாம் கிகி கி”

- முதலாம்

- Naadi (Pulse)
- Sparisam (Palpation)
- Naa (Tongue)
- Niram (Colour of Skin)
• Mozhi (Speech)
• Vizhi (Eyes)
• Malam (Stools)
• Moothirum (Urine)

**Naadi (Pulse):**

Naadi is an important observation for diagnosis and prognosis. Naadi is responsible for the existence of life and can be felt one inch below the wrist on the radial side by means of palpation with the tips of index, middle and ring finger corresponding to vatham, pitham and kabam.

Normally the three humors vatham, pitham and kabam exist in the ratio 1: ½: ¼.

Derangement in these ratio leads to various disease entities and is best diagnosed by feeling the naadi.

**Naadi nadai in Seethakazhichal:**

"தாயும்பாலன பிற்றுறுக்கியும் இந்த காதலம்
அம்பு அமைந்து பாய்ப்பாய் தங்கி காணும்
காயம்பால பாய்ப்பாயகால அச்சத்தைகள்
கலிப்பின் அபிஷேகமில்பிள்ளை
ஒத்தம்பால் புகழ்மத்தை தாக்கப்பட்டு
மைந்து காயம்பால இந்த நாட்டு
காயம்பால பாய்ப்பாயத் பாலியு தாக்கும்"
Vitiated pitham with heat produces symptoms of seetha Kazhichal.

Thonthamana kabam with vayu produces motion mixed with mucus.

Naadi Nadai for Grani is also responsible for "Seetha Kazhichal"
In pitha vatham Naadi, Grani is produced. When there is aggravated vatha naadi the disease Grani is produced.

Sparisam (Palpation):

By sparisam, the temperature of skin (heat or cold), smoothness, roughness, Hardness, sweat, dryness, swelling, tenderness, ulcers, and pigmentation can be examined.

In “Seetha Kazhichal” dryness of the body, raised body temperature, tenderness in the abdomen, sometimes liver enlargement is present.
**Naa (Tongue):**

In the examination of tongue, colour, coating, wetness, or dryness, deviation movements, fissures, variation in taste, condition of teeth and gums are carefully noted.

In “Seetha Kazhichal” coated tongue shows loss of appetite and indigestion.

**Niram (Colour):**

Colours indicating vatham, pitham, kabam and thridhosas, cyanosis, pallor, yellowish, discoloration of the body are noted.

In “Setha Kazhichal” pallor of the body is present.

**Mozhi (Speech):**

In the examination of mozhi, the pitch of voice (high or low), laughing, slurring, speech in hallucination, crying, breathlessness or wheezing and incompleteness while talking may be noted.

In seetha kazhichal mozhi may be affected.

**Vizhi (Eye):**

Both sensory and motor disturbances are noted. Colour, inflammation, ulceration, lacrimation, sharpness of vision, response of the pupil to light may also be noted.

In the case of seetha kazhichal, sunken eyes and pallor of eyes sometimes noted.
**Malam (Faces):**

In the examination of malam, Niram (Colour) Nurai (froth), Erugal (Solid) Elagal (Semi solid or liquid), quantity (increased or decreased), smell can be noted. Other examinations like diarrhoea, presence of blood, mucus, undigested matter in the stools and odur can also be noted.

In “seetha kazhichal” the malam may be liquid or or semisolid, Bulky or scanty in quantity, bright red or dark brown in colour, sometimes gives offensive odour containing mucus and blood.

**Moothiram (Urine):**

In the examination of Urine, colour, odour, quantity of Urine, the presence of froth, deposits, blood, and pus, abnormal constituents such as sugar, protein etc. and frequency of urination can be noted.

In “Seetha Kazhichal”, the quantity is slightly diminished and yellow in colour.

**Neerkuri:**

"நிரம் எடை மனம் நரை எங்காக கூடாது குபாக ஓரை மகூர் குறிப்பிட்டு உரிய மதுரை மற்றும் குறைக்கின்று"

According to this verse, the general features of urine are niram, edai, manam, nurai and enjal.

- Niram indicates the colour of the urine voided
- Edai indicates the specific gravity of the urine.
- Manam indicates the smell of urine voided
• Nurai indicates the frothy nature of urine voided.
• Enjal indicates the quantity of urine.

**Collection of urine for Neikuri:**

“அதுக்காத பிறப்பும் அதிர்வுகள் காணம்
அட்டை அரைமா அகலவைத்த காண்கள்
சுருக்காந்தி சுருக்கி கொள்கை
அழகனோர் தன்னிறம் காண்கப்படு
நக்களோர் தன்னிறம் காண்கக்கொள்வு பின்னர்
சுருக்காந்தி சுருக்கி பிறப்புகள் காணம்”
- இசையம்

Prior to the day of examination, the patient is asked to take a regular and balanced diet without any derangement in amount and quality. The patient is allowed to have a good sleep. In the next early morning, the urine first voided is collected in a glass container for analysis.

The analysis should be carried out in one and half hours.

A drop of gingelly oil is dropped into a wide vessel containing the urine and is kept in the bright light in a calm place without shaking. The derangement of three thathus is studied by nature of oil on the surface of urine.

“அதுக்காத பிறப்பும் அட்டை வரும்
அழகனோர் பாரவில் அட்டை பிறகும்
சுருக்காந்தி சுருக்கி பிறப்புகள் காண்கு”
- இசையம் வுரும் உண்ணப் பாகற்கு
Oil spreading like snake indicates Vatham.

Oil spreading like a ring indicates pitham.

Oil remaining floating as a pearl indicates kabam.

In “Seetha Kazhichal”, oil spreads like a snake or ring indicating the vitiation of vatham and pitham.

**Complications:**

“இயல் கருமல் செய்திகள் ஒன்றியம் கானல்

இயல் கருமல் தலைத்துக்கு குறுக்கும் கல்

இயல் கருமல் குறுக்கு தாய்த்திறம் கல்

மாசால் தற்கால புது குறியாக காற்றைத் தான் கொண்டு

பாசால் கமல் எளிய குறியாக என்றால்

ஒருவேளா சிட்டையில் சனம் அழுத்தி தாழ்வறால்

சேரும்பெற்ற கூம்புக் கல் முன்னிட்டு தாடியால்”

- தமிழ்கிள் கருவாலம்

From the above verses, it is clear that severe bedhi leads to perforation and inflammation of the colon, liver abscess, constipation and obstruction. Sometimes it may end fatally.

“மாசால் புரிந்துக் கூட்டி மூழ்கிய குறுக்கும்

சேமால் குற்றுக்குரிய காலையில்தலை

அனுரை காமானது மாசசின் குறிய

மாசால் கார்த்திகை”

- தமிழ்கிள் கருவாலம்
If the above diseases are associated with Grani it may lead to a fatal outcome.

“துற்றுமிக்கு தாது தாதும் கிரகணின் கலபண்

நாடாஸம் சுமாரும் சுமார்தொட்டே - கலசுமிந்

மூக்குத் தில்லியாம் பாலவர்களுக்கு திற்பிசையல்

இது காணும் காக்குக்கு என்”

- கால்சுமிநே

“துற்று தில்லியான் தாம் திற்பிசை

நாடாஸம் கிரகணின் கலப்பும் பல்கும்பு

மூக்குத் தில்லியாம் பாலவர்களுக்கு திற்பிசையல்

இது காணும் என்”

- கால்சுமிநே

If the Grani is associated with dropsy, hiccup, dyspnoea, it would be fatal.

**Prognosis:**

“Seetha Kazhichal” is a curable one with proper medicine at proper time. If it is not treated with proper medicine, it leads to severe discomfort, ulceration of colon causing passage of excessive amount of blood and mucus. Pulse appears weak, perspiration is seen. Eyes become sunken and there is dryness of tongue. Pallor of the body due to excessive loss of blood which leads to muppini. Finally
end in fatal condition. (Shanmugavelu 1988, kuppusamy mudaliar 1987)

Differential diagnosis:

Seetha kazhichal should be differentiated from other Kazhical noikal. They are

1) Maantha kazhichal:

"உறை பின்னத்து சுருக்கம் ஏற்படும் அளவு குறைவு செய்யும்
காட்டு திண்டில் இளங்கிய பாத்தூட்டைக் குறையும் தனிக்கு
செய்யும் குறைய தனிக் கதை வருவது குறைந்த பாத்தூட்டை
செய்ய மாற்று முடிவுகளுக்கு மாற்றுக்கோள் பல்கலைக
நிலை"  - ராஜகாந்தர்

In maantha kazhichal following symptoms and signs were seen. Vomiting, loss of consciousness, hoarseness of voice, dryness of skin, fever, coldness of limbs, convulsions and different types of loose stools.

2) Kanakazhichal:

"சுருக்கம் மூலம் முறும்பும் கிளஞ்சித் தொட்டு பால் பால்
பாலு குறை குறை குறை வழங்கும் அளவு குறைய குறைய குறை
காட்டு முறும்பும் மூடும் குறை வழங்கும் குறை 
செய்ய மாற்று முடிவுகளுக்கு மாற்றுக்கோள் பல்கலைக
நிலை" - மாநிலநாராயான்
In kana kazhichal the following signs and symptoms may be present. Stools may be mucus or bulky or curdy milk or curry water. Coldness of the hands and legs, deafness, fever, restlessness.

Seetha kazhichal should also be differentiated from vatha kazhichal, pitha kazhichal, kaba kazhichal, mukkutra kazhichal and oozhi noi.

**Maruthuvam (Treatment):**

In Siddha system of medicine, the principle of treatment bringing back the vitiated thathus to their normal position. This is clear from the above verses.

**Line of treatment:**

1. In the disease seetha kazhichal, the vitiated Azhal Kuttram and Keelnokku Kaal should be brought to their normal positions.

2. Specific medicine for arresting the passage of loose stools with blood and mucus.

A large numbers of medicines are started in different literatures. Among them an economical and efficacious
medicine is “Seethapethy chooranam”. It is administered with butter three times a day.

**Dose:** - 250mg – 1gram (The dose varies with age and adjusted according to the condition of the patient and severity of the disease).

The method of preparation and other details regarding the medicine are given in Annexure-1

**பதில்ப பாதிப்பு (Diet regimen):**

In infants breast feeding should be appreciated. It prevents dehydration also.

“

-பக்தர் குள தெள்ளிக்காரை

Cow’s butter milk, buffalo’s butter milk and goat’s milk are useful in “seetha kazhichal” These are stated in the following stanzas.

“

-பக்தர் குள தெள்ளிக்காரை
Nelpori gangi or nelpori water is useful for “seetha kazhical”. It also prevents dehydration.

In pararajasekaram, the following stanza mentioned the diet regimen of vayettrulaivu.
The following diet should be avoided. These are karamana keerai, kattu parangi leaves, leaves of perum payaru, Agathi leaves, katharikai and fishes.

Prophylaxis:

- Personal hygiene plays a major role in the prevention of the disease “seetha Kazhichal”. Avoiding uncooked or half cooked foods, fruits and vegetables without washing helps in the prevention of disease.
- Personal hygiene should be maintained.
- Hand washing before eating, nail cutting, use of foot wears etc.
- Toilet should be used for defecation.
In infants breast feeding should be appreciated.

**REVIEW OF MODERN LITERATURES**

**Dysentery**

Dysentery is an acute inflammation of the large intestine characterized by diarrhoea with blood and mucous in the stools.

Dysentery results from “Entero invasive” micro organisms that penetrate through the mucosa and cause inflammation of intestinal wall. Bacteria, fungi, protozoa and virus play a major role.

**Bacteria** : Shigella (S.Sonnei, S.Flexneri, S.boydii, S.dysentriae)

E-coli (Enterotoxigenic, Enteropathogenic)

Salmonella

Staphylococcus

Campylobacter

**Protozoa** : Entamoeba histolytica, Giardia lamblia etc.

**Virus** : Rota virus, Norwalk and allied viruses.

Dysentery is mainly 2 types;

1) Bacillary dysentery

2) Amoebic dysentery
BACILLARY DYSENTERY BY SHIGELLA (Shigellosis)

Bacillary dysentery is an acute infection of the bowel caused by the organisms belonging to the genus shigella. This disease is more common in infants than in adults.

Shigella is soname after shiga who in 1896 isolated the first number of this genus from epidemic dysentery in Japan.

Shigella is non motile gram negative bacilli belonging to the family Enterobacteriaceae and consists of four main pathogenic groups.

1) S.dysenteriae(Group A)
2) S.Flexneri(Group B)
3) S. Boydii(Group C)
4) S.Sonnei(Group D)

The genus is characterized by its ability to invade the intestinal epithelial cells and to produce highly potent toxins that irreversibly inhibit eukaryotic cell protein synthesis by a specific enzyme action.

Epidemiology:

Bacillary dysentery is endemic all over the world. It occurs in epidemic form wherever there is a crowded population with poor sanitation and has been a constant accompaniment of wars and natural catastrophes. Epidemics in civilian communities are associated with poverty.
Infection with shigella occurs most often during warm months in temperate climates and during rainy season in tropical climates. Both sexes are equally affected and in endemic among preschool children in tropical countries. It is most common in the second and third year of life.

Infection is rare in first six months. Breast milk, which in endemic areas contains antibodies to both virulence plasmid coded antigens and lipopolysaccharides may partially explain the age related incidence.

S. dysentriae occurred in South India in the years 1974-78 and in the eastern parts of India and Bangladesh in mid 1980’s.

S. dysentriae serotype I tends to occur in massive epidemics. It shows special predilection for child population.

**Mode of Transmission:**

The only source of infection are human beings. The mode of transmission may be as follows;

1) Direct through contaminated fingers-hand to mouth infection (Faeco oral route)

2) Through contaminated water and food or drinks.

3) Through fomites such as door handles; water tapes, lavatory seats
4) Through flies which may transmit the infection as mechanical vectors.

5) Through contaminated water when used to irrigate or wash vegetables.

6) The spread is boosted by the low level of personal hygiene and environmental sanitation level.

Pathogenesis:

Infection occurs by ingestion. The minimum infective dose is low, as few as 10-100 bacilli being capable of initiating the disease, probably because they survive gastric acidity better than other enterbacteria. Their pathogenic mechanisms resemble those of Enteroinvasive E-coli.

The bacilli infect the epithelial cells of the villi in the large intestine and multiply inside them, spreading laterally to involve adjacent cells and penetrating into the lamina propria.

Inflammatory reaction develops with capillary thrombosis, leading to necrosis of patches of epithelium, which slough off, leaving behind transverse superficial ulcers. Bacteremia may occur in severe infections, particularly in malnourished children.
**Morphology:**

In severe bacillary dysentery, the colonic mucosa becomes hyperemic and edematous, enlargement of lymphoid follicles creates small projecting nodules. Within the course of 24 hours, fibrosuppurative exudate first patchily, then diffusely covers the mucosa and produces a dirty grey yellow pseudo-membrane.

The inflammatory reaction within the intestinal mucosa builds up, the mucosa becomes soft and friable and irregular superficial ulcerations appear. If the infection is severe, large tracts may be denuded leaving only islands of preserved mucosa.

Histologically, there is predominantly mononuclear leukocytic infiltrate within the lamina propria, but the surfaces of the ulcers are covered with an acute, suppurative, neutrophilic reaction accompanied by congestion, marked edema, fibrin deposition and thrombosis of small vessels.

**Incubation period:**

The incubation period is generally between 2-7 days.

**Clinical features:**

After ingestion of shigella there is an incubation period of several days before symptoms ensue. Characteristically severe
abdominal pain, high fever, emesis, anorexia, generalized toxicity, urgency and painful defecation occur.

The diarrhoea may be watery and large volume initially evolving into frequent small volume bloody mucoid stools. Physical examination may show abdominal distension and tenderness, hyperactive bowel sounds and a tender rectum on digital examination. Chronic diarrhoea is uncommon except in malnourished infants. Only about 10% patients have diarrhoea persisting for more than 10 days.

Neurological findings are among the most common extra intestinal manifestation of bacillary dysentery occurring in as many as 40% of hospitalized infected children. They are,

- Convulsions
- Lethargy
- Head ache
- Confusion
- Nuchal rigidity
- Hallucination

The cause of neurological findings is not known. Hypocalcemia and hyponatraemia may be associated with seizures in a small number of patients. Most important complication is dehydration with its attendant risk of renal failure and death.
Complications:

Significant complications are dehydration, convulsions, Haemolytic uremic syndrome, sepsis, Disseminated intravascular coagulation, rectal prolapse, toxic megacolon, pseudo membranous colitis, cholestatic hepatitis, conjuctivits, iritis, corneal ulcer, arthritis, Reiter’s syndrome, cystitis, myocarditis and vaginitis.

Diagnosis:

Essentials of diagnosis:

Abdominal colic with bloody diarrhoea
Fever and malaise
Faecal leucocytes
Peripheral blood leucocytosis
Isolating the bacillus from feaces
Stool culture is considered to be the golden standard
Rectal swab

Examination of stools:

Macroscopic examination:

The macroscopic appearance of the stool will assist in the diagnosis. The colour of the feaces is often pink, with no foul smell, blood and mucus intimately mixed.
Microscopic examination:

Microscopically there are plenty of cellular exudates, bacteria, swollen polymorphonuclears with distinctive ring like nuclei, red cells and macrophages. Bacteriological cultures should be obtained as a routine in centres where such facilities exist.

Fresh faeces should be inoculated without delay or transported in a suitable medium such as sach’s buffered glycerol saline, Ph 7-7.4 for culturing, selective media like s.s. agar, Xyloselyseine-deoxycholate (XLD) agar or Hekton enteric (HE) agar is used.

Identification is confirmed by slide agglutination with polyvalent and monvalent sera.

Fluorescent antibody technique has been employed for the direct identification of shigellae in faeces but it is complicated by antigenic cross actions and non specific fluorescence.

Prognosis:

This is usually good except in young and debilitated infants and those with septicemia.
**Prevention:**

As bacillary dysentery is exclusively human infection transmitted by faceo-oral route, control consists essentially in improving environmental sanitation. Health education with an emphasis on washing hands with soap after each defaecation is of paramount importance.

Decontamination of water supplies, use of sanitary latrines, protection of food preparation and its storage can all reduce the primary and secondary transmission of shigella.

Breast feeding decreases the risk of symptomatic shigellosis and lessens its severity in infants who acquire infection despite breast feeding.

Meticulous attention to standards of personal hygiene and supervision of hygiene in young children are necessary for the prevention and control of Institutional out breaks of shigellosis.
AMOEBIASIS – AMOEBIC DYSENTERY BY
ENTAMOEBA HISTOLYTICA

Infection with protozoa, Entamoeba histolytica is the major parasitic infection in causing mortality and morbidity. The incidence is 20% less as compared to the adult. Protozoan infection of the intestine cause a wide variety of clinical symptoms ranging from asymptomatic carrier state to severe disease associated with pathological lesion in the gastrointestinal tract.

Distribution:

Human infection with Entamoeba histolytica is prevalent worldwide. Endemic foci are particularly common in tropics and areas with low socio-economic and sanitary standards.

WHO report about 10% of the world population is affected by E.histolytica.

Etiology:

Entamoeba histolytica is the only pathogenic organism of amoebic dysentery. The organism can exist in nature as a cyst or a trophozoite. Cysts are oval or round, asymmetrical with four nuclei. They are easily destroyed by most disinfectants and by heating to 55°C but may survive chlorination of water and in water at low temperature.
Five other species of non pathogenic amoeba may infect the human gastrointestinal tract. They are Entamoeba hartmanni, Entamoeba gingivalis, Entamoeba moshkovskii and Entamoeba polecki.

**Epidemiology:**

The prevalence of amoebic infection world wide varies from 5 to 81% with highest frequency in tropics. Humans are the major reservoir. It is estimated that 12% of the population world wide is infected with Entamoeba histolytica. This infection is associated with 500 million of cases symptomatic diseases and an annual mortality of 40,000 to 1,00,000 deaths per year.

Amoebiasis is the third leading parasite cause of death on a global scale. Amoebic dysentery due to invasion of Intestinal mucosa occurs in 1-17% of infected subjects. Dissemination of the parasite to internal organs is less common in children than adults. The pattern of infection varies in different parts of world. Infection varies in different parts of world. Infection acquired in India, Mexico, Durban and South Africa is apparently more virulent than that from other location.

Although 50-90% of population in tropics and subtropical countries harbor infection, few only suffer.
**Mode of Transmission:**

Transmission is by faeco-oral route. Food and drinks contaminated with Entamoeba histolytica cysts are the most common means of infection.

Untreated water, human faeces used as fertilizers are the important source of infection.

Food handles carrying amoebic cyst play a role in spreading the infection. Since cyst survive for over 45 minutes under the finger nails, it is easy to imagine extensive spread of infection.

Raw vegetable irrigated by contaminated water convey infection.

Epidemic outbreaks can occur in institutions such as mental hospitals and schools.

**Vectors:**

Files, cockroaches and rodents are capable of carrying the cysts and contaminating foods and drinks.

**Incubation period:**

About 3-4 weeks.

**Habitat:**

Trophozoites of E.histolytica (the large race or the tissue invading forms) live in the mucous and submucous layers of the large intestine of man.
**Pathogenesis:**

Pathogenic lesions caused by *E.histolytica* are included into two heads,

1. Primary or intestinal lesion
2. Secondary or Metastatic or Extra intestinal lesions.

When the amoeba attaches to the colonic epithelium, lyse colonic epithelial cells and invade the bowel wall. Amoeba proteins that may be involved in tissue invasion include,

1. A lecithin on the surface of parasite, that binds to the carbohydrate on the surface of colonic epithelial cells.
2. A channel forming protein that contains an amphipathic helix that induces pores in the plasma membrane of colonic epithelial cells and lyses them.
3. Cysteine proteinases which are able to break down proteins of the extra cellular matrix.

**Intestinal lesion:**

Cysts of *E.histolytica* are the infective form of the organism that resists environmental conditions. Once ingested, the organism encysts in the lumen of the lower small intestine and the other form, trophozoite is liberated. The trophozoite penetrate the mucous membrane in regions of maximal fecal stasis i.e. caecum, ascending colon, and rectosigmoid colon.
The amoeba fanout laterally to create a flask shaped ulcer with a narrow neck and base. As the lesion progresses, the overlying surface mucosa are deprived of its blood supply and sloughs formed. The earliest amoebic lesion show neutrophilic infiltrate in the mucosa, which later develop into ulcers which contain few host inflammatory cells and areas of extensive liquefactive necrosis. The mucosa between the ulcers is often normal or mildly inflamed. As uncommon lesion is the amoeboma, a napkin like constrictive lesion which represents a focus of profuse granulation tissue response to the parasite and it is sometime mistaken for a colonic tumour.

**Extra intestinal lesion:**

About 40% of patients with amoebic dysentery, parasites portal vessels and embolize to the liver to produce solitary or less often multiple discrete abscesses.

Amoebic liver abscesses have a scanty inflammatory reaction at their margins and shaggy fibrin lining. Because of haemorrhage into the cavities, the abscesses are sometimes filled with a chocolate coloured, odourless, pasty material. As it enlarges they produce pain by pressing the liver capsule and can be visualized, by ultrasound.

Metastatic lesion in other organs includes pulmonary amoebiasis, cutaneous amoebiasis, splenic amoebiasis and brain amoebiasis.
Clinical Features:

The disease may occur as an acute or chronic illness and symptoms may vary from mild gastric upsets to acute fulminant types of dysentery. The most common clinical manifestations are due to local invasion of the intestinal epithelium and dissemination to the liver.

Intestinal amoebiasis:

1. Asymptomatic infection
2. Acute or subacute or recurring dysentery
3. Chronic amoebic dysentery
4. Acute surgical amoebiasis

Extra intestinal amoebiasis:

1. Amoebic liver abscess
2. Amoebic hepatitis
3. Vague recurrent abdominal pain
4. Asymptomatic cyst passers
5. Other manifestations.

Intestinal amoebiasis:

Intestinal amoebiasis may occur within 2 week of infection or be delayed for months. The onset is usually gradual with colicky
abdominal pain and frequent bowel movement (5-8 movements/day). Diarrhoea is frequently associated with tensmus. Stools are blood stained and contain fair amount mucus with few leucocytes. Fever documented in only one third of cases. Tenderness along the colon, usually more marked over the caecum and pelvic colon.

1. **Asymptomatic infection:**

   Most of the infected individuals are asymptomatic and cysts are found in their faeces.

2. **Acute or subacute or recurring dysentery:**

   The acute type of illness is sudden in onset with vomiting and diarrhoea and passage of blood and mucus. Blood when present is usually separate, being seldom mixed with mucus or faecal matter. The sub acute cases mimic picture of ulcerative colitis.

3. **Chronic amoebic dysentery:**

   Chronic amoebic dysentery is common in patients with anaemia (due to blood loss from intestinal haemorrhage), prostrations, emaciation, dehydration and edema due to protein malnutrition. These children have recurrent episodes of dysentery and become irritable, wasted and their growth is interfered. A significant proportion of kwashiorkor cases with loose dysenteric stools have shown amoebae.
4. The acute surgical amoebiasis:

These cases with partial or complete intestinal obstruction (due to granuloma formation or cicatrization), perforation or peritonitis and intussusception are encountered infrequently. Rectal ulcer and fistula formation or prolapse of rectum are important features.

Extra intestinal amoebiasis:

1) Amoebic abscess of liver:

It constitutes the most important complication, though less frequent in children. The onset is often insidious but the presence of fever, rigour, night sweats, weight loss and upward enlargement of liver indicates the development of abscess.

Fluroscopy may reveal an elevated and immobile right hemidiaphragm. Aspiration of the abscess may yield a thick chocolate coloured material in which E. hostolytica are rarely found because amoebae primarily localize in the wall of the abscess cavity.

2) Amoebic hepatitis:

Liver involvement develops in about 5% of these with amoebic dysentery. Amoebic hepatitis is perhaps met with more frequently among children. There is pain in the right lower chest and liver is enlarged and tender. There may be associated amoebic ulceration of
the colon and often the trophozoites may be recovered in the stools or from these lesions. The association of hepatomegaly along with the detection of E.histolytica in stool and the response to therapy is considered sufficient for the diagnosis of amoebic hepatitis.

3) **Vague recurrent abdominal pain:**

Cases of vague recurrent abdominal pain in childhood without diarrhoea have sometimes been found due to amoebiasis. This is on the basis of finding the amoebae in the stools and the exclusion of the other more common causes of abdominal pain in childhood and finally by the response to specific therapy.

4) **Asymptomatic cyst passers:**

Asymptomatic cases may have acquired the infection without any overt symptoms of the disease. They constitute a potential danger to the community but fortunately rare among children.

5) **Other manifestations and complications:**

Manifestations like amoebic meningoencephalitis (Neglaria infection) brain abscess and pulmonary involvement occur occasionally and pose difficulties in diagnosis and management.
**Diagnosis:**

**Essentials of diagnosis:**

- Diarrhoea with blood and mucus
- Evidence of colitis
- Pain and tenderness
- Detecting the organism in stool samples for trophozoites and cysts.
- Sigmoidoscopy
- Endoscopy and biopsy when stool samples are negative.
- Indirect haemagglutination test

**Examination of stools:**

The diagnosis of amoebic colitis is established by examination of wet mounts of the stool specimen. The pre-requisites for obtaining a greater number of positive results are

1) Stools must have been freshly passed and the bloody or mucoid portion should be picked out for microscopic examination.

2) More number of specimens (Atleast six) should be examined (single stool examination reveals only 1/6 to 1/3 of the total infection)

3) Repeated examination of stools must be done in suspected cases.

Formed stools are microscopically examined initially in saline and iodine mounts for amoebic cysts. If there is only delay in examination of stool, a portion of the specimen may be refrigerated
for few hours at 4°Celsius or placed in polyvinylalcohol and 10% formalin.

**Serological test:**

Serologic tests may also be helpful if the stool examinations are inconclusive. Four tests are available. They are indirect haemagglutination assay (IHA), Agar gel diffusion (AGD), ELISA and counter immuno electrophresis (CIEP). Where as IHA tests are persistently positive for upto 10 years after an attack of amoebic colitis, the other tests typically negative within 6 to 12 months of an episode of colitis. Patients with amoeboma are usually seropositive.

**Sigmoidoscopy:**

Sigmoidoscopy is performed in cases where clinical evidence is strong but stools are negative. The edge of colonic, ulcers are scrapped and examined for the presence of trophozoites.

**Barium enema:**

It may be required to distinguish other forms of chronic colitis from amoebic dysentery.

**Differential diagnosis:**

Amoebiasis should be considered in the differential diagnosis of every case of diarrhoea. The commonest condition to be differentiated is bacillary dysentery.
Other conditions like ulcerative colitis, tuberculous enteritis, crohn’s disease, sprue, malaria dysentery may need to be differentiated.

**Prognosis:**

With the early detection and good treatment of both the diseases, the prognosis is generally good. The prognosis is less favorable in the case of ruptured live abscesses and amoebic abscess of brain (this is rare in adults and children)

**Prevention:**

- Eradication of vectors such as houseflies. Hygienic practices such as keeping food covered filtration and boiling water etc. Since chlorination of water is ineffective iodine releasing tablets, Globaline tablets are convenient and effective.
- Avoiding consumption of raw vegetables can reduce the incidence of amoebiasis.
- Those cooking for large number of people must periodically undergo stool examinations for detecting asymptomatic cyst passers who are the reservoirs of infection.
- Proper sanitary disposal of human excreta
- Maintaining good personal hygiene like hand washing with soap after defecation.

These factors are effective in the prevention of disease.
## Differences between amoebic and bacillary dysentery

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<th>Bacillary dysentery</th>
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<td>Age</td>
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<td>Often acute, even explosive or hyperacute, good health prior to attack.</td>
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<td>Course</td>
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<td>Symptoms and signs</td>
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</tr>
<tr>
<td>7</td>
<td>Complications and outcome</td>
<td>Liver abscess or hepatitis surgical amoebiosis including perforation. Fatal outcome due to exhaustion, liver abscess or intestinal haemorrhage.</td>
<td>Due to exhaustion, dehydration and toxemia.</td>
</tr>
</tbody>
</table>
## Difference between amoebic and bacillary stools

<table>
<thead>
<tr>
<th>S.No</th>
<th>Amoebic Stools</th>
<th>Bacillary Stools</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Naked eye</td>
<td>Very little fecal matter - chiefly exudates</td>
</tr>
<tr>
<td></td>
<td>An appreciable amount of faecal matters</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Blood appears dark brown “Altered”</td>
<td>Blood bright red</td>
</tr>
<tr>
<td>3</td>
<td>Peculiar characteristic foul smell</td>
<td>No foul smelling</td>
</tr>
<tr>
<td>4</td>
<td>Acid to litmus</td>
<td>Alkaline to litmus</td>
</tr>
<tr>
<td>5</td>
<td>Microscopy</td>
<td>Chiefly exudates</td>
</tr>
<tr>
<td></td>
<td>An appreciable amount of faecal matter</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>RBC tend to be clumped</td>
<td>RBC discrete</td>
</tr>
<tr>
<td>7</td>
<td>Pus cells and macrophages virtually absent E.H.Veg</td>
<td>The presence of pus cells and macrophages are characteristic feature</td>
</tr>
<tr>
<td></td>
<td>present</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Common intestinal bacteria seen in wet preparation</td>
<td>No bacteria seen in wet preparation</td>
</tr>
<tr>
<td>9</td>
<td>Flagellates commonly seen</td>
<td>Flagellates usually absent.</td>
</tr>
<tr>
<td>10</td>
<td>Charcot leydon crystals often present</td>
<td>Charcot leydon crystals not a feature.</td>
</tr>
</tbody>
</table>
MATERIALS AND METHODS

The clinically study on seetha kazhichal was carried out in the in-patient department (postgraduate) of kuzhanthai maruthuvam at government siddha medical college, palayamkottai.

Selection of cases

Twenty cases of both sex in the age group between one year to twelve years were selected from the out patient department and admitted in the post-graduate kuzhanthai maruthuvam ward. The diagnosis was confirmed by clinical and laboratory criteria.

Study of siddha clinical diagnosis

The following siddha methods of diagnosis were employed: poriyalarithal, pulanaalarithal, mukkutra nilai, ezhu udal thathukkal, envagai thervugal, neerkuri, neikuri etc.

Evaluation of clinical parameters:

During admission the patients had passage of loose stools frequently. The loose stools were often mixed with blood and mucus and associated with lower abdominal pain and tenesmus.

Patients having signs of severe dehydration and in need of emergency care were excluded from this study. Patients having
ulcerative colitis and lactose intolerance were also excluded from study.

**Clinical investigations:**

**Stools examination:**

Stools were examined macroscopically for colour, nature, odour, etc. and microscopically for ova, cyst, trophozoites of entamoeba histolytica, occult blood, culture for shigellasp etc.

Routine blood and urine examinations were done for all cases.

**Case proforma:**

All clinical signs and symptoms of seetha kazhichal, history of present and past illness, personal history, nutritional history, family history, immunizational history, laboratory investigations and management methods were systemically recorded in a proforma for analysis.

**Administration of trial medicine:**

The trial medicine used in the study is “Seethapethy chooranam”. Preparation and properties, biochemical analysis, pharmalogical studies and antibacterial activity of the drug are dealt in detail in annexures.
RESULTS AND OBSERVATIONS

Results were observed with regard to the following features:

1. Age distribution
2. Sex distribution
3. Religion distribution
4. Socio economic status
5. Food habits
6. Mukkuttra Kaalam
7. Paruvakaalam
8. Thinai
9. Aetiological factors
10. Duration of illness
11. Clinical presentation
12. Signs and symptoms
13. Reference to mukkutram
14. Ezhu udal kattugal
15. En vagai thervugal
17. Microscopic examination of stool and culture.
18. Inpatient case report.
Table: 1 Age Distribution

<table>
<thead>
<tr>
<th>S.No</th>
<th>Age and paruvam</th>
<th>No of cases</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1-6 months kappu paruvam</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2</td>
<td>6-12 months senkeeraiparuvam</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3</td>
<td>1½-2 years Thalattu paruvam</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>4</td>
<td>1½-2 years sappani paruvam</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>5</td>
<td>2-2½ years mutha paruvam</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>6</td>
<td>2½-3 years varugai paruvam</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>7</td>
<td>3-3½ years Ambuli paruvam</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>8</td>
<td>3½-4 years chitril paruvam</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>9</td>
<td>4-4½ years Siruparai paruvam</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>10</td>
<td>4½-5 years siruthar paruvam</td>
<td>1</td>
<td>5%</td>
</tr>
<tr>
<td>11</td>
<td>5-6 years Pethai (female) Pillai</td>
<td>2</td>
<td>10%</td>
</tr>
<tr>
<td></td>
<td>(Male)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>12</td>
<td>6-12 years pelhumbai (Female) Siruparuvam (male)</td>
<td>17</td>
<td>85%</td>
</tr>
</tbody>
</table>

Among the 20 cases 85% of cases in the age group of 6-12 years, 10% in the age group of 5-6 years and 5% in the age group of 4½ - 5 years.
**Table: 2 Distribution of sex**

<table>
<thead>
<tr>
<th>S.No</th>
<th>Sex</th>
<th>Percentage</th>
<th>No of cases/20</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Male</td>
<td>90%</td>
<td>18</td>
</tr>
<tr>
<td>2</td>
<td>Female</td>
<td>10%</td>
<td>2</td>
</tr>
</tbody>
</table>

Out of 20 patients 18 were male children and 2 were female children.

**Table: 3 Religion Distribution**

<table>
<thead>
<tr>
<th>S.No</th>
<th>Religion</th>
<th>No of cases/20</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Hindu</td>
<td>10</td>
<td>50%</td>
</tr>
<tr>
<td>2</td>
<td>Christian</td>
<td>4</td>
<td>20%</td>
</tr>
<tr>
<td>3</td>
<td>Muslim</td>
<td>6</td>
<td>30%</td>
</tr>
</tbody>
</table>

Out of 20 cases 50% cases belonged to Hindu and 20% cases belonged to Christian, 30% of cases belonged to Muslim

**Table: 4 Socio economic status**

<table>
<thead>
<tr>
<th>S.No</th>
<th>Socio Economic Status</th>
<th>No of cases/20</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Poor</td>
<td>15</td>
<td>75%</td>
</tr>
<tr>
<td>2</td>
<td>Middle</td>
<td>5</td>
<td>25%</td>
</tr>
<tr>
<td>3</td>
<td>Rich</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Out of 20 cases 75% cases belonged to poor socio economic status and 25% of cases belonged to middle class.
Table: 5 Distribution according to food habits

<table>
<thead>
<tr>
<th>S.No</th>
<th>Food Habits</th>
<th>No of cases/20</th>
<th>percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Vegetarian</td>
<td>3</td>
<td>15%</td>
</tr>
<tr>
<td>2</td>
<td>Mixed</td>
<td>17</td>
<td>85%</td>
</tr>
</tbody>
</table>

According to food habits 85% of cases had mixed diet and 15% had vegetarian diet.

Table: 6 Distribution according to Mukkuttra kaalam

<table>
<thead>
<tr>
<th>S.No</th>
<th>Kaalam</th>
<th>No of cases /20</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Vatha Kaalam</td>
<td>20</td>
<td>100%</td>
</tr>
<tr>
<td>2</td>
<td>Pitha kaalam</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3</td>
<td>Kaba kaalam</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

100% cases were from vatha kaalam because the clinical study was carried out in children under the age of 12.
Table: 7 Distribution according to paruva kaalam

<table>
<thead>
<tr>
<th>S.No</th>
<th>Paruva kaalam</th>
<th>Month</th>
<th>No of cases/20</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Kaar kaalam</td>
<td>Aavani &amp; purattasi</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2</td>
<td>Koothir kaalam</td>
<td>Iyppasi &amp; karthigai</td>
<td>7</td>
<td>35%</td>
</tr>
<tr>
<td>3</td>
<td>Munpani kaalam</td>
<td>Markazhi &amp; thai</td>
<td>8</td>
<td>40%</td>
</tr>
<tr>
<td>4</td>
<td>Pinpani kaalam</td>
<td>Maasi &amp; Panguni</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>5</td>
<td>Elavenil kaalam</td>
<td>Chitrai &amp; vaigasi</td>
<td>5</td>
<td>25%</td>
</tr>
<tr>
<td>6</td>
<td>Muthuvenil kaalam</td>
<td>Aani &amp; Aadi</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

35% of cases were recorded in Koothir kalam, 40% of cases in Munpani kaalam and 25% of cases in Elavenil kaalam.

Table: 8 Distribution according to thinai

<table>
<thead>
<tr>
<th>S.No</th>
<th>Thinai</th>
<th>No of cases/20</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Kurungi(Hill)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2</td>
<td>Mullai(Forest)</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>3</td>
<td>Marutham(Fortile)</td>
<td>17</td>
<td>85%</td>
</tr>
<tr>
<td>4</td>
<td>Neithal(Coastal)</td>
<td>3</td>
<td>15%</td>
</tr>
<tr>
<td>5</td>
<td>Palai(Desert)</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

85% of cases came from “marutha nilam”. 15% of cases from “Neithal Nilam”
Table: 9 Aetiological Factors

<table>
<thead>
<tr>
<th>S. No</th>
<th>Aetiological factor</th>
<th>No of cases/20</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Bottle feeding</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2</td>
<td>Drinking impure water</td>
<td>13</td>
<td>65%</td>
</tr>
<tr>
<td>3</td>
<td>Intake of excessive pungent and sour tasted food</td>
<td>5</td>
<td>25%</td>
</tr>
<tr>
<td>4</td>
<td>Intake of contaminated food items</td>
<td>8</td>
<td>40%</td>
</tr>
<tr>
<td>5</td>
<td>Lack of personal hygiene</td>
<td>13</td>
<td>65%</td>
</tr>
</tbody>
</table>

Drinking impure water constitute 65%, intake of contaminated food item constitute 40%, intake of excessive pungent and sour tasted food constitute 25% and lack of personal hygiene constitute 65% of cases.

Table: 10 Duration of illness

<table>
<thead>
<tr>
<th>S. No</th>
<th>Duration of illness</th>
<th>No of cases/20</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1 day</td>
<td>1</td>
<td>5%</td>
</tr>
<tr>
<td>2</td>
<td>2 days</td>
<td>13</td>
<td>65%</td>
</tr>
<tr>
<td>3</td>
<td>3 days</td>
<td>4</td>
<td>20%</td>
</tr>
<tr>
<td>4</td>
<td>4 days</td>
<td>2</td>
<td>10%</td>
</tr>
</tbody>
</table>

5% cases were suffering for 1 day, 65% cases for 2 days, 20% of cases for 3 days and 10% of cases for 4 days.
### Table: 11 Clinical presentation

<table>
<thead>
<tr>
<th>S.No</th>
<th>Signs and symptoms</th>
<th>No of cases/20</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Passing bright red scanty loose stools with mucus and blood</td>
<td>13</td>
<td>65%</td>
</tr>
<tr>
<td>2</td>
<td>Passing dark brown scanty loose stools or semisolid stools with mucus and blood</td>
<td>7</td>
<td>35%</td>
</tr>
<tr>
<td>3</td>
<td>Indigestion</td>
<td>20</td>
<td>100%</td>
</tr>
<tr>
<td>4</td>
<td>Abdominal discomfort</td>
<td>20</td>
<td>100%</td>
</tr>
<tr>
<td>5</td>
<td>Flatulence</td>
<td>20</td>
<td>100%</td>
</tr>
<tr>
<td>6</td>
<td>Abdominal pain</td>
<td>20</td>
<td>100%</td>
</tr>
<tr>
<td>7</td>
<td>Raised body temperature</td>
<td>7</td>
<td>35%</td>
</tr>
<tr>
<td>8</td>
<td>Rectal tenesmus</td>
<td>18</td>
<td>90%</td>
</tr>
<tr>
<td>9</td>
<td>Post prandial evacuation of bowels</td>
<td>5</td>
<td>25%</td>
</tr>
<tr>
<td>10</td>
<td>Tenderness over caecal region and ascending colon</td>
<td>9</td>
<td>45%</td>
</tr>
<tr>
<td>11</td>
<td>Tenderness over transverse colon</td>
<td>4</td>
<td>20%</td>
</tr>
<tr>
<td>12</td>
<td>Tenderness over descending colon</td>
<td>7</td>
<td>35%</td>
</tr>
<tr>
<td>13</td>
<td>Tenderness and enlargement of liver</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>14</td>
<td>Nausea and vomiting</td>
<td>5</td>
<td>25%</td>
</tr>
</tbody>
</table>
12. THE NATURE OF SIGNS AND SYMPTOMS

Interrogation:

Out of 20 cases, 65% cases passed bright red scanty loose stools mixed with blood and mucus for about 5 to 10 times a day. 35% passed dark brown scanty loose stools with blood and mucus 2 to 5 times a day. Almost the cases had abdominal pain, abdominal discomfort, flatulence and indigestion. 90% had rectal tenesmus. 25% had nausea and vomiting, 25% had post prandial evacuation of bowels.

Inspection:

In all the patients, the general contour of the abdomen was normal respiratory movements. No visible peristaltic movements. No distended veins. The umbilical and hernial sites were in normal position.

Palpation:

45% of cases had tenderness over caecal region and ascending colon. 35% of cases had tenderness over descending colon. 20% of cases had tenderness over transverse colon. 35% of cases had raised body temperature.

Percussion:

There was no fluid and shifting dullness in all cases.
Table: 13 Incidence of patients with seetha kazhichal according to mukkutrangal

<table>
<thead>
<tr>
<th>S.No</th>
<th>Mukkutram</th>
<th>No of cases/20</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Vatham</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Piranan</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>2</td>
<td>Abanan</td>
<td>20</td>
<td>100%</td>
</tr>
<tr>
<td>3</td>
<td>Uthanan</td>
<td>5</td>
<td>25%</td>
</tr>
<tr>
<td>4</td>
<td>Viyanan</td>
<td>20</td>
<td>100%</td>
</tr>
<tr>
<td>5</td>
<td>Samanan</td>
<td>20</td>
<td>100%</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>-</td>
<td>-</td>
</tr>
<tr>
<td>9</td>
<td>Devathathan</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Dhanjeyan</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td>Pitham</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>Analam</td>
<td>20</td>
<td>100%</td>
</tr>
<tr>
<td>2</td>
<td>Ranjagam</td>
<td>5</td>
<td>25%</td>
</tr>
<tr>
<td>3</td>
<td>Saathagam</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>4</td>
<td>Pirasagam</td>
<td>5</td>
<td>25%</td>
</tr>
<tr>
<td>5</td>
<td>Aalosagam</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>
According to vatham, in 100% of cases abanan, samanan and viyanan were deranged. Uthanam was deranged in 25% of cases. With reference to pitham analam was deranged in 100% of cases. Ranjagam and pirasagam were affected in 25% of cases. As per kabam 100% of cases had deranged kilethagam.

Table: 14 Ezhu udalkattugal of patients with Seetha kazhickal

<table>
<thead>
<tr>
<th>S.No</th>
<th>Udal kattugal</th>
<th>No of cases/20</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Saarm</td>
<td>20</td>
<td>100%</td>
</tr>
<tr>
<td>2</td>
<td>Senner</td>
<td>20</td>
<td>100%</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>Not applicable</td>
<td></td>
</tr>
</tbody>
</table>

Saram and senner were affected in 100% of cases.
15. Envagai thervugal

Among 20 cases, the Envagai thervugal were observed as follows

1. Naa

Coated and slightly dried tongue was observed in 15 patients (75%)

2. Niram

5 patients were slightly pale. Others were normal in colour (25%)

3. Mozhi

There was no change to mozhi in all the cases

4. Vizhi

The conjunctiva was pallor in 5 cases (25%)

5. Sparism

7 cases (35%) had raised body temperature

6. Malam

7 patients (35%) were passing dark brown copious loose stools containing blood and mucus, offensive odour with frequency of 2 to 5 times a day.

13 patients (65%) were passing loose bright red scanty stools with blood and mucus 5 to 10 times a day.
Moothiram:

Burning micturation was observed in 4 patients (20%) yellow coloured urine in 3 cases (15%) and normal urine in 13 cases (65%)

Naadi

In 14 patients (70%) pithavatha naadi was felt and vathapitha naadi was felt in 6 cases (30%)

**Neikuri reference of urine obtained from patients with seetha kazhichal**

<table>
<thead>
<tr>
<th>S.No</th>
<th>Neikuri reference</th>
<th>Character of urine</th>
<th>No of cases/20</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Vathaneer</td>
<td>Spreading like snake</td>
<td>6</td>
<td>30%</td>
</tr>
<tr>
<td>2</td>
<td>Pithaneer</td>
<td>Spreading like ring</td>
<td>14</td>
<td>70%</td>
</tr>
<tr>
<td>3</td>
<td>Kabaneer</td>
<td>Spreading like pearl</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

In neikuri, 70% of patients showed pithaneer and 30% of patients showed vathaneer.
Table: 16 Haematological profile in patients with seetha kozhichal

<table>
<thead>
<tr>
<th>S.No</th>
<th>Haemoglobin content (%)</th>
<th>No of cases/20</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Upto 55</td>
<td>1</td>
<td>5%</td>
</tr>
<tr>
<td>2</td>
<td>55 to 60</td>
<td>3</td>
<td>15%</td>
</tr>
<tr>
<td>3</td>
<td>60 to 65</td>
<td>4</td>
<td>20%</td>
</tr>
<tr>
<td>4</td>
<td>65 to 70</td>
<td>10</td>
<td>50%</td>
</tr>
<tr>
<td>5</td>
<td>above 71</td>
<td>2</td>
<td>10%</td>
</tr>
</tbody>
</table>

Haemoglobin content was upto 55% in 1 cases (5%), 55% to 60% in 3 cases (15%), 60 to 65% in 4 cases (20%), 65 to 70% in 10 cases 50% and above 71 in 2 cases (10%)

Table: 17 Erythrocyte sedimentation rate (ESR/hour)

<table>
<thead>
<tr>
<th>S.No</th>
<th>ESR/hr</th>
<th>No of cases/20</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1-10 mm</td>
<td>3</td>
<td>15%</td>
</tr>
<tr>
<td>2</td>
<td>11-20 mm</td>
<td>8</td>
<td>40%</td>
</tr>
<tr>
<td>3</td>
<td>21-30 mm</td>
<td>7</td>
<td>35%</td>
</tr>
<tr>
<td>4</td>
<td>31-40 mm</td>
<td>2</td>
<td>10%</td>
</tr>
<tr>
<td>5</td>
<td>41-50 mm</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

In 3 cases (15%) ESR was between 1-10 mm
In 8 cases (40%) ESR was between 11-20 mm
In 7 cases (35%) ESR was between 21-30 mm
In 2 cases (10%) ESR was between 31-40 mm

Table: 18 Total leucocyte count/cu.mm

<table>
<thead>
<tr>
<th>S.No</th>
<th>Total leucocyte/cu.mm</th>
<th>No of cases/20</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>6000-8000</td>
<td>3</td>
<td>15%</td>
</tr>
<tr>
<td>2</td>
<td>8000-10000</td>
<td>13</td>
<td>65%</td>
</tr>
<tr>
<td>3</td>
<td>10000-12000</td>
<td>4</td>
<td>20%</td>
</tr>
</tbody>
</table>

Total leucocyte count was between 6000-8000 in 3 cases (15%), 8000-10000 in 13 cases (65%) and 10000-12000 in 4 cases (20%)
DISCUSSION

Seetha kazhichal is a common pediatric problem. This disease has been clearly described in several siddha texts. Seetha kazhichal mostly resembles both bacillary and amoebic dysentery in modern aspects.

In this study several cases were treated at the out-patient P.G.Kuzhanthai Maruthuvam department at Government siddha Medical College, Playamkottai and 20 cases were treated at the In-patient word of the above department, according to clinical features mentioned in siddha texts. Siddha methods of diagnosis were carried out and recorded in proforma with the help of modern investigations. The diagnosis were confirmed and treated with trial drug “Seethapethy chooranam” and clearly observed. The observations are discussed here.

**Incidence with reference to age:**

Out of the 20 cases, 17 cases were between 6 -12 years, 2 cases were between 5 - 6 years and 1 cases were between 4 ½ - 5 years.

**Incidence with reference to sex:**

Among 20 cases, 18 were malechildren and 2 were female children
Incidence with reference to religion:

Among 20 cases 10 cases were Hindu, 4 cases were Christian, 6 cases were Muslim.

Incidence with reference to socioeconomic status:

Most of the patients (75%) belonged to poor socioeconomic status and 25% of patients belonged to middle cases.

Distribution according to food habits:

According to food habits, 85% of patients have mixed diet.

Distribution according to Mukkuttra kalam:

According to siddha texts, Vathakalam constitutes 1-33 years of age. Hence all the cases selected for this study came under Vathakalam. But seetha kzhichal is a pitha disease.

In neikuri reference of urine from seetha kzhichal patients, 70% showed pithaneer which supports the seetha kzhichal disease as a pitha disease.

Incidence with reference to paruva kaalam:

Out of the 20 cases, 7 cases were Koothir kalam, 8 cases were Munpani kalam, 5 cases were Elavenil kalam.

Incidence with reference to thinai:

Out of the 20 cases, 17 cases were marutha nilam, 3 cases were Neithal nilam. This point slightly deviates from the concept of siddha, that people of marutha nilam should be free from diseases.
This may be due to urbanization, industrialization, pollution, increasing population and lack of personal hygiene etc.

**Incidence with reference to Aetiological factors:**

Considering the aetiological factors for the disease seetha kazhichal both siddha and modern literatures mainly point out the incidence of micro organisms. This is evident from the observations and results that drinking contaminated water constitutes about 65%, intake of contaminated food items constitutes about 40% and lack of personal hygiene about 65%.

**Incidence with reference to mukkuttram:**

With reference to siddha texts mukkuttram were analysed in the following pattern.

**Vatham**

All the 20 cases showed derangement of abanan, viyanan and samanan that produced loose stools, rectal tenesmus, abdominal discomfort etc. Udhanan was deranged in 25% of cases which produced nausea and vomiting.
**Pitham**

All the patients showed the derangement of analam which produced loose stools with blood and mucus. In 25% of patients ranjagam and prasagam were affected which produced pallor of the skin.

**Kabam**

Derangement of kilethagam in all cases produced loose stools with mucus and indigestion.

**Incidence with reference to Ezhu udal kattugal:**

Saaram and senner were affected in all 20 cases which produced symptoms like loose stools with blood and mucus and anaemia.

**Envagai thervugal**

According to this, Naa was affected in 75% of cases (Coated and dryness). Niram and vizhi were affected in 25% of cases. Sparism was affected in 35% of cases (Fever)

Malam was affected in all 20 cases (100%) (loose stools with blood and mucus) and moothiram was affected in 35% of cases (burning micturition and yellow colour urine)
In Neikuri 70% of cases showed pithaneer and 30% of cases showed vathaneer. The maximum incidence of pitha neer reveals the disease as pitha disease.

Regarding Naadi, 70% of cases had pithavatha naadi and 30% patients had vathapitha naadi. The maximum occurrence of naadi was pithavatha naadi, also according to sathaga naadi, pithavatha naadi will be present in seethakazhichal.

**Incidence with reference to duration of illness:**

Out of 20 cases, 65% of them had complaints for 2 days, 20% of them had complaints for 3 days, 5% of them for 1 day and 10% of them for 4 days.

**Incidence with reference to clinical presentation:**

All the cases had the symptoms of passing frequent small quantities of stools mixed with blood and mucus, abdominal colic etc. siddha literature furnish us with the above clinical features. This nearly coincides with amoebic and bacillary dysentery mentioned in modern system of medicine.

Among the 20 cases, 65% of patients passed bright red and loose stools with blood and mucus 5 – 10 times a day evidencing bacillary dysentery and 35% of patients passed dark brown semisolid
stools with blood and mucus 2–5 times a day with offensive odour evidencing amoebic dysentery.

All the patients had abdominal pain, discomfort, flatulence and indigestion.

90% of patients had rectal tenesmus and 35% had raised body temperature. 25% of patients had nausea and vomiting.

All the patients are advised to attend the out patient ward for further follow up.

**Laboratory investigations:**

Routine examination of blood and urine were done. Macroscopical and microscopical examinations of stools were done during admission and discharge.

Bacillary dysentery is more common in infants and children than amoebic dysentery. Present study also reveals the same (i.e) 65% of cases were due to bacilli and 35% of cases were due to amoeba.

**Treatment**

If the cases suffering from seetha kzhichal are not timely diagnosed and treated, it will lead to certain complications. They are discomfort, ulceration of colon, pallor of the body due to excessive loss of blood in the stools, perspiration, weakened pulse, reduced
urine output and muppini. In modern system also, the important complications explained are severe thirst, electrolyte loss, prostration, oliguria and anaemia etc.

In order to prevent the complications in the patients with seetha kazhichal and to treat the patients, the trial medicine ‘Seethapethy chooranam’ was given with butter three times a day. The dose of the medicine was adjusted according to the age and weight of the children and severity of the disease.

All the patients were strictly advised to follow pathiyam. They were also advised to follow personal hygiene and other preventive measures. Satisfactory improvement was reported within 2 days of commencement of the treatment. Out of 20 cases signs and symptoms were completely relieved in 60% of cases. Symptoms and signs were reduced in 40% of cases. The results were based on the clinical improvement

**Biochemical analysis of the trial medicine**

The biochemical analysis of the trial medicine showed the presence of tannic acid, ferrous iron, sulphate.
Antimicrobial study on Seethapethychooranam

The antimicrobial study on ‘Seethapethychooranam’ showed the significant inhibitory effect of bacterial growth against shigella, Flexneri, E-coli, salmonella typhi which are the common Enterobacterial pathogen, responsible for diarrhoeal disorders.

Pharmacological analysis

The pharmacological analysis of the trial medicine shows Anti diarrhoeal, Styptic, Anti spasmodic, Anti pyretic and acute and chronic Anti inflammatory actions.

All the treated cases were advised to have a follow up and were advised to lead a hygiene way of living, food, environment as mentioned in “Theriyar pini anugavithi vozhukkam”.

80
SUMMARY

Twenty children with seetha kzhichal, diagnosed clinically and admitted in In-patient ward were observed for clinical diagnosis, laboratory diagnosis and treated with “Seethapethy chooranam”

Clinical diagnosis of seetha kzhichal was clone on the basis of clinical features described in Bala vagadam, siddha maruthuvam, Noi naadal and Noi muthal naadal thiratu etc.

The etiology and clinical features of seetha kzhichal were correlated with the etiology and clinical features of bacillary and amoebic dysentery.

Dehydrated children, children having lactose intolerance, ulcerative colitis and in need of emergency treatment were excluded for this study.

Siddha system of clinical methods like Envagai thervugal, Neerkuri, Neikuri were carried out in all the patients and recorded.

Routine blood and urine examination were done. Stools were collected from each patient and subjected to analysis, to differentiate amoebic and bacillary dysentery.
The trial medicine Seethapethy chooranam was given internally 3 times a day with butter for the clinical treatment and management of seetha kazhichal. The dosage of the drug is 250mg-1g (The dose of medicine was adjusted according to the age and weight of children and severity of the disease)

The observation made during the clinical study showed that the trial drug Seethapethy chooranam was clinically effective for seetha kazhichal.

The Biochemical analysis of the trial medicine showed the presence of tannic acid, ferrous iron, sulphate.

Antimicrobial study of Seethapethy chooranam showed effective inhibitory action against shigella flexneri and other enteropathogenic organisms like E-coli and salmonella typhi.

In pharmacological analysis, the trial medicine had Anti diarrhoeal, Styptic, Anti spasmodic, Anti pyretic and acute and chronic Anti inflammatory actions.

The parents and children were advised to follow the preventive measures and to lead a hygienic life.
CONCLUSION

All the twenty in-patient children and several out-patient children in the P.G.Kuzhanthai maruthuvam department, Govt Siddha Medical College, Palayamkottai with Seetha kathichal were treated with Seethapethy chooranam 3 times a day with butter internally.

No adverse effects were noticed during the treatment period. The trial drug Seethapethy chooranam is purely herbal, easily available and harmless to infants and children.

The method of preparation is easy and the cost is comparatively economical.

The drug has got Anti microbial, Anti diarrhoeal, Styptic, Anti spasmodic, Anti pyretic and acute and chronic Anti inflammatory actions.

Clinical results were found to be good in 60% of cases and moderate results were found in 40% of cases.

Because of the encouraging results clinically, the study may be undertaken with same medicine in a large number of cases and it may throw new lights for the treatment of “Seetha kathichal”
ANNEXURE - I

PROPERTIES AND PREPARATION OF TRIAL DRUG

Name of the trial medicine: ‘Seethapethy chooranam’

Reference: Kannusamy parambarai vaidhyam

Botanical name: Syzygium aromaticum

Family: Myrtaceae

Suvai: Karppu

Thanmai: Veppam

Pirivu: Kaarppu

Action: Antispasmodic, Carminative, Stomachic

Properties:

It is indicated for seetha kazhichal in Gunapadam mooligai vaguppu. It is well known from this verse,

“பிந்தை மாந்தம் பரதினமானாலாமேயும்
கக்கக்கை தாக்கத்தை தன்னொலி - வரா
துறுவாம் நீரால் தீக்குத் தோண் கந்தாம்.
மனைர்கள் கனியதை வாங்கும்”
Constituents:

The analysis of a sample of seeds gave the following values:

- Moisture - 25.2%
- Protein - 5.2%
- Fat - 8.9%
- Fibre - 9.5%
- Carbohydrates - 46%

The values for some of the mineral constituents,

- Ca – 740 mg/100gm
- P – 100 mg/100gm
- Fe – 4.9 mg/100gm
- Iodine – 50.7 μg/100gm

Vitamins,

- Carotene - 253 μg/100gm
- Thiamine - 0.08 mg/100gm
- Riboflavin - 0.13 mg/100gm
- Nicotinic acid - 1.51 mg/100gm

Tannin – 13%

Oleanolic acid
Botanical name : Cinnamomum verum
Family : Lauraceae
Suvai : Karppu with Inippu
Thanmai : Thatpam
Pirivu : Inippu
Action : Stimulant, Carminative, Aphrodisiac

Properties:

It is indicated for seetha kzhichal in Gunapadam mooligai vaguppu. It is well known from this verse,

“சேது கழித்து கண்ணை காற்றில் காய் கொஞ்சில் கிளிய புழல் பக்தது
திருக்கையில் குக்கிளிய பிற்கு காரணம் - புள்ளத்து ஆய்வு
ஏற்பகுதியாகம் தண்ணீர் கூத்துப் புழல் விழாம் கற்பது
கற்பது புழல் விழாம் கற்பது”
Botanical name : Terminalia chebula
Family : Combretaceae
Suvai : Thuvarppu
Thanmai : Veppam
Pirivu : Inippu
Action : Astringent
            Stomachic
            Tonic

Chebulinic acid

Lavangam is a good source of Nicotinic acid. Lavangam, Lavanga pattai, Kadukkai poo is a good source of tannic acid.
**Preparation of the trial drug**

Lavangam - 50gm  
Lavangapattai - 50gm  
Kadukkai poo - 50gm

The drugs are purified. Then they are fried for few minutes. Gently powdered nicley and filtered in a pure cloth and preserved in air tight container.

**Dosage:**

250mg – 1gm (The dose of medicine was adjusted according to the age and weight of children and severity of the disease.)

Adjuvant : Butter  
Indication : Seetha kazhichal.  
Reference : Kannusamy parambarai vaidhyam
ANNEXURE – II

BIO-CHEMICAL ANALYSIS OF SEETHAPETHY

CHOORANAM

Preparation of the extract:

5 gms Chooranam was weighed accurately and placed in a clear 250 ml beaker. Then 50 ml of distilled water is added to it and dissolved well. Then it is boiled well for about 10 minutes. Then cooled, filtered in a 100ml volumetric flask and then it was made upto 100ml with distilled water. This fluid was taken for analysis.

QUALITATIVE ANALYSIS:

<table>
<thead>
<tr>
<th>S.NO</th>
<th>EXPERIMENT</th>
<th>OBSERVATION</th>
<th>INFEERENCE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>TEST FOR CALCIUM</td>
<td>No White precipitate is formed</td>
<td>Absence of Calcium</td>
</tr>
<tr>
<td></td>
<td>2ml of the above prepared extract is taken in a</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>clean test tube. To this add 2 ml of 4% Ammonium</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>oxalate solution is added to it</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>TEST FOR SULPHATE:</td>
<td>A white precipitate is formed</td>
<td>Indicates the presence of S</td>
</tr>
<tr>
<td></td>
<td>2ml of the extract is added to 5% barium chloride</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>solution</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>TEST FOR CHLORIDE</td>
<td>No white precipitate is formed</td>
<td>Absence of chloride</td>
</tr>
<tr>
<td></td>
<td>The extract is treated with silver nitrate</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>solution</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>TEST FOR CARBONATE</td>
<td>No brisk effervescence is formed</td>
<td>Absence of carbonate</td>
</tr>
<tr>
<td></td>
<td>The substance is treated with concentrated HCL.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>TEST FOR STARCH</td>
<td>No blue colour is formed</td>
<td>Absence of starch</td>
</tr>
<tr>
<td></td>
<td>The extract is added with weak iodine</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>TEST FOR IRON-FERRIC</td>
<td>No blue colour is formed</td>
<td>Absence of ferric Iron</td>
</tr>
<tr>
<td>---</td>
<td>---------------------</td>
<td>--------------------------</td>
<td>------------------------</td>
</tr>
<tr>
<td>6.</td>
<td>TEST OF IRON FERROUS:</td>
<td>Blood red colour is formed</td>
<td>Indicates the presence of ferrous iron</td>
</tr>
<tr>
<td></td>
<td>The extract is treated with concentrated Nitric acid and ammonium thio cyanate</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>TEST FOR PHOSPHATE</td>
<td>No yellow precipitate is formed</td>
<td>Absence of phosphate</td>
</tr>
<tr>
<td></td>
<td>The extract is treated with ammonium Molybdate and concentrated nitric acid</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>TEST FOR ALBUMIN</td>
<td>No yellow precipitate is formed</td>
<td>Absence of Albumin</td>
</tr>
<tr>
<td></td>
<td>The extract is treated with Esbach’s reagent</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>TEST FOR TANNIC ACID</td>
<td>Blue black precipitate is formed</td>
<td>Indicates the presence of Tannic acid</td>
</tr>
<tr>
<td></td>
<td>The extract is treated with ferric chloride</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>TEST FOR UNSATURATION</td>
<td>It gets decolourised</td>
<td>Indicates the presence of unsaturated compound</td>
</tr>
<tr>
<td></td>
<td>Potassium permanganate solution is added to the extract</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>TEST FOR REDUCING SUGAR</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>12.</td>
<td>TEST FOR AMINO ACID:</td>
<td>No Violet colour is formed</td>
<td>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 it well.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>13.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
ANNEXURE - III

ANTI-MICROBIAL (BACTERIAL) ACTIVITY OF
SEETHAPETHY CHOORANAM AGAINST shigella
flexneri, E.coli, Solmonella. Typhi and Klebsiella

Aim:

To identify the anti-microbial (Bacterial) activity of Seethapethy chooranam against shigella flexneri, E.coli, Solmonella. Typhi and Klebsiella.

Medium : Muller Hinton agar

Components of Medium:

- Beef extract : 300gms /lit
- Agar : 17gms /lit
- Starch : 1.50gms /lit
- Casein Hydrolysate : 17.50gms /lit
- Distilled Water : 1000 ml
- pH : 7.6

Procedure:

The media was prepared from the above components and poured and dried on a Petri dish. The organism was streaked on the medium and the test drug (1 gm
drug in 10 ml of Water) was placed on the medium. This is incubated at 37°C for one over might and observed for the susceptibility shown up clearance around the drug.

**Result:**

The test drug Seethapethym chooranam was sensitive against Shigella flexneri, E.coli and Solmonella typhi, Klebsiella, Staphylococcus and not sensitive against proteus
Anti diarrhoeal study of trial medicine, Seethapethy chooranam was done by charcoal meal method in rats.

**Preparation of drug:**

Seethapethy chooranam was ground into powder by mortar and pistle and 100mg of powdered drug was dissolved in 5ml of buttermilk and 5ml of water.

**Procedure:**

Four albino rats of uniform weight and size were selected and divided two groups each having two rats. All the rats were fasted for 48 hours before starting the experiments. The first group was treated as control group and oral administration of distilled water (1ml) was made. The second group of rats was fed by trial medicine, Seethapethy chooranam at a dose of 100 mg/100 gm of body weight.

After one hour, 0.5ml of 10% aqueous charcoal solution with gum acacia was given orally to all rats of each group by stomach tube.
All the two test group animals were sacrificed by chloroform after one hour of charcoal treatment and the distance traveled by charcoal was measured. The measurements were calculated by taking the distance travelled by charcoal from the pylorus upto the maximum distance it has passed in the intestine. The distance traveled by charcoal in experimental and control groups were tabulated.

**Inference:**

Percentage of the charcoal travel distance in the control group was 86cm. In group II animals treated with trail medicine, the charcoal travel distance was 54cm. The trial medicine is confirmed to have Significant antidiarrhoeal activity.

**ANTIDIARRHOEAL ACTIVITY OF THE TRIAL MEDICINE ON RATS BY CHARCOAL MEAL METHOD**

<table>
<thead>
<tr>
<th>S.No</th>
<th>Name of Drugs/Groups</th>
<th>Dose/100gram body weight</th>
<th>Total Length of the intestine</th>
<th>Charcoal meal traveled up to</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>പിച്ചിൽ ബിഡൊളിയം + Charcoal meal</td>
<td>100mg/1ml 1ml</td>
<td>92cm</td>
<td>54cm</td>
<td>Significant</td>
</tr>
<tr>
<td>2.</td>
<td>Water + Charcoal meal</td>
<td>1ml 1ml</td>
<td>90cm</td>
<td>86cm</td>
<td>-</td>
</tr>
</tbody>
</table>
STYPTIC STUDY OF TRIAL MEDICINE

Styptic action of trail medicine, Seethapethy Chooranam was studied on rats.

**Procedure:**

Four albino rats of uniform size and weight were selected and divided into two groups each having two rats. All the rats were anasthetised with other. The first group was treated as control and rats in group II were used for experiment with Seethapethy Chooranam.

In control group, each rat was open cut through abdomen so as to expose the liver. Then a portion of the liver was cut by a sterilized scissor which resulted the bleeding. Simultaneously saline was applied over the bleeding area. The excessive blood oozing out from the cut region was removed by using blotting paper. The exact time taken for bleeding to stop was noted.

In experiment group, each rat was made to bleed as the steps followed in control group. But unlike the control group saline was replaced by Seethapethy chooranam. Trial medicine was applied over the cut region of the liver soon after bleeding starts. The exact taken for bleeding to stop in experimental group was recorded.
<table>
<thead>
<tr>
<th>Group</th>
<th>Average time taken for bleeding to stop (minutes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>याकधारित क्रिया</td>
<td>3.55min</td>
</tr>
<tr>
<td>Standard</td>
<td>2.55min</td>
</tr>
<tr>
<td>Vitamine – K Tab</td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>4.55 min</td>
</tr>
</tbody>
</table>

**Inference:**

The styptic action of trial medicine was confirmed by the lesser time taken to stop bleeding when compared to control group. Thus the trial medicine is said to have Significant Styptic activity.
ANTI-SPASMODIC EFFECT OF TRIAL MEDICINE

Antispasmodic effect of trial medicine, Seethapethy chooranam was carried out in isolated ileum of rabbit.

Preparation of the drug:

Seethapethy chooranam was mixed with 5ml of buttermilk and 5ml of water.

Procedure:

A rabbit weighing about 1.1kg was selected and starved for 48 hours. But it was allowed to drink water. Then it was sacrificed by stunning with a sharp blow below the head, followed by cutting the throat. Soon after, the abdomen was opened to expose the viscera. Then form intestinal loops (clearly Visible) the ileum was discussed out and placed on a shallow glass dish containing warm aerated tyrode solution. The lumen of the ileum was gently rinsed by saline with the help of 10ml pipette.

In fully relaxed state, the ileum was cut into required segments of about 4cm in length. Sutures were made to tie either end of the segments with the help of the needle in such a way that it was suspended in an inner tube of isolated organ bath maintained at 37°C. The tube is connected with a jar containing nutrient solution supplemented with atropine sulphate at a concentration of 0.25mg/litre. The inner tube thus obtained the nutrient solution was also
connected to outlet tube as well as oxygen tube. The ileum segment got oxygen by the aeration and fresh solution was filled after every test preceded by the removal of old nutrition solution through the outlet tube.

Acetylcholine stock solution (100mg/ml) was prepared after standardizing the optimum concentration required to contract the tissue. Then trial medicine was given to study the inhibitory effect of acetylcholine induced contractions.

0.2, 0.4, 0.6, 0.8 and 1 ml of acetylcholine were added to inner tube individually and run for 30 seconds at interval of 1 minute to each concentration. The tissue contraction at each concentration was recorded by kymograph.

0.5ml of trial medicine, Seethapethy Chooranam was added and run for 30 seconds. Without draining the nutrient solution, 0.2ml of acetylcholine was added after one minute and the response was recorded. Then the concentration of trial medicine was increased to 1ml and the same procedure was repeated and the response was recorded.

**Inference:**

The trial medicine, Seethapethy chooranam was found to have inhibitory action on acetylcholine induced contractions hence it is said to have Anti spasmodic action.
ANTI – PYRETIC STUDY ON SEETHAPETHY

CHOORANAM

Aim:
To study the Anti-pyretic study of Seethapethy Chooranam.

Preparation of the test drug:
1gm of Seethapethy Chooranam was dissolved in 5ml of buttermilk and 5ml of water. 1ml of this preparation contains 100mg of the test drug.

Procedure:
3 groups of healthy albino rats were taken, each weights about 100-200gm and divided into three groups, each group consists of 2 rats. All the rats were made hypertermic by subcutaneous injection of 12% suspension of yeast at a dose of 100mg/100gm of body weight.

10 hours later one group of animal was given the test drug (Seethapethy Chooranam) at a dose of 100mg/100gm of body weight. The other group received distilled water at a dose of 1ml/rat and kept as control. The last group was given Paracetamol at a dose of 20mg/100gm of body weight and kept as standard.

The mean rectal temperature for 3 groups was recorded at 0hr, 1½hr, 3hrs, and 4½ hrs after the drug administration. The difference between the mean
temperature of the control group, standard and the test drug were noted and compared.

**Tabulation of Result obtained:**

<table>
<thead>
<tr>
<th>S.No</th>
<th>Name of the Drug /Groups</th>
<th>Dose/100gm body weight</th>
<th>Initial Temperature in centigrade</th>
<th>After Drug administration 1 ½ hour</th>
<th>3.0 hour</th>
<th>4 ½ hour</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Saneepthi Chooranam</td>
<td>100mg/1ml</td>
<td>37</td>
<td>36.0</td>
<td>35.0</td>
<td>34.5</td>
<td>Significant</td>
</tr>
<tr>
<td>2.</td>
<td>Standard Paracetamol</td>
<td>20mg/1ml</td>
<td>37</td>
<td>35.5</td>
<td>34.5</td>
<td>34.0</td>
<td>-</td>
</tr>
<tr>
<td>3.</td>
<td>Control Water</td>
<td>1ml</td>
<td>37</td>
<td>37.0</td>
<td>38.0</td>
<td>39.0</td>
<td></td>
</tr>
</tbody>
</table>

**Inference:**

The test drug Seethapathy Chooranam has Significant Anti-pyretic action.
ACUTE ANTI-INFLAMMATORY STUDY ON
SEETHAPETHY CHOORANAM, BY HIND-PAW
METHOD

Aim:
To study the acute anti-inflammatory effect of Seethapethy Chooranam by HIND-PAW method in rats.

Equipment: Plethysmograph

Preparation of the test drug:
1 gm of Seethapethy chooranam was mixed with 5ml of buttermilk and 5ml of water. The dose 1ml contains 100mg of the test drug.

Procedure:
Six healthy albino rats weighing 100-150 gm were taken and divided into three groups, each consisting of two rats.

First group was kept a control by giving distilled water orally of 2ml/100gm body weight. The second group was given Ibuprofen at a dose of 20mg/100gm body weight. The third group received the test drug, (Seethapethy Chooranam) at a dose of 100mg/100gm body weight.

Before administration of test drug, the hind-paw volume of all rats was measured. This was done by dipping the hind-paw up to the tibio tarsal junction in a mercury plethysmograph. While dipping the hind-paw, by pulling the syringe
piston, the level of mercury in the centre small tube was made to coincide with remark and reading was noted from the plethysmograph.

Soon after measurement, the drug was administrated orally. One hour later, a sub-cutaneous injection of 0.1ml of 1% (W/V) carragenin in water was made into plantar surface of both hind paws of each rat. Three hours after carrageen injection, the hind-paw volume was measured once again. The difference between the initial and the final volume were calculated and compared.

The method is more suitable for studying anti-inflammatory activity in acute inflammation, the values are given below

<table>
<thead>
<tr>
<th>S.No</th>
<th>Name of Drug / Groups</th>
<th>Dose/100gm body weight</th>
<th>Initial Reading average</th>
<th>Final reading average</th>
<th>Mean difference</th>
<th>Percentage Inflammation</th>
<th>Percentage inhibition</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Drug</td>
<td>100mg/1ml</td>
<td>0.8</td>
<td>1.05</td>
<td>0.35</td>
<td>43.75</td>
<td>56.25</td>
<td>Moderate</td>
</tr>
<tr>
<td>2.</td>
<td>Standard Ibu Brufen</td>
<td>20mg / 1ml</td>
<td>0.80</td>
<td>0.85</td>
<td>0.05</td>
<td>6.25</td>
<td>93.75</td>
<td>-</td>
</tr>
<tr>
<td>3.</td>
<td>Control Water</td>
<td>1ml</td>
<td>0.65</td>
<td>1.5</td>
<td>0.85</td>
<td>100.0</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**Inference:**

The test drug Seethapathy Chooranam has Moderate Acute Anti-inflammatory action.
CHRONIC ANTI-INFLAMMATORY EFFECT OF
SEETHAPETHY CHOORANAM

Aim:
To evaluate the chronic anti-inflammatory effect of Seethapethy chooranam in rats by cotton pellets granuloma method.

Materials and method:
Drug preparation:
1gm of Seethapethy chooranam was suspended in 10ml of distilled water with gum acacia as suspending agent.

Cotton pellet Granuloma method:
Procedure:
Six healthy albino rats of either sex weighing between 80-100 gm were selected and divided into 3 groups each containing 2 rats.

In this procedure the drugs were given daily for 7 days. Before giving the drug, cotton pellets each weighing 10 mg were prepared and sterilized in an autoclave for about one hour under 15 Pounds atmospheric pressure.

On the day of experiment, each rat was anaesthetised with ether to implant 10mg of sterilized cotton pellet subcutaneously in the lower abdomen two on each side after making suitable incision and sutured carefully.

First group was kept as control group by giving distilled water of 2ml/100gm of body weight to the second group the standard drug Ibuprofen in a dose of 10mg/ 100gm of body weight was given.
The third group of animals was given tested drug Seethapethy chooranam in a dose of 200 mg/100g of body weight.

On the 8th day of the experiment, all the rats were sacrificed and cotton pellets found to be surrounded by granulation tissue were removed and dried in hot air oven at 55°C-60°C.

**Results:**

The details of the experimental results are shown in the table.

**EFFECT ON SEETHAPETHY CHOORANAM**

<table>
<thead>
<tr>
<th>S.No</th>
<th>Name of Drug /Groups</th>
<th>Dose/100gm body weight</th>
<th>Pellet weight</th>
<th>Pellet weight of the Granuloma of drugs</th>
<th>Mean difference</th>
<th>Percentage Inflammation</th>
<th>Percentage inhibition</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Drug</td>
<td>100mg/1ml</td>
<td>10mg</td>
<td>160mg</td>
<td>-</td>
<td>64.0</td>
<td>36.0</td>
<td>Moderate</td>
</tr>
<tr>
<td>2.</td>
<td>Standard Ibu Brufen</td>
<td>20mg / 1ml</td>
<td>10mg</td>
<td>56mg</td>
<td>-</td>
<td>22.4</td>
<td>77.4</td>
<td>-</td>
</tr>
<tr>
<td>3.</td>
<td>Control Water</td>
<td>1ml</td>
<td>10mg</td>
<td>250mg</td>
<td>-</td>
<td>100.0</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**Inference:**

The test drug Seethapethy chooranam has Moderate Chronic Anti-inflammatory action.
ANNEXURE V

LABORATORY DIAGNOSIS OF Shigella sp. and E.histolytica

COLLECTION OF STOOL SPECIMEN:

Fresh stool specimens were collected in a clear, wide mouthed container with tightly fitted lid. Specimens that were mixed with water or urine and specimens take from patients who have recived barium enema, medications containing mineral oil, bismuth, antibiotics, antimalarial or other chemical substances were considered unsuitable for examination.

Soon after collection, the lid of the container was tightly fitted to maintain adequate moisture. Stool specimens were never been frozen or thawed or placed in an incubator because parasitic forms may deteriorate rapidly.

TEST FOR OCCULT BLOOD (Benzidine test) IN STOOL SPECIMENT FOR BACTERIAL AND AMOEbic DYSENTRY

The presence of blood in the stool specimens characteristic bacterial and amoebic dysentery was identified by this test.

Stool specimen was mixed with 5ml of water and from which 1ml of emulsified specimen was mixed with 1ml of benzidine reagent. 3% hydrogen peroxide was added. Blue colour reaction indicated the presence of blood in the stools.
STOOL CULTURE FOR Shigella sp.

Selective culture media must be used to recover the significant species of bacteria from specimens that may harbour a mixture of microorganisms. Variety of culture media (eg.S.S.agar, Hektoen (HE) agar and xylose lysine doxycholate (XLD) agar) containing inhibitors to the growth of normal bowel flora to allow Shigella sp.to grow is available.

In Shigella sp.culture SS agar was used since it contains five times the concentration of bile salts compared with Macconkey agar and is more inhibitory to E.coli.

The specimen from the container was touched by a sterile platinum loop and immediately transferred the inoculum into peptone water tube where it was kept for four to five hours to let the organism multiply. After inoculation the loop was immediately sterilized. The mouth of the tube was flamed before and after the inoculation and plugged with sterile cotton.

The dipped loop from peptone water tube was streaked on the S.S sugar plate in aseptic condition. It was incubated at 37 degree Celsius for 48hrs and the shigellae colonies was seen as colourless colonies after the incubation period. Single colony of Shigella was picked from the S.S agar plate and confirmed by the monospecific high titre sera for Shigella. Biochemical tests were not carried
out since SS agar is highly selective media for shigella and high titre sera are more specific to Shigella.

MICROSCOPICAL EXAMINATION OF STOOL

SPECIMEN FOR E.histolytica

VISUAL EXAMINATION

Freshly passed stool specimens were visually examined for the presence of barium, oils, or other materials that may render them unacceptable for further processing. Patches of blood or mucus was specifically selected for microscopic study because they may be deprived directly form ulcers or purulent abscesses where the concentration of amoebae may be highest.

PROCESSING OF STOOL SPECIMEN FOR OVA AND PARASITE EXAMINATION

Three preparations were usually done for liquid, soft semisolid stool and formed stool specimen. They are,

1. Direct wet mount
2. Concentrates
3. Permanent stained smears.
The first two preparations were done for rapid detection of intestinal parasites and the third preparation was not done as it is used for permanent mouths for future study on morphology of cysts and trophozoites.

Liquid stool specimen was examined within 30 minutes after collection or semiformed stools within 60 minutes, to detect motile trophozoites. Formed stool, in which trophozoites are not expected, was examined up to 24 hours after passage.

1. Direct wet mount:
   It was either done by
   a) Direct saline mount or by
   b) Iodine mount

   The saline mount was made by emulsifying a small portion of faecal material in a drop of physiologic saline on a microscope slide and overlayed the mixed with coverslip. The mounts were not too thick or too thin as the parasites may be stained poorly (in iodine mount) in the former and forms low in numbers in later case. Saline mounts were prepared to observe the motility of trophozoites. Protozoan cysts also appeared more refractile in saline mounts than iodine preparations. In iodine mount one percent iodide and (1gm potassium iodide and 15g powdered iodine crystal to 100ml of distilled water) was used. Unlike saline, addition of iodine kill the organisms and therefore impossible to detect motility of amoebae.
Centrifugation of liquid or watery stools were carried out through it may not sediment trophozoites but it can sediment cysts.

**Concentration methods:**

Concentration methods were employed for the processing of semifomed stools since cysts, trophozoites present in low numbers still be detected. The two most commonly used methods are

1. Floatation method
2. Sedimentation method

Concentration by sedimentation (formal saline ether) was carried out. In this method small portion of stool specimen was mixed with 10ml of 10% formal saline and sieved by a strainer. From sieved suspension 6ml were taken in a tube in which 3ml of ether was added. After thorough mixing, it was centrifuged at 3000 rpm/minute. The deposited parasite was transferred to a slide after decanting the supernatant. Microscopically examination revealed the presence of cyst and iodine was used if necessary.

**EXAMINATION OF CHARCOT – LEYDEN CRYSTALS FOR AMOEBIASIS**

The crystals are particularly present in the stool with the ulcerative conditions of amoebic dystentery. They were diamond or needle shaped crystals when examining the stool for E.histolytica and found to be characteristic for amoebiasis.
ANNEXURE VI
GOVERNMENT SIDDHA MEDICAL COLLEGE
POST – GRADUATE DEPARTMENT
PALAYAMKOTTAI, TIRUNELVELI – 627 002.
Branch IV- KUZHANDHAII MARUTHUVAM.
CASESHEET PROFORMA FOR “SEETHA KAZHICHIAL”

Ward : Religion : 
I.P.No : Nationality : 
Bed No : Date of admission : 
Name : Date of discharge : 
Age : Diagnosis : 
Sex : Result : 
Fathers Name: Medical Officer : 
Occupation : 
Income : 
Address : 
Informant : 

Complaints and Duration:

History of Present illness:

History of Previous illness:
Birth History:

1) Antenatal history

2) Perinatal history

3) Neonatal history

Developmental history:

Dietetic history:

Feeding history:

Family history:

Socio economic history:

Immunization history:

General conditions on examination:

Consciousness:

Decubitus:

Stature:

Height:

Weight:

Head Circumference:

Mid arm circumference:

Nutrition:

Facies:

Skin changes:

Pallor:
Cyanosis :
Jaundice :
Brythema :
Haemangioma :
Lymphadenopathy :
Clubbing :
Koilonychia :
Jugular Vein pulsation :
Abdominal distention :
Engorge veins :
Pedal Oedema :
Temperature :

Pulse
  Rate/Minute :
  Rhythm :
  Volume :
  Tension :
  Character :
  Peripheral pulses :

Heart rate :

Respiration
  Rate/Minute :
  Type :
Character : 

Blood Pressure :

Right       Left

Upper limb

Lower limb

Congenital abnormalities
(if any)

SIDDHA ASPECTS

Nilam:

Kurinchi : 

Mullai : 

Marutham : 

Neithal : 

Palai : 

Paruvakalam:

Kaar (Aavani – Purattasi) :

Koothir (Iyppasi – Karthigai) :

Munpani (Markazhi – Thai) :

Pinpani (Masi – Panguni) :

Elavenil (Chithirai – Vaikasi) :

Muthuvenil (Aani – Aadi) :
Udal Nilai

Vatham :
Pitham :
Kabam :
Kalappu :

Gunam:

Sathuvam :
Rasatham :
Thamasam :

Mummalam

Malam :
Moothiram :
Viyarvai :

Poripulangal

Mei :
Vaai :
Kan :
Mooku :
Sevi :

Kanmendhriyam:

Kai -
Kaal -
Vaai -
Eruvaai -
Karuvaai -

**Pira Uruppukalin nilai:**

Iruthayam : 
Puppusam : 
Eraippai : 
Kalleeral : 
Manneeral : 
Kudal : 
Siruneeragam : 
Siruneerpai : 
Moolai : 

**Uyir Thathukkal:**

**Vatham:**

Pirannan : 
Abannan : 
Viyannan : 
Uthannan : 
Samannan : 
Naagan : 
Koorman : 
Kirukaran :
Dhevathathan : 
Dhananjeyan : 

**Pitha:**

Analam : 
Ranjegam : 
Sathagam : 
Pirasagam : 
Alosagam : 

**Kapha:**

Avalambagam : 
Kilethagam : 
Pothagam : 
Tharpagam : 
Sandhigam : 

**Udar Thathukkal:**

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

116
Ennvagai Thervugal:

Naa :  
Niram :  
Mozhi :  
Vizhi :  
Sparisam :

Malam

Niram :  
Edai :  
Erugal :  
Elagal :

Moothiram

Neerkuri :  Neikuri :  
Niram :  
Edai :  
Manam :  
Nurai :  
Enjal :

Naadi :  

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MODERN ASPECTS

SYSTEMIC EXAMINATION:

- Examination of the abdomen:

  **Inspection**
  - Shape of the abdomen
  - Umblicus – Shape, discharge, inflammation, nodule etc.
  - Movement
  - Pulsation
  - Dilated Veins
  - Herinal orifices
  - Skin
  - Scars and sinuses

**Palpation**

- Tenderness
- Guarding
- Rigidity
- Tumour
- Organomegaly

**Percussion**

- Fluid thrill
- Sifting dullness

**Ausculation**

- Bruit
Examination of other system

Cardio vascular system:
Respiratory System:
Central Nervous System:
Genito urinary System:

LABORATORY INVESTIGATIONS

Motion

Macroscopic
Number:
Amount:
Colour:
Nature:
Reaction:

Microscopic
Ova:
Cyst of E.histolytica:
Trophozoites of E.histolytica:
Occult blood:
Charcot-Leyden Crystals:
Culture:
Blood

Total WBC Count : 

Differential WBC Count : 

Erythrocyte sedimentation

Rate ½ hr : 

1hr : 

Hemoglobin percentage : 

Urine:

Albumin : 

Sugar : 

Deposit : 

Daily Progress

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<thead>
<tr>
<th>Date</th>
<th>Symptoms</th>
<th>Medicine</th>
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Advice
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<table>
<thead>
<tr>
<th>Informant</th>
<th>Medical officer</th>
</tr>
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# CLINICAL PICTURES

<table>
<thead>
<tr>
<th>S.No</th>
<th>SIGNS &amp; SYMPTOMS</th>
<th>DURING ADMISSION</th>
<th>DURING DISCHARGE</th>
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</thead>
<tbody>
<tr>
<td>1.</td>
<td>Frequency of Motion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td>Nature of Motion</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Tenesmus</td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.</td>
<td>Post prandial evacuation of bowels</td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Abdominal pain</td>
<td></td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Tenderness</td>
<td></td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Incessant cry</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Fever</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>Nausea and vomiting</td>
<td></td>
<td></td>
</tr>
<tr>
<td>10.</td>
<td>Others, if any</td>
<td></td>
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8. Siddha Maruthuvam
10. Agathiyar – 2000
11. Athma Ratchamirtham
12. Jeeva Ratchamirtham
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<td>ESR mm/hr</td>
<td>TC/cu-mm</td>
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<td>E%</td>
<td>P%</td>
</tr>
<tr>
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<td>Ramkumar</td>
<td>12/MC</td>
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<td>68%</td>
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</tr>
<tr>
<td>3</td>
<td>2625</td>
<td>Nair</td>
<td>11/MC</td>
<td>9600</td>
<td>68%</td>
<td>24</td>
<td>9400</td>
</tr>
<tr>
<td>4</td>
<td>2632</td>
<td>Murugaperumal</td>
<td>10/MC</td>
<td>10400</td>
<td>70%</td>
<td>16</td>
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</tr>
<tr>
<td>5</td>
<td>2701</td>
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<td>9/MC</td>
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</tr>
<tr>
<td>6</td>
<td>2702</td>
<td>Sheik Mohamed Badusha</td>
<td>11/MC</td>
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<tr>
<td>7</td>
<td>2741</td>
<td>Mohamad vakof</td>
<td>8/MC</td>
<td>9600</td>
<td>68%</td>
<td>22</td>
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</tr>
<tr>
<td>8</td>
<td>2977</td>
<td>Jakkariya</td>
<td>8/FC</td>
<td>10200</td>
<td>55%</td>
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</tr>
<tr>
<td>9</td>
<td>2983</td>
<td>Mansor</td>
<td>10/MC</td>
<td>8000</td>
<td>55%</td>
<td>5</td>
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</tr>
<tr>
<td>10</td>
<td>2984</td>
<td>Sumsutheen</td>
<td>12/MC</td>
<td>7500</td>
<td>56%</td>
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<td>2985</td>
<td>Dineshkumar</td>
<td>10/MC</td>
<td>9200</td>
<td>64%</td>
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<tr>
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<td>2986</td>
<td>Seyad Ibrahim</td>
<td>8/MC</td>
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</tr>
<tr>
<td>13</td>
<td>221</td>
<td>Vijaya prapakar</td>
<td>8/MC</td>
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<td>65%</td>
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</tr>
<tr>
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<td>223</td>
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<td>8/MC</td>
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</tr>
<tr>
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<td>238</td>
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</tr>
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</tr>
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<td>1255</td>
<td>Alagumalai</td>
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<td>76%</td>
<td>24</td>
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<tr>
<td>19</td>
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<td>Muthu</td>
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<td>24</td>
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</tr>
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<td>20</td>
<td>1280</td>
<td>Raja</td>
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<td>70%</td>
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**MICROSCOPIC EXAMINATION OF STOOL AND CULTURE FOR SHIGELLA Sp. AND E.HISTOLYTICA.**

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<th>Name</th>
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<th>Erythrophagocytic motile E.histolytica trophozoites</th>
<th>Cyst of E.Histolytica</th>
<th>charcotleyden crystals</th>
<th>Occult blood</th>
<th>Leucocytes</th>
<th>Stool culture for identification of shigella Sp.</th>
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<td>Jakkariya</td>
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<td>Antonyraj</td>
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<td>+</td>
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<td>19</td>
<td>1279</td>
<td>Muthu</td>
<td>10/MC</td>
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<tr>
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<td>1280</td>
<td>Raja</td>
<td>7/MC</td>
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<td>+</td>
<td>-</td>
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(+) Indicates presence  (-) Indicates absence  B.T- Before Treatment  A.T-After Treatment
## IN PATIENT CASE REPORT OF TWENTY CASES FOR THE DISEASE ‘SEETHA KAZHICHAL’

<table>
<thead>
<tr>
<th>S.No</th>
<th>LP No</th>
<th>Age/Se x</th>
<th>Duration of Illness</th>
<th>Before treatment</th>
<th>After treatment</th>
<th>DOA</th>
<th>DOD</th>
<th>No of days treated</th>
<th>Results</th>
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<tbody>
<tr>
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<td>2623</td>
<td>12/MC</td>
<td>1</td>
<td>Passing brown scanty loose stools with blood and mucus, abdominal pain, rectal tenesmus, indigestion, abdominal discomfort, post-prandial evacuation of bowel, tenderness over caecum and ascending colon, nausea and vomiting were present</td>
<td>Patient passing formed stools 2 times a day. Abdominal pain, rectal tenesmus, indigestion were relieved. No post prandial evacuation of bowel, No nausea and vomiting</td>
<td>20.11.06</td>
<td>22.11.06</td>
<td>3</td>
<td>Symptoms relieved and discharged</td>
</tr>
<tr>
<td>2</td>
<td>2624</td>
<td>12/MC</td>
<td>2</td>
<td>Passing brown scanty loose stools mixed with blood and mucus, abdominal pain, rectal tenesmus, indigestion, abdominal discomfort, tenderness over caecum and ascending colon, nausea and vomiting, post prandial evacuation of bowel were present</td>
<td>Passing formed stools 2 times a day. Abdominal pain, recal tenesmus, indigestion were relieved. No nausea and vomiting, post prandial evacuation of bowel</td>
<td>20.11.06</td>
<td>22.11.06</td>
<td>3</td>
<td>Symptoms relieved and discharged</td>
</tr>
<tr>
<td>3</td>
<td>2625</td>
<td>11/MC</td>
<td>2</td>
<td>Passing red scanty stools mixed with blood and</td>
<td>No fever, abdominal pain and rectal tenesmus</td>
<td>20.11.06</td>
<td>22.11.06</td>
<td>3</td>
<td>Symptoms relieved and discharged</td>
</tr>
<tr>
<td>No.</td>
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<td>Date</td>
<td>Treatment</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Passing red scantly stools mixed with blood and mucus. Fever, abdominal pain, rectal tenesmus and tenderness over descending colon were present. Post prandial evacuation of bowel is present.</td>
<td>No abdominal pain, discomfort and tenesmus passed formed stools 2 times a day. No nausea and vomiting. No postprandial evacuation of bowel.</td>
<td>20.11.06</td>
<td>22.11.06</td>
<td>3</td>
<td>Symptoms reduced and discharged</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>2701</td>
<td>9/MC</td>
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<tr>
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<td></td>
<td></td>
<td>Passing brown stools for 4 times a day. Abdominal pain, tenesmus, abdominal discomfort, indigestion, flatulence, nausea, vomiting and tenderness over caecum and ascending colon were present.</td>
<td>Abdominal pain, indigestion and rectal tenesmus were relieved.</td>
<td>28.11.06</td>
<td>30.11.06</td>
<td>3</td>
<td>Symptoms relieved and discharged</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>2702</td>
<td>11/MC</td>
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<tr>
<td></td>
<td></td>
<td></td>
<td>Passing red scantly loose stools mixed with blood and mucus, abdominal</td>
<td>passing formed stools once a day.</td>
<td>28.11.06</td>
<td>30.11.06</td>
<td>3</td>
<td>Symptoms relieved and discharged</td>
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<tr>
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<td>Age/Code</td>
<td>Days</td>
<td>Symptoms and Treatment Description</td>
<td>Stools Removed Times per Day</td>
<td>Other Medical Details</td>
<td>Outcome</td>
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<tr>
<td>7</td>
<td>2741</td>
<td>8/MC</td>
<td>2</td>
<td>Pain, discomfort, indigestion, flatulence, rectal tenesmus and tenderness over descending colon were present</td>
<td>3 times a day</td>
<td>No fever-patient passed formed stools 3 times a day</td>
<td>Passed formed stools 2 times a day. Abdominal pain, rectal tenesmus were slightly reduced. No fever</td>
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<tr>
<td>8</td>
<td>2977</td>
<td>8/FC</td>
<td>4</td>
<td>Abdominal discomfort, abdominal pain, indigestion, flatulence, passing brown stools mixed with blood and mucus for 6 times a day, rectal tenesmus, tenderness over ascending colon, postprandial evacuation of bowel were present</td>
<td>2 times a day</td>
<td>Passing formed stools 2 times a day. Abdominal pain, indigestion and tenesmus were relieved. No nausea, vomiting and post prandial evacuation of bowel</td>
<td>26.12.06</td>
<td>29.12.06</td>
<td>4</td>
</tr>
<tr>
<td>9</td>
<td>2983</td>
<td>10/MC</td>
<td>3</td>
<td>Passing red scanty stools 4 times a day, fever, abdominal pain,</td>
<td>2 times a day</td>
<td>Passing formed stools 2 times a day. Abdominal pain and tenderness</td>
<td>26.12.06</td>
<td>29.12.06</td>
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<td>Discharge Date</td>
<td>Discharge Status</td>
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<td>10 2984</td>
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<td>Fever, abdominal pain and discomfort, indigestion, flatulence, passing red scantly stools with blood and mucus 6 times a day, rectal tenesmus, tenderness over caecum and ascending colon were present.</td>
<td>Abdominal pain, indigestion, rectal tenesmus were relieved passing formed stools 2 times a day. No fever</td>
<td>26.12.06</td>
<td>29.12.06</td>
<td>4</td>
<td>Symptoms relieved and discharged</td>
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<td>11 2985</td>
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<td>Passing brown scantly loose stools with blood and mucus 5 times a day, abdominal pain, abdominal discomfort, tenderness over the descending colon were present</td>
<td>No abdominal pain and discomfort. Passing formed stools 3 times a day</td>
<td>26.12.06</td>
<td>29.12.06</td>
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<td>Passing red stools with blood and mucus 6 times a day, rectal tenesmus, abdominal pain, discomfort, indigestion, tenderness over transverse colon were</td>
<td>Passing formed stools 2 times a day. Indigestion, abdominal pain, discomfort and tenesmus were reduced</td>
<td>26.12.06</td>
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<tr>
<td>13</td>
<td>221</td>
<td>8/MC</td>
<td>3</td>
<td>Passing brown scanty loose stools five times a day mixed with blood and mucus, abdominal pain, discomfort, fever, tenderness over the ascending colon and caecum were present</td>
<td>Passing formed stools 3 times a day. Abdominal pain and tenderness slightly reduced. Fever subsided</td>
<td>25.01.07, 27.01.07</td>
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<td></td>
</tr>
<tr>
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<td>223</td>
<td>8/MC</td>
<td>3</td>
<td>Passing red scanty stools with blood and mucus, abdominal pain, abdominal discomfort, flatulence, rectal tenesmus, tenderness over the ascending colon were present.</td>
<td>No abdominal pain and rectal tenesmus passing formed stools 2 times a day.</td>
<td>25.01.07, 27.01.07</td>
<td>3 Symptoms relieved and discharged</td>
<td></td>
<td></td>
</tr>
<tr>
<td>15</td>
<td>238</td>
<td>8/MC</td>
<td>2</td>
<td>Post prandial evacuation of bowel, passing red scanty loose stools mixed with blood and mucus, abdominal pain, indigestion were present. Tenesmus, tenderness over caecum and ascending colon, nausea and vomiting were also present</td>
<td>No post prandial evacuation of bowel – No nausea and vomiting-abdominal pain and tenesmus were slightly reduced patient passed formed stools 2 times a day</td>
<td>28.01.07, 30.01.07</td>
<td>3 Symptoms reduced and discharged.</td>
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<td>Duration</td>
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<td>16</td>
<td>1091</td>
<td>12/MC</td>
<td>2</td>
<td>Passing red loose stools with blood and mucus, abdominal pain and discomfort, tenesmus, tenderness over the transverse colon were present</td>
<td>2 days</td>
<td>Passing formed stools 2 times a day. Abdominal pain, tenesmus were relieved</td>
<td>24.04.07 26.04.07</td>
<td>3 Symptoms relieved and discharged.</td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>1239</td>
<td>11/FC</td>
<td>3</td>
<td>Abdominal pain and discomfort, flatulence, passing dark brown scantly loose stools mixed with blood and mucus, tenesmus, tenderness over descending colon were present</td>
<td>3 days</td>
<td>Passing loose stools 2 times a day. No fever abdominal pain and discomfort were relieved</td>
<td>11.05.07 13.05.07</td>
<td>3 Symptoms relieved and discharged.</td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>1255</td>
<td>11/MC</td>
<td>4</td>
<td>Passing red scanty loose stools with blood and mucus, abdominal pain, discomfort, tenesmus, tenderness over descending colon were present</td>
<td>4 days</td>
<td>Passing loose stools 3 times a day. Abdominal pain and tenderness slightly reduced</td>
<td>11.05.07 13.05.07</td>
<td>3 Symptoms reduced and discharged</td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>1279</td>
<td>10/MC</td>
<td>2</td>
<td>Passing red scanty stools mixed with blood and mucus 4 times a day, abdominal pain,</td>
<td>2 days</td>
<td>Passing formed stools 2 times a day. No abdominal pain and tenesmus</td>
<td>14.05.07 16.05.07</td>
<td>3 Symptoms relieved and discharged</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>1280</td>
<td>7/MC</td>
<td>2</td>
<td>abdominal discomfort, rectal tenesmus, tenderness over transverse colon were present</td>
<td>Abdominal pain, discomfort, rectal tenesmus were relieved, passing formed stools 2 times a day</td>
<td>14.05.07</td>
<td>16.05.07</td>
<td>3</td>
<td>Symptoms relieved and discharged.</td>
</tr>
</tbody>
</table>